**MISSING NUMBERS ARE WITHDRAWN PRESENTATIONS**

P001

Effects of an Erbium-Yag laser resufacing treatment on big and bulbous noses

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Effective treatment of bulbous or flabby nose with surgery is difficult and has not good results.
The objective of this study was to determine the response and side effects of treatment of these big noses with Erbium Yag laser .In this study we have chosen 11 patients with typical big bulbous or flabby nose. One of them had also a depressed scar due to previous leishmaniosis over tip of the his nose .
Laser treatment was performed in one or two sessions.
Protocol of treatment was 2000 mj energy and pulse rate of 10 htz with 10 mm2 spotsize .
In each session 8 passes of laser were done.
Four weeks after first session , four patients has shown very good to excellent improvement
And they don't need to have second session .
Seven patients have shown fine results , but for better results they were undergone a second session .
Healing of resurfacing area was very short comparing to preoral & preorbital resurfacing areas ..(about 10-14 days ) . there was no side effects but 2 patients complaining of mild burning sensation in 5 days after operation and it was relieved with a topical cream .
All of patients and also surgeons were satisfied with the results and patients now experience a smaller nose with good cosmetic appearance .
*Keywords :* Laser - Erbium Yag Laser - Rhinophyma -cosmetic
Treatment- flabby nose - bolbous nose

P002

Surgical treatment of recidivant ischial sores with "jacknife" double flap

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The treatment of recurrent pressure sores has long been debated, never leading to widely accepted conclusions . This is especially true for those in the ischial area where cronic mechanical stress is concentrated. We tried to overcome the problem by using a double flap converging on the exposed bony ulcer, the first made of a splitted inferior part of the gluteus maximus, the second made of a fasciocutaneous flap.
The method applied is based on a "jacknife" movement of two flaps, the first is just made of a belt of gluteus maximus muscle with the pivot point at the level of the piriform aperture. After disanchoring it from the great trochanter, it is rotated 90 degree on the ischial bone. Above the former flap it is transposed a second flap, this time a fascio-cutaneous one, for instance a "Dufourmentel flap" drawn on the near tissues (i.e. the radix of the thigh, the glureal region etc.).
This technique has been applied till now on three patients, all women aged between 60 and 68 years with paraplegia. They had "difficult" ischial sores either because of recidivant or because complicated by associated pathologies ( recto-vaginal fistula in one case). After a follow-up ranging between 8 months and 24 months no complains have been recorded.
Though the span of time is relatively short, it is of interest to note how the patients regained a fully normal style of life even allowing more mechanical stress than usual according to what the patients reported. We wait for a wider application of this surgery and for a better understanding of its validity.

P003

Surgical treatment of multiple site decubital ulcers

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In the last 10 years in our clinic 65 patients with total of 135 ulcers were treated. The most common localization was sacral and bilateral trochanteric. In 45% patients multiple localization was present. Surgical treatment included large reconstructive procedures when multiple ulcers and exposed bones were present. In 10 patients femoral head resection with disarticulation of hip joint was done because of pyoarthros. In all patients with multiple ulcers systemic infection was confirmed by means of haemoculture and urinoculture which aggravated patient condition. Two or more systemic antibiotics were applied for treatment. All patients presented with lower levels of blood proteins and albumin and anemia was also a constant feature, which was corrected preoperatively and in the postoperative period
In defect reconstruction, after surgical excision of ulcer and resection of exposed bones, local cutaneous, myocutaneous and muscular flaps were used. In 30% of patients defects were reconstructed in two-staged operative procedures. The most common complication was hematoma, infection, partial flap necrosis and wound dehiscence.
Surgical treatment in patients with multiple decubital ulcers depends on their number and preoperative patient status. Adequate reconstruction is very important and also is involvement of orthopedist, infectologist, transfusiologist, nutritionist and physical therapy specialist in the process of treatment.

P004

Microbial load and localization of staphylococcus aureus in ulcers

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Purpose: To make clear the pathogensis between bacterial colonization and infection in ulcers, we investigated microbial load and localization of staphylococcus aureus in ulcer wounds.
Materials and methods: Twenty-three specimens from 15 patients were obtained from Staphylococcus aureus ulcers; these included burn, decubitus, and diabetic ulcers. A microbiological quantitative analysis was done as were histological examinations using haematoxylin eosin and gram stain. The same confocal laser scan used in the histological examinations was also used to detect microbial localization. The specimens divide in two groups: the necrosis group and the granulation group. The former includes nectrotic tissue in the ulcer, the later granulation tissue only.
Results: A microbiological quantitative analysis of the necrosis group showed the bacterial count ranging between 4,200CFU/gram and 85,000,000 CFU/gram, with an average of those, 8,200,000 CFU/gram. Histologically, the organism colonized the nectrotic tissue and numerous polymorphonuclear leukocytes infiltrated below the tissue. In the granulation group, bacterial count showed between 1,90 CFU and 26,000 CFU, with an average of those, 4,200 CFU. In this group, a small number of microcolonies located in the superficial fibrin layer on the granulation tissue.
Discussion and Conclusion: The ulcer's bacterial colonies originate in the necrotic tissue. Debridement therefore should be performed to control wound infection. In granulation tissue, pathogenic organisms can be decreased by scrubbing away the superficial fibrin layer.

P005

Neurophysiologic and clinical outcome following sciatic, tibial and peroneal nerve reconstruction

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*Purpose:* Injuries to the nerves of lower extremities presumably have a worse prognosis and are generally neglected despite studies of repair of nerve injuries of the upper extremity. The goal of our study was to assess the outcome of sural nerve grafting of the damaged lower extremity nerves.
*Material and methods:* 65 patients with sciatic, tibial and peroneal nerve lesions were evaluated before and after surgery. Patients were followed for a minimum of 48 (average 54) months. The patient group comprised 54 males and 11 females ranging from 12 to 35 years of age. Neurological and electromyographical (EMG) examinations were carried out. To access the return of motor and sensory function grading systems were used. For evaluation of trophic function special grading system was adopted.
*Results:* 17 cases had good recovery of leg function, 21 satisfying, 15 useful, and 12 poor restoration. All good results were connected with early surgical intervention - up to 2 months, as
well as with young age. All cases (42) with severe trophic disturbances like deep ulcers and erosions had functional recovery. EMG examination revealed increased motor and sensory nerve conduction velocity, amplitude of compound muscle and sensory nerve action potentials.
*Conclusion:* A short time lag between the accident and the surgery was recognized as a significant factor for a successful outcome. The presence of severe vegetative symptoms is the indication of surgical intervention in traumatic damage of lower limb nerves. Although the results of lower extremity nerve injuries typically have been dismal, our study refutes this opinion and we believe that the sural nerve grafting for segmental loss of lower limb nerves is a viable treatment option when end-to-end repair is not possible.

P006

Radial nerve palsy due to tumor compression in the elbow region

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INTRODUCTION:
Compression of the radial nerve by tumors is a rare condition in clinic and literature. Gradual onset of symptoms, misleading signs and symptoms as well as difficulties in diagnosis justify further publication.
MATERIAL AND METHODS:
Between 1999 and 2004 14 patients aged 61 years (11-80) on average were operated on a tumor compressing the radial nerve in the elbow region. Complete resection, decompression and neurolysis was performed under regional anaesthesia. Follow-up averaged 39 months after surgery.
RESULTS:
Histology revealed 8 lipomas, 1 hemangioma, 1 myxoma, 2 ganglions and 2 neurofibromas. The time elapsed between onset of palsy and surgery laid between 2 and 24 months (mean 10). Tumor history passed 1 - 10 years in 10 patients, 4 did not realize any mass. Additionally 2 patients complained of pain and 4 of paraesthesia. In any patient there could be diagnosed at least a partial paralysis of different degree and dissociation. Finger extension was involved in all patients. Electrodiagnostic studies were inconsistent and of minor diagnostic value. MRI detected all tumors except one. The postoperative course was complicated by 2 hematomas, 1 CRPS, 1 temporary aggravation of paralysis and 1 recurent synovial tumor. Complete recovery of nerve function was documented in 8 and subtotal in 4 patients. 2 patients needed tendon transfer for partial or missing recovery. The longer the history of compression the longer the recovery lastet, on an average 9 months, independent of the patients age. The mean DASH-score was 18 (1-46).
DISCUSSION:
Complete recovery of a radial nerve palsy caused by tumor compression in the elbow region ought to be realized by surgical decompression at an early stage up to 12 weeks after onset of symptoms. 6 - 9 months period awaiting recovery should preceed individually planned tendon transfers.

P007

Minimal invasive decompression of ulnar nerve at elbow with endoscopic assistance and anterior transposition

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**Purpose**: Controversy still exists in the selection of ideal technique in terms of the morbidity and benefit of surgery versus the severity of disease in treatment of cubital tunnel syndrome. A combination of open and endoscopic technique was utilized to minimize peri-operative morbidity and post-operative scar discomfort in release of all potential sites of ulnar nerve compression at elbow followed by anterior transposition.
**Materials and methods**: In 18 patients (aged 21-72 years) with clinical and electrodiagnostic signs (Mc Gowan stage I-III) of cubital tunnel syndrome (16 primary, 2 recurrent) 20 cm of ulnar nerve was released through 35 mm long incision above medial epicondyle and with the use of 4 mm 30º standard face-lift endoscope with custom made introductor. Subcutaneous transposition was performed through the same incision. In the mean follow up time of 10 months (range 7-12) patients were assessed clinically according to Bishop rating system, electrodiagnostically and subjectively by a questionnaire.
**Results**: No macroscopically visible nerves and vessels were injured during the procedure. In one case conversion to standard open approach was necessary due to ganglion in a distal part of cubital tunnel. The only postoperative complication was one hematoma, that resolved conservatively. There was no scar discomfort (painful neuroma, impaired sensibility, burning sensation) or elbow extension deficit after surgery, wounds healed within a week, and no analgesics were necessary. All patients improved clinically and electrodiagnostically, were satisfied with the procedure and returned to full activities within 3 weeks.
**Conclusion**: With safe and reliable technique with short incision, minimum soft tissue dissection and early post-operative mobilization we were able to preserve the benefits of the conventional approaches, namely complete release and possibility of anterior transposition, and to avoid problems such as painful scaring, recurrence and elbow contracture.

P008

## The ASPIRIN muscular flaps : a very effective analgesic treatment of painful neuromas at the forearm, the wrist and the hand

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Purpose : The treatment of painful neuromas in continuity in the upper limb is very difficult particularly when there is a few sensitive or motor disorders downstream these neuromas. The association of an external neurolysis at the level of the neuroma and a local muscular flap wrapped around it seems to be a very effective analgesic treatment.
Materiel and methods : From October 95 to January 2005, 40 patients aged between 10 and 55 years old and suffering essentially from painful neuroma at their upper limb have benefited from this treatment. The pain was severe and triggered off only by an external stimuli. All these neuromas were in continuity; At the wrist, the median nerve was interested in 17 cases and the ulnar nerve in 8 cases. At the lower third of the forearm, these nerves were respectively interested in 3 cases and 5 cases. At the hand the digital nerves were interested in 7 cases. After the external neurolysis the local muscular flap used to wrap these neuromas were : - At the wrist the quadratus pronatus flap proximally based in 19 cases and distally based in 6 cases - At the lower third of the forearm : a strip of the flexor carpi ulnaris in 6 cases and a strip of the flexor digitorum profondus in 2 cases - At the hand : - The lumbrical muscles proximally based.
Results : The pain has nearly completely disappeared in all cases and with a mean follow up of 4 years, this effect was remained stable. No functional sequellae were reported with the use of these flaps.
Conclusion : The ASPIRIN effect of these muscular flaps in the treatment of painful neuromas in continuity at the upper limb is real.

P009

## End-to-side neurorraphy in reconstruction of large posttraumatic injuries of peripheral nerves

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**ABSTRACT**
In some circumstances large posttraumatic injuries of upper extremity peripheral nerves could impose other surgical repair methods than usual in order to get better functional results. The major aim of end-to-side neurorraphy for larger injuries is to optimize the functional results. During the last 5 years (1999-2004) we have performed end-to-side neurorraphy in 8 patients: in 3 cases end-to-side neurorraphy of ulnar nerve to undamaged median nerve (2 patients operated in emergency conditions and 1 patient after 4 weeks) and in 5 patients end-to-side neurorraphy of ulnar nerve to repaired median nerve with graft from the proximal end of ulnar nerve (4 patients operated in emergency conditions and 1 patient after 3 months). The functional recovery has been appreciated by using clinical tests (sensitive and motor rehabilitation) and functional tests (nervous conducting velocity) at 6 months, 1 and 2 years after surgery. The functional results were good in 6 patients with immediate reconstruction, satisfactory in one patient operated after 4 weeks and unsatisfactory in one patient operated after 3 months. By using local resources performing end-to-side neurorraphy could be an important tool in solving the large posttraumatic injuries of peripheral nerves.
**Key Words:** large peripheral nerve injuries, end - to - side neurorraphy, functional recovery.

P010

Patient outcome following traumatic brachial plexus reconstruction

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*Purpose***:** To observe long-term functional recovery following surgical reconstruction of brachial plexus injuries including root avulsion.
*Material and methods***:** 27 patients with brachial plexus injuries were evaluated at an average follow-up of 7 years (range, 4-8). The patients were divided into 2 groups: first group - without (24) and the second - with (3) root avulsion injuries. Neurolisis, end-to-end repair and sural nerve grafting was performed in the first group; brachial plexus avulsion injuries (second group) were treated by nerve transfers: partial ulnar to median, thoracodorsal to musculocutaneous and spinal accessory to axillary. Neurological and EMG examinations were carried out. To access the return of motor and sensory function grading systems were used.
*Results***:** First group: 5 cases had good recovery of hand function, 11 satisfying, 5 useful and 3 poor restoration. All good results were connected with early surgical intervention - up to 2 months, as well as with young age. Second group: there was no impairment of healthy limb function; transfer of the thoracodorsal nerve to the musculocutaneous nerve provided excellent recovery of elbow flexion in all three patients; functional recovery of the recipient area reached satisfying outcome in 2 patients after ulnar to median and spinal accessory to axillary nerve transfers, in one patient - spinal accessory to axillary nerve transfer provided useful restoration and ulnar to median - poor. EMG examination revealed increased motor and sensory nerve conduction velocity, amplitude of compound muscle and sensory nerve action potentials.
*Conclusion:* Neurotization and grafting play an important role in the treatment of patients with brachial plexus injures. Thoracodorsal to musculocutaneous and spinal accessory to axillary nerve transfers were all effective for the reconstruction of brachial plexus avulsion injuries. Reimplantation of avulsed nerve roots with nerve transfers may be acceptable and can improve patients social rehabilitation.

P011

Hyperexpansion of the thigh skin; a balance between technical and psychological improvements: a case report

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Skin hyperexpansion could be usefully exploited to work out aestetic sequelae in particular patients who complain other than the physical defect even a psychological imbalance. A young woman, 14 years old , came to our attention after a crash accident happened one year earlier. She complained a wide and visible scar in the lateral left thigh (cm.12 X 10 cm) due to the excision of skin and subcutaneous tissue eschar. The immediate surgical

step was aimed at the least invasive approach: an expanded split thickness skin graft needed because of the wideness, the depthness (till the fascia), the undermined borders and, above all, the contamination of the wound. One year later, though the wound was well consolidated, the psychological impact led the patient to look for a solution: we implanted above the muscular fascia of the lateral external face of the upper thigh a croissant tissue expander without stable base (CUI 1100 cm3, ref. CZV 2116, Inamed Corporation), already prepared with 200 cm3 of saline solution, which has been inflated 300 cm3 by 300 cm3 of saline solution, on a twenty to twenty days regular basis. Achieved the final volume, we waited a further span of time (one month) to redrape the expanded skin. It is noteworthy that, with a follow up of six months, the aesthetic advantage and the related psychological improvement is evident and gratifying for the patient just because of the substitution of a retracted, "undersurfaced" split thickness skin graft with pliable, though so thin, expanded skin. However, technically speaking, it still remains from our standpoint two main question marks: how to face a so long scar needed to mould the expanded skin and the thinness of the "skin flap".

P012

Tissue expansion in the upper limb

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Introduction.
The reconstruction of upper limb with a good functional and esthetic outcome is very difficult becouse of the complex function and the particular anatomy. To obtain better results we utilized tissue expansion.
Material and Methods.
We treated 21 patients with post-traumatic scars (14 males and 7 females) with a mean age of 37,4 years. 3 cases regarded the arm, 7 the forearm and 11 the wrist and the hand. We utilized 28 expanders with a mean expansion time of 48,3 days. The reservoir was placed under the skin in arm and forearm but externally in wrist and hand.
Results and Conclusions.
At the arm and forearm we preferred lomg and voluminous expanders in order to take advantage of the presence of expandable skin along the longitudinal axis of a cilindric structure.
To cover nerves and tendons we leaved the superficial capsule to reduce post-surgical adherence. The results are always lasting after more than 2 years.
At the wrist and hand there is less skin and the vascularization is terminal, moreover at this level there are a lot of delicate structure in a very little space.
So on expanders must be more little and with very different shapes and generally are overexpanded. In 2 cases skin and tendons have been expanded "en bloc" treating a very resistant contraction with joint stiffness.
We had 4 minor complications and only 1 major complication with expander removal for a border-line coagulopathy.
In all cases we obtained a godd functional and cosmetic result.
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P013

Soft tissue gain in rectangular expanders

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Tissue expansion, adjunct to standard flap and other reconstructive procedures, is a mechanical process that increases the surface area of local tissue available for reconstructive procedures. Although there are different shapes of expanders, use of the rectangular expander provides the most effective surface area gained when compared to the round or crescent ones. Rectangular expanders are the most frequently used ones in the body and extremities when treating burn scars.
The area gained in rectangular expanders is the sum of three long sides and the two lateral sides of the prism. When designing the advancement flap the soft tissue gained by the expansion of the long rectangular surfaces is used. However the two expanded sides on the lateral surfaces are usually not efficiently used because the direction of the advacement flap that should be designed for them is 90 degrees perpendicular to the advacement flap planned for the long side.
We designed two transposition flaps for these two lateral surfaces based on the distal part of the long surface, trusting on the fact that there is a significant increase in vascularity of expanded tissue.
Despite the fact that the incision is longer, by adding these two flaps on the lateral sides, the soft tissue gained is higher. These flaps are especially useful in patients for whom large amount of soft tissue gain together with functional outcome is important. We do not recommend this technique for cosmetic reconstructions due to the incisions for the two extra flaps. The technique is especially designed for releasing the burn scar contractures where enough soft tissue is not available for larger expanders.

P014

Massive diffuse congenital lipomatosis of the lower extremity: A case report

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Purpose: Diffuse congenital lipomatosis is a rare condition notable for the infiltration of benign adipose tissue into skin, skin subcutaneous tissues, and muscles. Lacking a limiting capsule, this entity often involves a significant portion of an extremity and the trunk.
Material and Methods: A 21 year-old male presented for evaluation of congenital lipomatosis of the right lower extremity which had grown prodigiously over the course of his lifetime. He had undergone multiple conservative debulkings of the tumor since infancy. In addition to wound care issues, the patient had been urgently hospitalized and transfused for massive hemorrhage secondary to an open, previously skin grafted wound. He complained of gait disturbances and an inability to wear normal clothing but wrestled competitively in high school nonetheless and had an extremely asthenic body habitus. Examination revealed the right leg to be nearly twice the size circumferentially as the left. Enormous soft tissue masses of a rubbery consistency were present around the lower extremity from the lower third of the leg extending and enlarging in a cone-shaped fashion superiorly into the right buttocks and flank. An MRA revealed extensive, diffusely infiltrating fat which extended subcutaneously and circumferentially, insunated into the muscles of the buttocks, thigh and calf.
Result: The total amount of tissue removed in two-staged surgery is 8.4 kg. Patient's weight before the first surgery was 66 kg. The total amount of soft tissue removed in two stages reached to 13% of his initial body weight.
Conclusion: At 12- month follow-up, the patient shows excellent results with restored symmetry to the lower extremities. Surgery is not contraindicated and radical resection may lead to significant cosmetic and functional improvement with the relief of tumor bulk. Because local recurrence after surgical removal may occur, long-term follow up of these patients is recommended.

P015

Non-identical tuberous breast deformities in identical monozygotic twins

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First described in 1976 by Rees and Aston because of its resemblance to a tuberous root, tuberous breast deformity is a rare disorder affecting an unknown number of women both physically and psychologically. The

exact case for this anatomic abnormality is as difficult to identify as the number of women affected.
While there have been many names given to similar deformities, all seem to be a variant of a common theme. All seem to share a deficiency in the vertical or horizontal dimensions of the breast and differ in respect to the amount of herniation of the areolar complex and of underdeveloped breast tissue.
There have been several hypotheses about the genetic or embryologic cause behind this poorly understood deformity. In 1930, Glaesmer described it as a "phylogenetic relapse" or a reversion to a more primitive animal 'teat'. Others such as Pers have hypothesized that there is a failure of tissue differentiation in the fetal thorax similar to Poland's syndrome. More recently reports from Grolleau et al describe the entity as a defect of the superficial fascia at the lower pole of the breast.
Case Report
We present a case of 19 year old monozygotic twins who were both treated at Mayo Clinic for tuberous breast deformity. The first sibling had a left sided tuberous breast deformity with a normal right breast while her identical twin sister was found to have bilateral tuberous breast deformities.
Genetic testing reveals that the two sisters are in fact monozygotic twins, being derived from the same genetic structure.
Discussion
The finding of nonidentical tuberous breast deformities in identical twins sheds some light into an interesting dilemma. If the basis for this group of breast disorders is in fact due to a genetic mutation, why then are these genetically identical individuals breast deformities not identical?

P016

Penile enlargement corporoplasty with prosthetic implant: original reconstructive technique for sexual and erectile dysfuntion

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INTRODUCTION
Actually the techniques used for penile augmentation in congenital hypoplasia or penile dysmorphophobia constitute a controversial problem in aesthetic and reconstructive surgery, because of the lacked standardization of the techniques and the corrected criteria of selection of the patients. When patients' clinical condition are associated to erectile dysfunction, the surgical solution becomes more complex. The authors propose an original technique of corpus cavernosum enlargement in combination to hydraulic prosthesis implantation.
MATERIAL & METHODS
From March 1998 to January 2004, 20 patients with complete erectile dysfunction underwent prosthesis implantation and penile enlargement. 4 of them presented penile hypoplasia, 10 fibrous or retraction of the penis and 6 of them penile dysmorphophobia. The first surgical step included "penile degloving", with endocavernous prosthetic cylinders implantation (Mentor type) and positioning of the reservoir in an intraperitoneal space, through middle soprapubic access.
The second step consisted in structural widening of the corpora cavernosa using two free grafts of saphenous vein, inserted after double longitudinal incision to all length of albuginea. The successive periodical modelling of the tunica albuginea through repeated cycles of prosthetic cylinders offer a best adaptation consolidation of the new-tunica albuginea to the new dimensions.
RESULTS
This surgical technique was well tolerated and missing of important complications. In particular we did not observe any hemorrhagic, infective or ischemic complications. The aesthetic and functional evaluation was verified after a 6 months follow-up. The increment of the penile diameter ranged from 1,1 cm to 2,1 cm. Moreover the sexual activity was referred as satisfactor, in absence of functional damages of the implant or endocavernous prosthetic cylinders extrusions or herniation.
CONCLUSIONS
The association of hydraulic prosthesis and veins grafts corporoplasty offers a valid solution for the corpora cavernosa enlargement, in case of related erectile dysfunction.

P017

Neovaginal reconstruction with the vulvo-perineo-glutaeal skin flap (modified O'Brien technique)

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Congenital absence of the vagina is also known as the Mayer-Rokitansky-Kuster-Hauser syndrome. Patients have a normal female karyotype, normal female phenotype and normal endocrine status. The ovaries are normal and the uterus and cervix are usually absent.
Vaginal agenesis results from failure of the sinovaginal bulbs to develop and form the vaginal plate or failure of the distal ends of the both mullerian ducts to form in the embryo. Failure of canalization of the vaginal plate results in vaginal atresia.
Vaginal agenesis is usually diagnosed after puberty with a complaint of primary amenorrhea. Estimates of the incidence vary from one in 4 000 to one in 80 000. A wide variety of operations, ranging from split thickness skin grafts to intestinal flaps, have been performed for vaginal reconstruction. However, they require utmost attention to atraumatic technique during the operation and intensive care in the postoperative period.
In our clinic, 7 vaginal agenesis were constructed with vulvo-perineo-glutaeal flap (modified O'Brien technique) between 2002 and 2005. The patients were followed between 6 months and 3 years. Postoperative mean depth of the neovagen was 7-11cm in our patients. The results of the applied precedure was noted to be sufficient in both functional and aesthetical aspects.

P018

A new technique for labia minora aesthetic reduction: The central wedge nymphectomy with a 90-degree Z-plasty

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The Labia Minora enlargement may be congenital or acquired. This uncomfortable situation can cause inflammation locally, poor hygiene, and interference with sexual intercourse.
We present a case with an enlargement of labia minora who had treated successfully with this new surgical technique.
She was a single, 24-year-old, nulliparous white woman who had complaints of rebundant labia minora. She had marked by diminished self-esteem ;her libido had decreased too. She had no history with any kind of medication(androgenic or other).
The physical exam had revealed that the labia minora were rebundant, extending over the perineum.There was no acute inflammation.
A labioplasty was performed under general anesthesia. The operative technique which has used, is a central wedge resection of the labia minora with a 90-degree Z-plasty, as described by F.Giraldo et coll.
According to this technique, two 90-degree Z-plasties are drawn, one in front of the other, on the internal and external surfaces of both labia minora. These''Zs'' converge from the free border of the central third of the labia toward a common origin at the base of each labium. Complete resection of the labial wedge located between both 90-degree Z-plasties is then undertaken.
The borders of the resection are directly approximated by single stitches.
The postoperative course was uncomplicated and the patient was exceedingly pleased with the resultant size and configuration of her labia.
One year later, the aesthetic and functional result is good.
We think that this new operative procedure is the appropriate technique for aesthetic and functional reduction of the labia minora.

P019

A comparison of parietal and iliac crest bone grafts for posttraumatic midface deformities

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*Purpose*: The aim of our study was to evaluate the results of parietal (membranosus) versus iliac crest (endochondral) bone grafts as implants to correct globe malposition on the patients with established posttraumatic zygoorbital deformities.
*Materials and methods:* During the period 1998-2003, 103 patients ranging in age from 17 to 49 were treated for posttraumatic zygonasoorbitalis and maxillary complex deformities. CT scans have greatly facilitated the assessment of displaced bones, bone defects and enabled to measure bone orbital volume. All patients had received open reduction and internal fixation through the coronal, subciliary and intraoral incisions. For correction of eno- and hypophtalmus, defects of the zygoalveolar crest and maxilla we used calvarial bone grafts, in nose reconstruction we preferred autogenous cartilages grafts. In our early cases we used to harvest iliac bone for usolate orbital fractures. 19 orbital reconstruction repaired with autogenous bone grafts (9 -with iliac crest, 10 - with calvarial bone graft) were able to be evaluated. In these cases using CT scans we performed volume measurements of different kind of transplants placed to the orbital floor 10 day and 1 year after the operation.
*Results:* This measurements show that loss of bone primary volume 1 year after the operation for iliac bone was on average 47,4% and for calvarial bone - 21,3%.
Total correction or significant improvement of the enophtalmos, zygomatic projection, shape of the nose and the occlusion were achieved in each case.
*Conclusions:* We preferred parietal bone to fill the bone defects because our experimental studies show that cranial (membranouse) bone suffers less resorption and preserve more volume in the recipient site than endochondral bone.

P020

Reconstruction of the auricle with a composite graft

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This is a story of 8 years old boy who was biten by unknown dog to his right auricle. Relatively few successful cases of reconstruction the auricle with a composite graft are reported in plastic surgery literature. Because a cartilaginous framework is difficult to reproduce we tried to reconstruct the missing part of his auricle with a composite graft. According to the literature small to moderate-sized defects may be repaired with composite graft from the unaffected ear. One can resect a wedge-shaped composite graft up to 1.5cm in width from the scapha and helix of the unaffected ear and transplant it to a defect on the contralateral ear. The boy was bitten by dog in the beginning of 2004. Nobody took care about the reconstruction. The boy came to see me in summer 2004. I found auricular defect in the middle part of his right ear. The helix, scapha and anthelix in the middle third of his right ear were completely missing. The boy was operated on in November 2004. The composite graft of skin and cartilage from the unaffected ear was taken and suture into the defect. The photographs were taken during the operation and postoperatively. The complete successful graft healing is documented. The donor site was closed primarily. The final size of unaffected ear is smaller but both ears are pretty symmetric.

P021

Treatment of recurrent dislocation of the mandible

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Dislocation of the mandible occurs when the condyle moves out of the fossa and the posterior articulating surface of the condyle advances ahead of the articular eminence. If this dislocation occurs as a chronic or recurrent condition conservative treatment is not successful in a majority of the patients, surgical treatment remains the

only option. Various surgical techniques have been used to treat recurrent dislocation of the mandible: Intra capsular injection of sclerosing solutions, lateral pterygoid myotomy, scarifying the temporalis tendon, mechanical blockage of the condylar movement by down-fracturing a part of the zygomatic arc, and create a mechanical impediment using Vitallium mesh or stainless steel pin. We have used calvarial bone grafts and miniplates with mini screws to treat 18 recurrent dislocations in 17 patients since1996.Operative technique: Under general anaesthesia a conventional preauricular incision is made. Bone graft harvested from calvarium is fixed to the zygomatic arch with miniplates and mini screws in order to augment the articular eminence. No post operative immobilization is required. The immediate and late postoperative results were successful, neither recurrence of dislocation nor significant restriction of functional jaw movement was observed which was confirmed on physical observations and the measurement of mouth opening. Radiologically, the condyles were found to be positioned in the articular fossa when the mouths were open.

P022

T-incision technique in distal hypospadias: A modification of meatal advancement and glanduloplasty

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Purpose: Hypospadias is among the commonest congenital anomalies. Distal hypospadias refers to orifice in the distal one-third of penile shaft. Correction of distal hypospadias requires different techniques depending on location of meatus. Simple advancement techniques can be used for most distal hypospadias while hypospadias with chordee requires reconstruction of urethra. The procedures meatoplasty and glanduloplasty developed by Duckett have become standard operations to correct these lesions. Complications such as meatal stenosis, meatal retraction and fish-mouth like meatus can be seen after MAGPI, though it usually yields good results. Material and Methods: In an attempt to avoid these complications, we used a modification only for hypospadias located in coronal area or its distal part. In addition to MAGPI, a transverse incision on top of the vertical incision was placed, by means of which urethra was supported by lateral flaps made of glans. Lateral glandular flaps were sutured to dorsal side of urethra advanced from previous position. Thus, stress on urethra was decreased and meatal retraction prevented. When closure was performed with T-incision, M-shaped zigzag incision line was placed instead of circular incision line.
Results: Thus, stenosis was prevented and a vertical meatus with good cosmetic appearance was obtained. 53 boys aged 4-7 years were operated and followed for 2.4 years. We obtained good functional and cosmetic results in all patients.

P023

Non-vascularized free toe phalanx transplantation in the treatment of symbrachydactyly and constriction ring syndrome

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**Introduction:**
Various surgical treatment options are available for the reconstruction of congenital short digits resulting from aphalangia.
We present our experience with the technique of non-vascularized free toe phalanx transplantation.
**Methods:**
Forty-eight patients underwent a total number of 113 free non-vascularized toe phalanx transplantations between 1975 and 2003 from the senior author and members of his staff.
Indications were several types of symbrachydactyly and constriction ring syndrome.
Age at the time of initial surgery ranged from 6 months to 21 years.
Based on age at time of initial surgery the patients were allocated in three different groups.
**Results**:
The series of 48 patients with 113 transplanted phalanges were reviewed. The duration of the follow-up ranged

from 4 months to 14 years.
Ten patients received one phalanx, 21 patients two phalanges, eight patients three phalanges, eight patients received four and in one patient there was a transplantation of five phalanges, resulting in a mean number of 2.3 transplanted phalanges per patient.
Sixty-four phalanges showed a radiographically measured growth, 22 phalanges showed signs of resorption, while 27 phalanges showed neither growth nor resorption.
In our series three patients developed donor site problems.
Digital problems were seen in 23 patients. A certain range of movement could be seen especially in the cases where the transplantation was performed on the metacarpophalangeal level.
The functional benefit but also the limitations of this surgical technique will be demonstrated in selected cases.
**Conclusions**:
Digital lengthening and bony stabilization in symbrachydactyly can be achieved with proximal toe phalanx transplantation. The optimum timing for initial surgery is as early as possible because of the safer and greater growth potential of the transplanted phalanges.
Non-vascularized free toe phalanx transplantations offer a simple and safe method of lengthening with a significant improve of hand function.

P024

Prosthetic reconstruction in congenital pectus excavatum deformity

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Introduction. Congenital deformity of the thoracic cage has a low incidence. The majority of children are essentially asymptomatic and the young adults may have same dyspnae, palpitations and precordial pain mostly during in a physical effort. The major indication for operation are cosmetic and psychological reasons rather than symptomatic. This paper present a technical solution for solving the aesthetic aspect in a such deformity. Material. The patient is a 28 yrs. young man, having a stabile pectus excavatum with a deep depression in a central and inferior part of the sternum body without any significant functional disabilities. The patient refused other surgical approaches of this malformation and asks an aesthetical correction for his thoracic cage. Method. We reconstructed the normal shape of the thoracic wall in 2 surgical steps, using first a round tissue expander of 800 cc, followed after 60 days by final silicon prosthesis. This prosthesis having 24/16cm area and the same shape like the thoracic deformity has been preparated before using a wax mould. Result. A radio-opaque thread present in to the silicon prosthesis allows observing his good integration after 2 month follow-up. Clinical aspect of the thoracic wall offers a good satisfaction to the patient. Conclusion. For many congenital deformities have to find an individual solution according with the patient's desire. The use of a prosthetic material associated with surgical technique represents a modern device in the reconstructive surgery.

P025

Therapy of haemangioma with alpha2a-interferon: Our experience and a case report

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The University Children's Hospital in Belgrade uses a protocol of oral corticosteroids administration as the first line of medical treatment in haemangioma. Unfortunately its effects after many years of clinical practice have proved to be efficient in approximately 30% cases. Accordingly, we started the use of alpha2a-inretferon as the second line of medicamentous treatment in the case of failure with the use of corticosteroids. Regarding the price of the drug and the possibility of serious side effects such as spastic diplegia this treatment is reserved only for most serious forms, which endanger the life of the patient. Until now we have applied alpha2a-interferon in four cases. In two cases we had an excellent response with complete involution of haemengioma; in one case we had a complete failure; in the fourth patient the treatment is in course.
We present the case of an enormous haemangioma of the right lower extremity complicated with the Kasbach

Merritt syndrome. Initially treatment started with corticosteroids but after it failed alpha 2a-interferone was administrated .There has been a complete remission of thrombocytopenia after a one and half month of therapeutic course and in following 10 months of continious treatment almost a complete resolution of the haemangioma took place.

P026

A case of massive keloid affecting the entire abdominal wall and an unusual increase in IGF-1 receptor and p63

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Abstract
Keloids are dermal fibrotic lesions that are a variation of the normal wound healing process. This is believed to be due to an aberration of the fine balance between tissue repair and regeneration.Most keloids tend to affect specific areas like the pre-sternal area, post-auricular region and chest.Current research reveals that there is an amplified production of Tumour Necrosis Factor (TNF) and Interleukin 6 ,among other growth factors , in immunochemistry studies on keloids.
We present an unusual case of keloid affecting the entire anterior abdominal wall from the xiphisternum right down to the perineum .The keloid also extended to the flanks laterally. The patient is a 36 year-old Indonesian male who underwent laparotomy many years ago for gastric ulcer. Subsequently, the keloid progressed rapidly enveloping the entire abdominal wall..
The patient underwent multiple excisions of his keloid in our department.Histopathology confirmed the diagnosis of keloid with no evidence of malignancy..
The paraffin sections were subsequently sent for immunohistochemistry. It is noted that there is an overexpression of IGF-1 receptor. There is also an unusual increase in p63 gene expression.
The molecular genetics of keloid formation is analysed. The recent advances in immunohistochemistry with regard to keloid formation will also be reviewed.

P027

Associated brain abnormalities in complex fronto-ethmoidal meningoencephaloceles

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Objectives:
Fronto-ethmoidal Meningoencephaloceles (FEMs) are fairly common in South-east Asia. They are generally thought to have a much better prognosis compared to the occipital variety. However, some FEMs have associated intracranial anomalies or abnormalities. The objective of this paper is to highlight the problems associated with these complex FEMs.
Method:
The case and imaging records of patients with FEMs treated in the KK Women's & Children's Hospital from 1998 to 2003 were studied and abnormalities related to the brain were identified.
Results:
Six children with complex FEMs were identified. Their ages ranged from 1 month to 8 years and the male: female ratio was 1:1. Except for the eldest patient, all underwent surgical repair done in our institution. Three of the children had hydrocephalus which required shunting. Three children had arachnoid cysts, with one child requiring a cysto-peritoneal shunt. One child had multiple cystic loculations of the brain, another had a large brain harmatoma and both developed pan-hypopituitarism. Three children developed epilepsy. Four of these six children were developmentally delayed.
Discussion:
FEMs are sometimes associated with multiple brain anomalies. Consequently children with these complex FEMs require more care, especially from the surgical perspective, than just simple closure of their encephaloceles. It is

likely that the associated brain abnormalities are responsible for the poorer outcome in this particular group of children.

P028

Interdisciplinary concept in the management of giant haemangioma with vascular anomalies of the head and neck - case report

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**Introduction**: Giant haemangioma combined with vascular anomalies on head and neck is very rare benign tumor associated with numerous complications. Exact clinical diagnostics and indications for certain treatment are of crucial importance for satisfying outcome.
**Goal:** We want to present our concept in treatment of 6 year old child, born with giant haemangioma and vascular anomalies of the lower face and neck. Also, we want to present the options for the treatment of complications.
**Material and methods:** The child has been treated in our clinic for 3 years. Previously, in more than a few occasions, tumor complications such as hemorrhage, infection and tumor necrosis on the head and neck have been treated in other institution. After complete clinical diagnostics, the therapy encompassed conservative treatment and compression by mask with duration of 1 year. After significant haemangioma regression the defect of the lower lip was reconstructed with local flaps (McGregor method). In the second act microstoma, fistula of parotid gland and skin contractures on neck were corrected. Ear reconstruction and skin contractures is scheduled for a future date.
**Discussion:** The treatment of patients with giant haemangioma combined with vascular anomalies on the head and neck and severe complications caused by tumor calls for interdisciplinary treatment plan with plastic surgeon, maxillofacial surgeon, otorhinolaryngologist and interventional radiologist involved.

P029

A simple method for umbilicoplasty

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Purpose: To introduce a simple method for umbilicoplasty, a post-operative course and post-operative care.
Material and method: The material included 4 cases that wished to receive umbilicoplasty. The cases were aged from 16 to 75 and included 1 male and 3 females. To complete the umbilicoplasty we used a single reverse U flap in the umbilical region, and made an umbilical recess by fixing the flap to the fascia. We then vertically closed a portion of the donor site in order to generate correct umbilical size, after making umbilical wrinkles the remaining flap was removed. Upon completion we applied a light tie dressing for one week. The patients self-administered a raw cotton compression for three months in order to maintain the umbilical shape.
Results: Postoperatively all cases showed a mild deficiency of blood circulation in the margin of the flap. However they were healed by conservative therapy and suture removal was possible after three weeks. All cases were satisfied with the result.
Conclusion: Vertically closing a portion of the donor site is required for adaptation of umbilical size, but wounds are not outstanding postoperatively. It is possible to make a deep recess and natural wrinkles of umbilicus by using a single reverse U flap. Blood circulation in the U flap becomes temporarily unstable, but conservative treatment is possible. Post-operative persistent compression manipulation using raw cotton enables continuation of the deep umbilical recess.

P030

Achieving good aesthetic results in the treatment of pectus excavatum in adult females

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The emphasis in the conventional method for surgical treatment of pectus excavatum was on improvement of cardiopulmonary function. Thus a large skin incision was made in the precordia region in order to achieve correction of the bony thorax. Unfortunately the subsequent scar was not aesthetically pleasing and as a result, fat transplantation and silicone implants have been used in the field of aesthetic plastic surgery to improve the outer appearance. In recent years, it has become possible to perform surgery through small incisions due to the introduction of the endoscope, and the scars resulting from the surgical correction of pectus excavatum have been minimized. Moreover the introduction of the minimally invasive Nuss procedure has resulted in a substantial reduction in surgical time and inconspicuous postoperative scars that are aesthetically acceptable while still correcting the underlying problem. However, the Nuss procedure does not employ an osteotomy and is performed almost exclusively in children because adequate improvement of the thorax structure cannot be expected in patients with asymmetrical pectus excavatum and adults because of the lack of thoracic elasticity. We have proposed a modified Nuss procedure which incorporates an osteotomy of the ribs (corticotomy) into the traditional Nuss procedure, and have surgically treated 14 adult female patients (ranging in age from 15 to 41 years of age with an average age of 26.7 years) from September 1999 to April 2002. The use of this modified Nuss procedure has made it possible to correct the thoracic abnormality with aesthetically pleasing results in adults.

P031

Neoumbilicus in abdominoplasty: Points of finesse

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Abdominoplasty is one of the commonest aesthetis plastic surgical procedures performed on the NHS. Most of the scar and resulting 'dog ears' as a result of abdominoplasty are inconspicuous and can be well hidden in the clothings. Neo umbilicus is often at display and an aesthetically pleasing umbilicus hightens the patient satisfaction from such a procedure.
The umbilicus is streched inside out with a pair of skin hooks and two concentric circular incisions are made, the umbilicus is circumscribed on its stalk with the outer incision. For further dissection the umbilicus is handled in the region between the two incisions which is excised before resiting it. This leaves a non traumatized stalk. This also helps to reduce the length of the stalk effectively while preserving the neatly excised margins. A very small vertically oriented ellipse is excised frm the neoumbilical site and a core of adipose tissue in a conical fashion is excised underneath it. The umbilicus is ancored to the rectus sheath at four points in the discribed manner to create a gentle depression all around and recreating the gently hooded appearance. the resulting umbilicus has a very small size and the scar is well hidden in the gentle depression.
The various points of finesse and the details of the senior author's technique are presented by means of illustrations and photographs. Results are also presented with favourable and unfavourable outcomes.

P032

Breast reduction, liposuction of hips, abdomen, flanks, dorsum (360º), lipoinjections of buttocks and classic abdominoplasty in one stage operation. How to make it safe

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The performing of liposuction of the entire abdomen and flanks as an adjunct to a classic abdominoplasty has long been a taboo. The belief that combining such interventions would increase the cases of necrosis, a greater accumulation of serositis, and fatal embolism(1), has for a long time proved to be an obstacle to achieving maximum results in one single operation. The pressure of the large pharmaceutical companies on medical practitioners to use anticoagulants drugs whenever possible, has virtually brought about a situation where their

indiscriminate use in plastic surgery is regarded as obligatory, thus significantly limiting the opportunity for such interventions. Some surgeons are using the anticoagulants as an excuse to forget other more important prophylactic measures, based in a false security of anticoagulants administration. They also manipulate tissues without care, exaggerating the amount of fat taken from liposuction procedures. It seems that the use of anticoagulants in isolation, do not avoid their cases of deep vein thrombosis and fatal lung embolism.
Since January of 1998 to December of 2004 the first-named author performed 415 operations, combining liposuction of hips, abdomen, flanks, dorsum (360$^{o}$) with classic abdominoplasty plus breast reduction or mastopexy, in a single operation.
The main objective of this paper is to show in detail our surgical procedure, where effective integration with the anesthetist is of a paramount importance.
The good postoperative results with very low complications rates, with no blood transfusion, abdominal skin necrosis or lung embolism, persuaded us to adopt this combination of procedures routinely as a single operation in our clinic.
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P033

Surgical treatment of submucosal palatal clefts - our experience

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Incomplete migration of mesoderm in palatal shelves during embryogenesis results in minimal clefts, not-easily clinically evident. Anatomically, palatal and nasal layers are in direct contact without intervening muscle and bone. Clinically, this anomaly is rarely detected if nasal speech and bifid uvula are not present. Diagnosis is confirmed by illumination test, palpation of oral palate, and with phonetic examination. Palatal bone cleft is diagnosed with x rays examination with resulting notch on spina nasalis posterior can be present but also whole-length cleft of secondary palate can be present.
In our clinic 1287 patients in 35 year period were treated with secondary palate cleft. 54 patients were diagnosed with submucosal palatal cleft. In 55.7% of patients nasal speech was detected. Patients age varied from 1 to 20 years, average 3.6 years and male sex dominated with 59.2% of cases. Isolated submucosal cleft was present in 8 cases and associated with subtotal secondary cleft palate in 42 patients and with primary palate cleft in 4 patients.
Patients were surgically treated by means of palatoplasty, pharyngoplasty and palatopharyngoplasty. After surgery intensive phonetic rehabilitation was done with involvement of speech therapist.
Nasal speech with bifid uvula can be the only clinical signs of submucosal palatal cleft. If untreated, psychological consequences and speech malformation in will develop in children with this anomaly.
Early diagnosis and surgical treatment during 2 first years of age, with intensive postoperative speech therapy are optimal in treatment of submucosal palatal cleft and speech rehabilitation.

P034

Conservative management of Cystic Hygromas: 33 year experience

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**Purpose:** Lymphatic malformations can be classified into three main categories; Macrocystic (or Cystic Hygroma), Microcystic and Mixed type. Cystic Hygroma is a rare congenital malformation represent an error in communication between the large draining lymphatic channels and the venous system. In many centers, surgical excision is considered to be the optimal mode of treatment. Spontaneous resolution of Cystic Hygroma was briefly described in the literature with unsatisfactory results in most cases.
**Material and Method:** Between 1970 and 2003, fourteen patients were diagnosed to have true macrocystic malformations in Montreal Children Hospital; thirteen cervical and one axillary. All patients were treated conservatively with aspiration with a mean follow-up time of 5.75 years. A retrospective review was performed to

evaluate this treatment modality.
**Results:** All patients were successfully treated with aspiration. 3 patients needed more than one session of aspirations (average 1.66) with complete resolution. Complications were limited to one case of infection treated with antibiotics with no residual problems.
**Conclusion:** Conservative management of purely macrocystic lymphatic malformation (Cystic hygroma) is a reliable mode of treatment with a low complication rate. Intralesional sclerosant injection and surgical excision should be reserved for other forms of lymphatic malformations (microcystic and mixed type).
**Keywords:** Cystic hygroma- lymphangioma- conservative- management

P035

Prophylaxy and treatment of complications in abdominoplasty combined with other surgical procedures

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The purpose of our study is to optimize the results in abdominoplasty combined with other surgical procedures. We performed 368 operations from 1997 until 2004, concerning various deformation of the forward abdominal wall. Abdominoplasty was made to 176 (47,83%) patients. This operation was combined with other surgical procedures in 167 (94,89%) cases: with hernioplasty (29), cholecystectomy (3), femoral lifting (1), mammaplasty (3) and liposuction -131 (74,4%).
Local postoperative complications have arisen at 51 (30,54%) patients: suppuration of a wound - 4 cases, lymphorrhea - 36 (21,56%), lymphoma -2, regional wounds necrosis - 7, a hematoma - 2.
In 19 cases, lymphorrhea has continued more than 2 weeks. In cases where lymphoma was formed, it lasted 2.5 and 4 months.
In order to decrease the risk of early postoperative complications, we respected the following principles: 1) thorough investigation of patients before the operation; 2) prophylactic antibacterial therapy (cephazolini); 3) prophylaxy of thrombembolic complications (fragmini); 4) we don't perform combined operations to the patients with BMI over 35 kg/$m^2$; 5) prophylaxis of lymphorrhea by limiting the skin flap undermine; performing of liposuction by cannulas of lower diameter; sufficient postoperative immobilizing of abdominal wall tissues.
We give a special attention to the consecution of techniques in combined operation. We used a low incision Pitaguy or Regnault, even at supraumbilical hernias of a white line, to avoid a vertical scar.During the development of lymphorrhea we used Kenalog (triamcinoloni acetonidum) by our proper method which contributed to stopping the lymphorrhea in 3-5 days. The present method permits to reduce the number of doctor visits in the postoperative period and to improve the results.

P036

Abdominoplasty complications: comprehensive approach for the treatment of chronic seroma with pseudobursa

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**Purpose:** Abdominoplasty is a large surgical operation, often followed by a great number of local and general complications. Some studies indicate that the risk of severe complications, including mortality, ranges from 1 in 617 to 1 in 2320 cases. A seroma is very serious consequence that follows each type of abdominoplastiy contour surgery, from suction-assisted lipoplasty alone, to standard and limited abdominoplasty.
**Material and methods:** A case of 48 years old women is presented. She was subject to the standard abdominoplasty with liposuction in same acts In the course of the postoperative follow up examination the forming of seroma and pseudobursa was revealed.
**Results:** The pseudobursa was evacuated multiple times under the ultrasound control. During one act of seroma evacuation, even 2010 ml of seroma were evacuated. Because of the prolonged forming of seroma, the pseudobursa was growing, what created the effect of the tumour in the front abdominal wall. In the course of the second operation, mini-abdominoplasty with neo umbilicoplasty, the pseudobursa was completely excided and the material was sent to the PH analysis. The space obliterating sutures were set up in more lines to decrease

the dead space and to withhold the movement between the abdominal flap and the musculo-aponeurotic layer, what is suggested by Saltz and Mataraso. The suction drainage lasted for 2 weeks after the second operation with a compressive girdle that was released periodically during the day. The follow up was done 3 months after the second operation without forming infection, hernia, skin necrosis or any new chronic seroma with neo pseudobursa.
**Conclusion:** Abdominoplastyy surgery is generally high satisfactory operation witch achieve sufficient improvement of the body contouring. Reducing risk factors with good and logical operation plan can to improve functional and aesthetic outcome in the standard abdominoplasty with concomitant liposuction.

P037

Classification for indications of lipoabdominoplasty and its variations

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Purpose
This paper proposes a new clinical - therapeutic abdomen classification, to indicate the best technique (lipoabdominoplasty) for each case Since 2000 we have been using this technique to treat the abdominal region. The lipoabdominoplasty standardized and systemized the association of the Liposuction with the classic abdominoplasty.
Methods
Two hundred eleven patients were submitted to lipoabdominoplasty, lipomini-abdominoplasty and classical abdominoplasty, from January of 2000 to january of 2005, aged between 28 and 69 years old, Most of them were female, and just one was male. It is based on five surgical phases: 1.- Dissection and sculpturing of the subcutaneous deep layer and superficial layer through the liposuction 2.- Selective undermining and plication of the anterior recti sheath 3.- Preservation of the perforator vessels 4.- Preservation of the Scarpa facia and deep fat 5.- Resection of skin and umbilical transposition.
**Results/Complications**
The advantages of the lipoabdominoplasty and its variations are: low rate of complications, such as epitheliolysis (1,5%), seroma (1%), haematoma (0,1%), necrosis (0,1%); smaller scars, preserved sensibility at the suprapubic region, better abdominal contouring and decreased abdominal circumference due to liposuction.
The selective undermining and flap liposuction reduce the surgical trauma, preserve the perforating arteries and decrease the useless areas, replacing the great dissection of traditional abdominoplasty and lipectomies, reducing the complications. The preservation of the Scarpa fascia is important for the flap lodging in the lower abdomen avoiding loss of suprapubic sensibility and seroma, once the lymphatic system and veins are preserved.
**Conclusion**
The lipoabdominoplasty is a conservative technique that dissects the abdomen anatomically and shapes it with fewer traumas, repositioning and correcting all abdominal wall layers. Faster and less painful post-operative period; The basis of the technique are the five fundamental steps of lipoabdominoplasty, that are utilized in all classification groups.

P038

Triple Z flaps for reconstruction of triangular defects in difficult areas

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Repair of defects for which standard flaps cannot be planned or when alternatives of reconstruction methods are limited because of localisation close to important structures, presents a challange for plastic surgeons. A good functional and aesthetic result is hard to achieve using a single large flap for reconstruction of defects with critical localisation .
For triangular defects where reconstruction is difficult, we designed a “triple Z flap” technique where 3 standard Z

plasties are designed on each side of the defect. The flaps designed are on each corner of the defect. The base of the triangular flaps are half as long as the sides of the triangular defect. The defect is reconstructed with these three Z flaps which were elevated and transposed to the defect.
Eighteen patients were operated with the triple z flap technique between june 2002-December 2004. No complications were seen after the operations.
The most important adavantage of this technique is that three small Z flaps can be elevated from adjacent tissue of the defect instead of a single big flap which may cause a donor site morbidity. We believe that triangular Z flap technique can be used in selected cases where local flap choices are scarse and it is hard to achieve good anatomical and aesthetic results.

P039

Surgical treatment of hand haemagioma - case report

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Large, ulcerated, multifocal, or located in an anatomically critical area haemangiomas present great therapeutical problem.
We report the case of 36 year old male, former professional handball player, who was treated in our clinic due to an acute increase of the developed haemangioma in the midpalmar region and the region of the proximal phalanges the third and the fourth finger of the right hand.
He noticed protuberance located on the palmar region of the right hand six months before he was accepted at the our clinic. A protuberance grew slowly in the beginning, but two weeks before hospitalization grew became intensive and symptoms of neurovascular compression appeared. At the day of hospitalisation there was a protuberance on the palmar region of the right hand 6 x 8 cm size, above 1,5 cm of the level of nonafflicted skin, irregular surface, dark-blue colour, with no pulsations.
Skin above protuberance was tight, partly thinner and warm. Right hand was painful with very limited flexion and extension of the fingers, while abduction and adduction motions of the fingers were impossible. Ultrasound examination, magnetic resonance imaging and transcutaneous angiography were performed.Surgical extirpation of haemangioma was performed. On pathohistological examination diagnosis of haemagioma cavernosum was confirmed.
Function of the intrinsic muscles of the right hand was recovered and sensibilation of the all fingers was restored completely immediately after treatmant. The controlled active motion program was advised to the patient.
Acute increase of hemangioma of the midpalmar region produces compression of the neurovascular bundle and intrinsic muscles with painful hand and serious disorder of the hand function. Immidiate surgery is the treatment of choice for acute increasing cavernous hemangiomas, located into the midpalmar region of the hand, if symptoms justify it.

P040

An external oblique (including zone4) and rectus abdominus (without zone 4) musculocutaneous flap for reconstruction of infraclabicular large round chest wall defect

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purpose
Chest wall defects result mainly from extripation of primary or metastatic breast tumors or from severe radionecrosis following cancer treatment. Reconstruction of these defects has to be properly performed to restore adequate coverage and protection intrathoracic strucures without impariring the respiratory function and to obtain a morphologically acceptable outcome.
Today, most popular techniques for closure of large chest wall defects mainly use lattissimus dorsi musculocutaneous, rectus abdominus musculocutaneous and external oblique musculocutaneous flap.
But large infraclavicularand lateral defects represent a problematic area. We performed an external oblique

(including zone 4) and transverse rectus abdominus musculocutaneous flap (without zone 4) to cover these defects.
materaial and metods
Two cases of reconstruction using an external oblique musculocutaneous(including zone 4) and transverse rectus abdominus musculocutaneous flap (without zone 4) were performed to cover a larege infraclabicular round chest wall defect.
result
In 2 patients described here, resection of the tumor and reconstruction of thorax were carried out in a single operation. Later surgery was not needed. None of the patients complained of brearhing difficulties, pain or instability.
conclusion
Flap selection include an external oblique musculocutaneous (including zone 4) for lateral area of large round defect and transverse rectus abdominus musculocutaneous flap (without zone 4) for infraclavicular area of large round defect. This tecnique makes it possible to achieve excellent results in terms of both function and aestethics.

P041

A new technique for closure of the circular skin defects: The reading man procedure

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*Purpose:*. Here, a new surgical procedure for closure of the circular skin defects is presented.
*Material & Method:* In this technique, a transposition flap elevated from the infero - oblique neighbouring area was used for defect closure while a secondary triangular flap designed beside the first flap according to z- plasty concept was used for closure of the first flap's donor site. This technique basically uses the skin relexation gained with a z-plasty maneuver in favour of the defect closure. The technique was named as "The Reading Man Procedure" since its design resembles the silhouette of a man who is reading a book held in his hand. In last year, this technique was used in 19 cases aged 12-68 years.This technique was used for facial defects in 7 patients,fingertip defects in 3 patients,trunk defects in 4 patients and for the closure of the flap donor site defects on the upper and lower extremities in 5 patients.
*Results:* A succesful tension free defect closure was obtained in all patients .Since the defects were closed with the neighbouring skin,an excellent color match was obtained. The scar formation was acceptable since the surgical plan was made in consideration with the skin tension lines. This technique was found to be useful for closure of the skin defects up to 14 cm in diameter in this clinical series.
*Conclusion:* The reading man procedure is a new and a simple surgical technique provides tension free closure of the difficult circular skin defects with an excellent tissue match and minimal scar formation.

P042

Sternal wound: reconstruction with e-PTFE and pectoralis major advancement flaps

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Purpose: Sternal metastasis are rare and their surgical treatment are justified only in presence of a unique metastasis and good general condition of the patient. Total chest wall reconstruction is mandatory if the defect involves more than 3 ribs to avoid respiratory functional problems.
Material and methods: The Authors present a case of a large solitary sternal metastasis from duttal breast cancer treated with en-bloc resection followed by bone reconstruction using Goretex Double Mesh® (polytetrafluoroethylene) and soft tissues coverage by bilateral pectoralis major muscolar flap.
This patient has been operated for breast cancer 7 years before, followed by radiotherapy and polichemiotherapy. En bloc excision of the tumor with small area of cutis and partial sternectomy was performed. The chest wall

defect was reconstructed with Goretex Double Mesh® (polytetrafluoroethylene) covered by bilateral pedicled pectoralis major muscle flap harvested by the skin resection excision.
Result: Tree years later a CT scan show no evidence of a systemic spread or local recurrence.
Conclusion: The reconstruction with Goretex Double Mesh® (polytetrafluoroethylene) is a suitable surgical method in sternal reconstruction when the defect involves more than 3 ribs. It prevents paradoxical movement of the thorax, restoring an efficient bellows action to the chest cage and protect the intrathoracic organs in a cosmetically acceptable way.

P043

Factors associated with postoperative complications in microvascular reconstruction of extensive oncological defects

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**Purpose:** The retrospective analysis of factors associated with postoperative complications in 70 patients with head and neck, limp and breast cancer or facial nerve paralysis, who underwent free tissue transfer reconstruction.
**Material and methods:** During the period between June 1999 to December 2004, 71 free tissue transfers were performed in our department on 70 patients (51 males and 19 females) with range of age 20- 87 years **.** 65 flaps were used for reconstruction after ongological craniofacial resections, 4 flaps for the salvage of the lower limb after sarcomas recection, 1 flap for breast reconstruction and 1 flap for facial reanimation. Of the flaps used 53 were forearm , 10 muscle or myocutaneous rectus abdominis flaps, 5 osseocutaneous fibula flaps, 2 latisimus dorsi muscle flaps and 1 grasilis flap. Reconstruction was successful in 94,3% of the cases. After a mean follow up period of 27,6 months, 49 patients are alive and free of disease.
**Results:** Complications developed in 38 cases. Systemic complications occurred in 7 patients (10%) such as cerebrovascular accident (1), pneumonia (2), pulmonary embolism (1), disphagia (1), deaths (2). Twenty-nine (40,8%) patients developed complications from donor and recipient side such as wound dehiscence (8) bone fracture (2), mobility and sensitivity deficit (3), total flap loss (4), fistula formation (1), seroma (2), delayed wound healing (4). In 5 cases re-exploration of the anastomoses was mandatory.
**Conclusions:** Despite the extent of the operations, the incidence of systemic complications was comparatively low and in agreement with the relevant literature. It was depended on specific factors such as the age, preoperative radiation, Charlson's comorbidity index, anatomical side of malignancy e.t.c. Microvascular free tissue transfer for reconstruction of extensive ongological defects is a save and reliable method for complex one stage reconstruction, provided, it is performed in organized centers by experienced microsurgical team.

P044

The SOS procedure : A new closure technique for circular skin defects

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*Purpose:*Since most of the excisional lesions are circular, closure techniques for circular skin defects have a special importance in reconstructive surgery armamentorium. Here we present a new technique namely the S.O.S procedure for closure of the circular skin defects.
*Material and Methods:* In this technique two z-plasties with the central limbs parallely placed on two imaginary lines passing through the upper and lower poles of the circular defect are planned. The length of each limb of the z-plasties is designed to be equal with the diameter of the circular defect. With this pattern we have 2 triangular flaps on each side of defect. After flap elevation, the upper flap of the right side and the lower flap on the left side are transposed to the defect area while the remaining two flaps transposed the donor sites of the flaps which are used for defect closure. Since the surgical design resembles SOS, this technique was named "the S.O.S

procedure". This procedure was used in 15 patients aged 5-72 years old with various circular skin defects on different regions of the body as 6 on the trunk, 4 on the face, 3 on the upper and 2 on the lower extremities.
*Results:* In all patients a tension free closure was obtained. There has been no flap necrosis. Since we planned z-plasties by taking the skin tension lines in consideration, the resultant scars were aesthetically acceptable in most of our patients.
*Conclusions:* The S.O.S procedure was found to be a useful technique for closure of the circular skin defects with different sizes in various regions of the body. It is an easy going technique which enables the surgeon to close unusually large skin defects with transposing the alike neigbouring skin by the help of skin relaxation gained from double z-plasties.

P045

Clinical study of influence of biopsy in local anesthesia on course of the disease in patients with skin melanoma

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INTRODUCTION: Due to long term exsisting technical problems in our circumstances concerning “biopsio ex tempore” we were forced to do biopsy of pigmented skin lesions in local anesthesia and receive the p[[Unsupported Character - а]]thohistological results in 48 hours what is quite opposite to the contemporary doctrine. After ten years clinical data were analysed and compared with corresponding data gained from patinets operated in general anesthesia. The aim was to reveal whether the infiltration of local anesthetic and delayed wide surgical excision has any influence on the course of disease.
MATERIAL AND METHODS: Clinical material (medical documentation) of 106 patients treated of skin melanoma is statistically analysed. Retrospective method of investigation was used in collecting data from the patients operated of skin melanoma who were diagnosed with so-called “accelerated biopsy” in local anesthesia. Those data were compared with data from patients in the same stage of the disease who were immediately operated in general anesthesia. Patients follow-up lasted from 5 to 10 years.
RESULTS: Data of this clinical study collected after biopsy in local anesthesia show that out of suspicious pigmented skin lesions in 1324 patients skin melanoma was proved in 106 (8,00%). The data obtained from the same number of patients in similar stages of the disease operated in general anesthesia gave similar results considering the prognostic factors (locoregional recurrence, disseminated disease and follow-up).
CONCLUSION: this clinical study shows that taking material for patohistological analysis in local anesthesia doesnot influence the course and prognosis of skin melanoma

P047

Malignant melanoma of soft parts: a « non plastic surgeon’s land » ?

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**Purpose:** Malignant melanoma of Soft parts (MMSP) (also known as clear cell sarcoma) is a very rare tumour that shows up without primitive skin involvement (except in sub-cutaneous prolongations of deep tumours), mostly predominant in the extremities of young adults. The importance of radical surgery in these cases has been extensively established. Confronted with these cases, the plastic surgeon must be aware of the specifics of this rare entity to ensure its proper inclusion in his clinical suspicion.
**Material and methods**: a total of eight cases of MMSP, that consulted the Comprehensive Cancer Centre "Eugene Marquis" of the University of Rennes Hospital (out of a total of 35,644 malignant tumours cases presented between 1984 and 2005), were studied retrospectively. A complete data report was obtained from those: age, sex, localization, delay between first symptoms and diagnosis, surgery, adjuvant treatment or not (radiotherapy, interferon-alpha), disease-free survival and overall survival.
**Results :** (in progress)
**Conclusion :** An early diagnosis and consequent initial radical surgery are essential for a favourable outcome.

The Plastic surgeon needs to be fully aware of the implications associated with the MMSR so he can promptly take the appropriate measures in the event he's confronted with such unusual tumour in its current practice.

P048

Fibrolipoma nasal: an unusual tumour

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INTRODUCTION
The fibrolipoma is a benign tumor variant of the lipoma and characterized by the presence of adipose and fibrous tissues.
We have not found any report in the literature related to a fibrolipoma located on the nose.
MATERIAL AND METHODS
We describe two patients treated in our department during 2003 and 2004 , both of wich presented great nasal tumour, with important aesthetic deformities and psychological consequences, of difficult clinical diagnosis.
CASE 1: Female,40 years of age that consults due a tumour in nasal tip , of 2,5 cm in diameter, soft, depressible and of a very slow growth.. Tumorization showed first signs in her adolescent years. FIGURES 1 , 2 .
CASE 2: Female,62 years of age, with a tumour in her entire nasal dorsum, very soft and of very slow growth, which produces an aesthetic deformity similar to rinofima.Tumorization showed first signs a couples of years ago. FIGURES 3 ,4.
RESULTS
Due to the important aesthetic deformity of the tumours, the two patients underwent surgery under general anaesthesia and received complete surgical excision of tumor and redundant skin. FIGURES 4, 5 .
The histological study revealed the diagnosis of fibrolipoma.
CONCLUSIONS
Given the nature of a nasal tumour of slow growth, soft consistency and it´s deforming aesthetic effect on the redundant skin, we should consider de diagnosis of fibrolipoma when discussing the treatment.
We will have to give a differential diagnosis with: linfangiomas, dermatofibrosarcoma and other types of lipoma.

P049

Basocellular carcinoma of face

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Basocellular carcinoma is among most frequent and less malignant tumor from the point of view of lymphatic and haematogenous metastasis. Despite of this principle it can be of great malignancy on the face and scalp.
A group of 97 patients hospitalized in MMA - Belgrade was observed during 3 years period. Patients are ranged from 18-72 years, with average of 54 years, with gender structure 65% male comparing 35% female, and average disease evolution of 18 months.
Tumor was localized in 40 patients on the face and in 57 cases in nose region: basal complex 20 patients; dorsal part 16 patients and radix 21 patients
Surgical treatment includes correct (radical) tumor excision, reconstruction of post resection defect executed through selected surgical technique and HP verification.
The following surgical methods were applied: direct closure (14 patients), AT cutis (4 patients), combined graft (3 patients), various flaps (60 patients with local, 8 with regional).
After tumor excision in the nose region we performed epithesis in 3 cases.
During observation period 9 cases of tumor residues and 12 cases of tumor recidivus occurred.
Timely diagnose, radical surgical excision, and regular post surgical controle, are preconditions for successful treatment of basocellular carcinoma of face.

P050

Mature teratom of the scalp in a newborn

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Introduction: Extragonadal germ cell tumors of the neonatal period such as the mature teratomas rarely located at the occipital region. We present a case that suffered teratoma on the occipital region.
Materials and methods: A10 day-old female baby was submitted to our clinic with a 5x4.5x3.5 cm occipital mass. Tomografic screening revealed a midline occipital mass, which caused outer cortex erosion on the central part of the occipital bone. Additionally, a solid lipomatous mass with dimensions of 1x1.5cm, was detected accidentally in the right pontocerebellar cysterna. There was no neurologic deficit on physical examination. There is no lab abnormality except for a high α-FP level (860.11 ng/ml). The mass was dissected off the occipital bone. There was no bone defect; however, rich vascular connections between the tumor and the occipital bone were observed. The defect that was created after the excision was reconstructed with local scalp rotation flaps.
Results: On pathologic examination, mature tissues (lung, bronchus, chondroid, osteoid, over, peripheral nerve, bone narrow, salivary gland, lymphoid and fat) derived from all three germ layers were determined. Postoperative period was uneventful. Blood level of α-FP was within normal ranges after three months (14 ng/ml).
Conclusion: Extragonadal germ cell tumors should be considered in differential diagnosis in pediatric patients presented with a scalp mass. Detailed examination is mandatory to detect a possible intracranial communication.

P051

The local recurrence and metastasis in head and neck fibrosarcomas

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ABSTRACT
**Background:** Purpose of this study was to determine the value of recurrence and metastasis of haed and neck fibrosarcomaas, as the prognostic factors in according to adequate or unplanned excision.
**Material and methods:** We reviewed the cases of fifty-three patients who had a haed and neck fibrosarcomas, treated between 1993 and 2003. There were 34 male patients (64,15%) and 19 female patients (35,84%). The average age was 51 years (range from 19 to 81 years). All patients were treateded operatively, but some of them (11 patients - 20,75%) had an operation (with inadequate surgical margins) at elsewhere before being sent to us. The demographic date (size, depth and localisation of tumor, sex and age of patients) had been recorded retrospectively. The oncoligal status, including local recurrence and metastasis had been determined at the follow-up evaluation.
**Results:** All of 11 patients treated with inadequate excision had palpabile or histologicaly determinet local recurrence. The most common histological diagnosis of local recurrence was dermatofibroma protuberans (7 patients - 63,63%). In other patients who were treated with planned and adequate excision there were 4 (9,52%) recurrences. There were 5 patients (45.45%) with metastases in group of unplanned and only one patients (1,88%) in group of adequate surgical margins.
**Conclusions:** The present study demonstrated that excellent rates of survival and low rates of local recurrence and distant metastasis of head and neck fibrosarcomas can be obtained with use of carefully planned wide or radical (adequate) resection. The quality of operation is the most important factor.
**Key words:** Fibrosarcoma, Recurrence, Metastasis, Surgical treatment.

P052

Combined surgery and topical retinoic acid treatment for facial steatocystoma multiplex

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**Purpose:** Steatocystoma multiplex (SM) is an inherited cutaneous disorder, which is mostly seen in the trunk, neck, arms, axilla, inguinal region. Limited number of cases with SM confined only to the face was reported before as a papular variant. Various treatment alternatives were suggested including isolated or combined surgical and medical approaches. Here, a case of SM located only in the face which was successfully treated with combined surgical excision and topical retinoic acid treatment is described
**Material and Methods:** A 70-year old male patient presented with the complaints of painless nodules on the face. Physical examination revealed multiple soft, round to oval shaped cystic lesions with varying diameters in the upper face. The patient underwent surgical excision of the most prominent lesions with small skin incisions and around 40 cysts were excised in two sessions. Diagnosis of stetatocystoma multiplex was made histologically. Topical retinoic acid 0.1% treatment was started 1 month after surgery. Daily application of the cream was continued for 12 months.
**Results:** The incisions healed with very fine scars. The regression of the remaining cysts was obvious in the follow-up period. The result after 12 months was satisfactory.
**Conclusion:** The best treatment alternative for SM is the excision of the lesions, however, it is time consuming to excise all the lesions and the remaining scars may not be acceptable. There may also be recurrences due to the remaining small cysts which were not clinically detectable. In the present case, following removal of some prominent lesions, the use of retinoids, which have anti-proliferative and anti-differentiative effects for the sebaceous structures in the skin via specific retinoid acid receptor activation, probably helped regression of the remaining lesions after excision of the bigger and visible cysts that resulted in satisfactory outcome.

P053

Microcystic Adnexal Carcinoma: a Case report and review of the literature

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**Abstract**
Microcystic adnexal carcinoma (MAC) is an uncommon skin appendage tumour. It is characterised by its slow but aggressive local growth extending beyond clinical margins. There is also a characteristic propensity for perineural invasion. It is important to identify this tumour as it is easily confused with benign adnexal neoplasms such as desmoplastic trichoepithelioma, syringoma and trichoadenoma.
Clinically, it often presents as an indurated plaque, and is sometimes associated with pain and paresthesia. Histologically, it is characterised by a dual pilar and ductal differentiation within a desmoplastic stroma. Perineural invasion is often seen.
The mainstay of treatment remains surgery, with Mohs Micrographic Surgery (MMS) and local wide excision being commonly used. The recurrence rates for both are thought to be the same provided that the lateral margins are at least 4 mm in local excision.
In spite of this, the recurrence rate in MAC is high with a 10 year recurrence rate of up to 18%, necessitating long term follow-up.
We present a case of MAC. This is a middle aged gentleman with Microcystic Adnexal Carcinoma of the right upper lip. Its clinical presentation, histological features and surgical management are discussed. The options for reconstruction of the resulting lip defect are also reviewed.

P054

Giant von Recklinghausen tumor (68 kg) removal - case report

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The aim of this paper is to present the very complex medical management of a 47 years old women with a giant von Recklinghausen tumor (68 kg after surgical excision) that severe alterated the general biologic status: severe secondary anemia, class II-III NYHA cardiac insufficiency, severe malnutrition and hipoanabolic syndrome, primitive pulmonary hypertension, functional tricuspidian insufficiency, ascetic syndrome, lithiasic cholecystitis, hydrostatic leg vein varicosities class 4, lumbar discopathy. The patient was complete investigate from biologic and imagistic point of view. The global management of this case was very complex because of the unique ratio between tumor and total body weight (almost 2/3), and because of secondary multiple system insufficiencies. An excellent collaboration between two international surgical and anesthesiological teams was the success key of the entire procedure of giant tumor excision. The procedure had a very high anesthetic risk because of the possibility of bleeding or multiorgan failure on this poor general condition patient, but the anesthesiological management permit a normal 8 hours surgical procedure.The 20% of body surface defect remained after surgical removal of the tumor was covered progressively in 3 stages. The functional and esthetical local results after one year postoperatively are very good and the general biologic status recovered progressively to a normal level during the first 6 mounts.

P055

Porocarcinoma of the left axilla - Case report

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Eccrine porocarcinoma is a rare, locally aggressive tumor with tissue destruction and metastasis potential. Primary eccrine carcinomas are exceedingly rare, accounting for less than 0.01% of all skin cancers.Only several handred cases have been reported in the literature worldwide. No specific data are availabel regarding incidence of eccrine porocarcinoma in our country.
A case of a 73-year old man with porocarcinoma of left axilla is presented with its clinical and pathological features. Patient presented with a single, asymptomatic cutaneus lesion with undistinct borders.Data obtained from history showed that lesion grew slowly over years to reach a current size of 10x8cm. At first,diagnostic biopsy was done. Pathohistological diagnosis was confirmed and was characterized by solitary and nested anaplastic cells floating in pools of mucin within the dermis (mucinous porocarcinoma). Definitive surgical treatment obtained with radical surgical excision with cutaneous margins of 3cm and elective lymph nodes disection in axilla. After tumor removal, primary reconstruction was performed with local transpositional fasciocutaneus flap proximally based on upper arm. The wound healed uneventfull. On follow up for one year period no local recurrence of disease was noted and clinical and laboratory investigations showed no further spreading of disease.
This method of treatment and reconstruction showed good aesthetic and functional outcome.

P056

Soft tissue sarcomas treated in a plastic surgery clinic

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Purpose: Soft tissue sarcomas are rare tumors and challenging for the surgical oncologist. Their anatomic location and histologic subtypes vary greatly making them quite unique. Our purpose was to study the soft tissue sarcomas treated in our clinic and compare our findings to the ones reported in medical literature.
Material and method: The medical files of patients with soft tissue sarcomas who were treated in the plastic surgery department of the 6$^{th}$ IKA oncology hospital during the years 1991-2004 were reviewed.
Results: Fifty four cases of soft tissue sarcomas were studied. Thirty seven of them were men. The mean age of the patients was 66,5 years (range 30-90). Half of the cases consisted of Kaposi sarcoma and dermatofibrosarcoma protuberans (DFP). Surgery with wide margins was the treatment of choice. Adjuvant chemotherapy and radiotherapy was given in all cases except for the cases of DFP. Surgical reconstruction was

effected with skin myocutaneous flaps.
Conclusion: Soft tissue sarcoma encompasses a wide variety of histological types making its study difficult. Specific guidelines are hard to issue. Although liposarcoma is the most commonly reported, in our series Kaposi sarcoma was by far the most common. Multidisciplinary approach is essential. Aggressive surgical excision should almost always be followed by reconstruction, chemo- and/or radiotherapy.

P057

Dermatofibrosarcoma protuberans: Provoking fibrohistiocytic tumour of intermediate malignancy

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Dermatofibrosarcoma protuberans (DFSP), first described in 1924 by Darier and Ferrand, is relatively rare, slow-growing nodular cutaneous tumour of intermediate malignancy, characterized by a significant risk of local recurrence but little or no risk of distant metastasis, making it appropriate to separate it from both benign and conventional (high-grade) malignant fibrous histiocytoma. DFSP has a high rate of recurrence, presumably as a consequence of persistent residual tumour. This is probably the main reason why repeated surgical treatment is frequently required. We want to present our experience of surgical treatment of such malignancy on the neck and shoulder in the elder 71-year-old male after twelve years follow-up period. The case is interesting because we started with aggressive treatment relatively late in the unfavourable, fully-developed stage of the disease, with multiple satellite nodules spreading and signs of partial myxoid degeneration of the largest tumour mass itself. Despite initial wide triangular excision “en block” (10X20 cm) and skin grafting, five local recurrences were observed during the first eight years, presumably as a consequence of preoperative tumour spreading underestimation. The recurrences appeared mostly in the region of greatest tumour degeneration and infiltration and where the excision margins were less than 2 cm apart from the visible tumour mass. They were treated by consecutive wider excisions and skin grafting or by simple excisions and direct suturing. The rest follow-up period was fortunately free of recurrences or distant metastases. A sufficiently wide excision, long-term follow-up and good co-operation between surgeon and experienced pathologist are crucial for the strategy of treatment and the prognosis of this unusual and rare malignancy.

P058

Endosocpic excision of benign tumors in head and neck

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Purpose
The recent advent of endoscopic procedures have reconsidered the conventional methods by which the excision of benign tumors in head and neck is classically achieved. An endoscopic approach for excision of benign tumors is described.
Material and Method
Both specific instruments and endoscopes of 0 and 30 grade are necessary. This technique was used in 58 patients were operated with this technique and Thirty-five of them presented congenital cervical branchiogenic cysts (60 % ); 8 cervicofacial lipomas ( 13%); 3 congenital epidermoid nasal cysts(5 %), 4 submandibular gland resections ( 7%), 4 parotid cysts ( 7%) and 3 frontal osteomas ( 5%) .
In the epidermoid nasal congenital cysts the approach was made through a classical rhinoplasty.
In submandibulectomies a gingivo-lingual incision was performed and careful dissection was made avoiding the injury of lingual nerve and facial vessels.
Results
All operated patients were very pleased with postoperative comfort and aesthetic results; insconspicuous scars and no complications were registered.
The esential surgical steps were as follow: 1. Minimal incision; 2. Peritumoral dissection; 3. Identification and protection of the muscles and nerves; 4 Careful dissection of the external surface of tumor avoiding injury on the principal vessels and other anatomical elements.
Conclusions

This procedure is anatomically safe and can be made with minimal morbidity through skin small incisions and by nasal or oral approach. Solid anatomic knowledge are neccesary to perform both safe and efficient endoscopic excision.
The endoscopic surgery can be method of choice in the excision of many head and neck tumors and other pathologies.

P059

Island flap for reconstruction of nasal floor. A case report

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We make a presentation of an male patient 52 years old with the lump in left nasal floor that was spreeding to the nasal septum.
The operation was done under general anesthesia. After exscision of the lump in the nasal floor and septum we have rise of distal based island flap from the same side of the nasolabial fold. The dimension of the flap where 3.5 x 2.0cm, and it was supplyed with a.facialis.
After rising then flap, we turned them of, maked a tunnel trougt skin to the defect, and covered the same. The donor site is sutured direct without tension.
Conclusion - Island flap based on a. facialis is a good decision to covering defects in the nasal floor. Donor scar is in nasolabial fold and little visible.

P060

Giant pyogenic granuloma of the upper eyelid

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**PURPOSES:** Pyogenic granuloma (PG) is a benign acquired vascular lesion of the skin and mucous membranes. Diagnosis is aided by history of surgery, trauma or inflammation and characteristic clinical appearance, whereas, definitive diagnosis is made by histopathologic findings. From an ophthalmic perspective, a PG may be located on the eyelids, conjunctiva or rarely on the cornea. A PG may grow to 1 cm in diameter. We present a case of surgically treated giant pyogenic granuloma with a size of 2.4x2 cm of the upper eyelid and we describe a technique of reconstruction of the upper eyelid skin.
**MATERIAL AND METHODS:** The operation was done under general anesthesia. The surgical margins were 3 mm beside the lesion and resection was performed in a rectangular fashion. Cautery was applied to the base of the lesion. The defect was closed by bilateral advancement flaps. The lower margins of the flaps were in 1 mm proximity to the eyelid margin and paralleling the eyelid edge so as not to severe hair follicles. The upper margins of the flaps were curved aligning the supratarsal fold
**RESULT:** Satisfactory functional and aesthetic results were obtained with this technique
**CONCLUSION:** This technique is preferable in patients with medium to large sized upper eyelid skin defects. The technique restores the form, and preserves function- the principle of a successful reconstruction.

P061

Reconstruction of nasal defects secondary to cutaneous malignancies

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Introduction: The nose, as the most prominent part of the face, exposed to the sun radiation and the different weather conditions is particularly vulnerable to cutaneous malignances. Carcinoma of the nose is a serious medical and esthetical problem, and the nasal reconstruction is a challenge for plastic surgeons.
M&M: Forty-nine patients who underwent nasal reconstruction at our Clinic for a period of 10 years (1994-2004), were retrospectively reviewed. There were 29 men and 20 women with an average age of 57 years (46-88). All nasal reconstructions were performed for defects of the nasal structures secondary to cutaneous malignances.
RESUSLTS: Basal cell carcinoma was the most common lesion - 45 cases, followed by Squamous cell carcinoma - 4 cases. The most common location of the cutaneous lesion was alla nasi 18 patients, dorsum nasi 14, naso-orbital region 10, and nasal tip 7 patients. The type and the location of the lesion was not sex dependent, but it's obvious that all our patients were mid-aged and elderly people. Reconstruction was performed mostly with transpositional flaps (naso-labial, frontal, naso-orbital) 23 cases, advancement flaps 15, skin grafts 5, operation sec. Convers 3, sec. Marschack 1, sec. Mustardi 1, and sec. Limberg 1.
CONCLUSION: Nasal reconstruction has reached a standard of consistent esthetic result with the restoration of nasal function. Depending on the size of the defect, advanced flaps for small defects and transpositional flaps, especially forehead, for the large defects are preferable.

P062

Unitransnasal medial canthopexy

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**Purpose:** Traumas resulting with naso-orbito-ethmoidal fractures and tumor surgery of the medial canthal region may cause orbital dystopia. Variety of techniques with many disadvantages, such as detachment, high cost and the risk of damaging the contralateral soft tissues and bony structures have been described for reattachment of medial canthal tendon. In this study we describe a new technique, unitransnasal medial canthopexy, which is easy to apply, cheap and reliable. This method is advantageous in cases which the tendon attached bony fragment is intact.
**Materials and Methods:** We applied this technique in two cases, one of whom was a tumor resection patient including the periorbital region and the other was a posttraumatic detachment case.
**Results:** Patients have been followed up for 18 and 16 months and no tendon detachment, vertical or horizontal dystopia have been noticed. Eyelid functions are satisfactory in both cases and no ectropion, proptosis or epiphora have been observed.
**Conclusion:** Although various methods are available for reattachment of the medial canthal tendon, unitransnasal medial canthopexy technique is an easily applied, cheap and safe method of reconstructing the medial canthal tendon with lower morbidity with respect to other techniques in cases which the tendon attached bony fragment is not injured. Long term follow up results of our patients demonstrates the effectiveness and acceptable aesthetic appearance of our cases.

P063

Reconstrucion of orbital floor fracture with resorbable mesh plate

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**Purpose:** When dealing with the impaired integrity of the bony structure of orbital floor, various materials such as autogenous bone, cartilage and alloplastic implants have been used to span the defect. A new material is necessitated because of disadvantages of non-resorbable alloplastic materials and difficulties in harvesting autogenous tissues. Safety and value of the use of resorbable mesh plate in the treatment of orbital floor fractures are discussed.
**Material and method**: Between 2002 and 2004 a total of 17 maxillofacial trauma patients complicated with orbital floor fractures treated with the use of resorbable mesh plate through subciliary or transconjunctival incisions. Pure

blow-out fractures were determined in 6 patients and 11 patients had accompanying maxillofacial fractures. Resobable plate is easily shaped to fit the orbital floor by cutting with scissors. Patients were evaluated clinically and with computed tomography scans preoperatively at 3, 6 and 12 month intervals postoperatively.
**Results:** In all 17 cases there were no evidence of infection, dyplopia and gaze restriction. Scleral show appaered in three patients by the second postoperative week but resolved totally within 3 to 6 weeks except one patient. In this patient displacement of mesh anteriorly occured which caused ectropion and enophthalmos required reoperation. Twelve patients had preoperative enophtalmus and two had dyplopia which were corrected postoperatively. One granuloma formation was seen due to foreign body which necessitated surgical debridement. No any other mesh related problems were seen at 15 months mean follow up.
**Conclusion:** The advantage of the resorbable mesh system in orbital floor fracture is the maintaince of orbital contents against herniation forces during the initial phase of healing and then complete resorbtion through natural processes after it is no longer needed. Our experience represents that resorbable mesh is a safe and effective material for reconstruction of the selected, non-extensive orbital floor fractures.

P065

The pedicled radial forearm flaps in complex reconstructions of the scalp and cranium

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The aim of the work is to evaluate results of treatment of patients in whom pedicled radial forearm flaps (PRFF) were performed to scalp and cranium reconstructions where there were no possibility to carry out microsurgery because of extensive damage of the surrounding tissues.
Six PRFFs were transferred on to the head in 5 females (mean age 33). The brain tumour was the main disorder in three patients (meningioma, astrocytoma, estesioneuroblastoma) and the other two had basal cell carcinoma penetrating into the brain and an extensive cranio-cerebral trauma. All patients had complications after the primary and secondary neurosurgical procedures in the form of inflammation and tissue necrosis, three had exposing the brain tissues. PRFF was applied as fascio-cutaneous three times, once as osteo-fascio-cutaneous and twice as osteo-fascio-subcutaneous flap. After excision of the necrotic tissue the harvested radial forearm flap was sutured into the defect and upper extremity was immobilized by fixing the head by plaster of Paris. The forearm fascia was used to dura mater reconstruction and a fragments of the vascularized radius were used three times allowed to limited frontal bone defects. Fascio-subcutaneous part of the flap was introduced inside the skull twice as intracranial flap because of late infection in patient after cranio-cerebral trauma.
The immobilization was removed and the pedicle was cut off after complete healing of the flap, usually after 3-4 weeks.
The flap survived in all patients. An incision of the flap so that a skin band about 15-20 mm wide above the pedicle was an innovation which protected radial vessels against rupture (2 patients showed epileptic attacks after the surgery).
PRFF appeared to be an effective method of reconstruction soft tissue and cranial bones as well as healing and making up intracranial tissues.

P066

Reconstruction of large scalp and calvarium defects by using the semi free latissimus dorsi flap associated with methylmetacrylate implant for cranioplasty

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Purpose : The semi free latissimus dorsi flap is characterized by a temporary vascular anastomosis on a pedicle not belonging to the locoregional anatomy of the skin defect. After a period of autonomy, the section of the flap pedicle is obligatory. Its advantage compared to the classical free flap is the great microsurgical security avoiding complex and stressful supervision in the post operative period, specially when a vital structure is exposed like dura or brain.

Material and methods : From june 98 to January 2005, 8 patients ranging from 18 to 65 years old and suffering from large scalp defects with a mean diameter of 23 x 15 cm have benefited from this surgical method. The etiology of these defects was : in 6 cases dermatofibrosarcoma protuberans involving the periost and in 2 cases an instable scar of thermal burn with osteomyelitis. Three stages have been used : - The thoracodorsal artery was anastomosed to the radial artery on the wrist in a terminolateral way and the thoracodorsal vein to the superficial radial vein in a terminoterminal way. The flap was fixed to the forearm for 2 weeks, then - the debridement wich has always exposed the dura was done; the flap was sutured to the defect after reconstruction of calvarial defects ( mean diameter = 8 cm ) with the methylmetacrylate implant. - After 3 weeks, the pedicle was sectioned and the flap tailored exactly to the defect under local anesthesia.
Results : No postoperative complications were reported. With a mean follow-up of 4 years, the scalp coverage was very satisfactory.
Conclusion : Even with its 3 stages, this technique seems interesting in the coverage of large scalp and calvarium defects specially when there is no possibility for a good postoperative microsurgical supervision.

P067

Butterfly forehead flap for coverage of a transfixiant nasal defect. Personal technique

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Advanced carcinomas of the nose often impose the full-thickness excision of the entire lateral wall. The classical solution for coverage of such defects is a frontal flap having it's deep surface skin grafted, but such a flap often present only a partial take of the endonasal graft. In order to avoid such complications, I propose to use a flap with a width double as the defect, with a "butterfly" design. The technique originates into the frontal flap raised at the hair border with a butterfly shape with wings wide open. As it's height equals the amount of skin excised in classical frontal rhitidectomies, the donor site can be closed by direct suture.
The width of the flaps' wings slightly exceeds the double of the postexcisional defect size. The midline of the flap is de-epithelialised to allow it's folding, thus obtaining a flap with both deep and superficial faces covered with normal vascularized skin. The flap is tunneled to the recipient site and sutured, first on its deep aspect to the intact mucosal margins, and then superficially.
The method has the advantage to cover into a single operative stage whole depth defects of the lateral wall of the nose, offering a good quality coverage for it's' endonasal aspect. In elderly patients the donor site morbidity is insignificant and moreover, raising the butterfly flap offers the esthetic advantages of a frontal rhitidectomy.

P068

Aesthetic restoration of facial defects with epitheses

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**Purpose:** Tumor, trauma and congenital agenesis or deficiencies are the most common reasons of facial tissue defects. Three-dimensional reconstruction of complicated anatomic structures of the face such as ear, nose and eye due to the emphasized reasons has always been a challenging problem. Various techniques have been applied ranging from local flaps to sofisticated free tissue transfers from the beginning era of plastic surgery until now. Although many plastic surgeons spent overwhelming efforts, satisfactory reconstruction of these structures has not been achieved yet. Therefore, these patients continue their lives in a lower quality due to difficulties in speech, eating, facial expression of mood, loss of self confidence and social isolation. Due to the developments in the osseo-integrated implantology in the last 15 years, their extraoral applications have resulted in better outcomes. In this study, we present our experiences with osseointegrated implants.
**Materials and Methods:** We have applied extraoral osseointegrated epitheses in the reconstruction of facial defects of 20 patients between 2002 and January 2005 of whom reconstruction with otolog tissue could not been achieved because of poor general condition, high risc of tumor relapse or unsuccesful repair. Ear, nose and eye are the most common reconstructed structures.

**Results:** Restoration with epitheses provided satisfactory aesthetic and functional results in most of the patients with minimum morbidity.
**Conclusion:** Due to the developments in extraoral osseointegrated implant applications, better results can be achieved with minimum surgical trauma in the three dimensional reconstruction of facial structures.

P069

Malignant tumors on the face and their surgical treatment

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Group of patients consists of 617 treated by operations in Clinic of plastic, reconstructive and esthetic surgery FNLP in Kosice during the years 1999 - 2004which means during 5 years.
Material and methods :It is retrograde detailed study of different types of malignant tumors on the face, histologicaly confirmed, with exact location, duration of anamnesis, age and sex of patients and the type of operations. Results are statistically confirmed.

Results: In our group of patients, there are slightly more women. Appearance of malignant tumors on the face is from first to ten`s decennium. Two thirds of tumors are Basaliomas. Other appearing tumors are squamocellular carcinoma,morbus Bowen,malignat melanoma,basosquamocellular carcinoma and metatipical carcinoma with desmoplasia.Duration of the presents of medical symptoms is from 1 month till 15 years. In some patients, the tumors were multiple and in some cases more types of malignant tumors were present in one patient. Surgically the tumors were mostly operated by using different types of local plastic operations, while keeping in mind three basic criteria: 1.curative, 2.functional and 3.esthetic. In our work there is exact study covering each year.
Conclusion: Thoughtful prevention of malignant tumors which are easily detectable by sight.
Key words: face- malignant tumors -surgical cure

P070

The "flag flap": a versatile tool to fix tip in nose malignancies

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Correction of the tip after ablation of nose malignancies is a challenging issue for the surgeon. There is need for a reliable, easy performing way to fix tip nose after exeresis of lesions no more than 1.5 cm wide in diameter. According to Ferri (1) we tried the “flag flap” drawn on the lateral cuteneous wall of the nose. The technique consists of sculpturing in a “ V ” fashion, on the lateral side of the nose, an island flap whose tail crosses the nasojugal groove and the inferior side nearly coincides with the supraalar crease. It is advisable a wide undermining of the tissues all around the flap and the area were it should migrate (i.e. the tip). It is noteworthy that the movement of this flap is more a rotation than an advancement and that the flap’s end of the tail falls, after the insetting, in the nasojugal groove. This technique has been adopted in two patients, the former male, 90 years old, the latter female, 60 years old, both of them with a basalioma between 1 and 1.3 cm wide, localised on the tip. Mean follow-up has been six months. The advantages till now appreciated by patients and surgeons are: good texture and similarity of the tissue, because of the proximity of the flap, to the tip’s skin, the excellent camouflage of the scars, the sparing of methods either too easy or too complex but which leave in any case evident signs and scar distortion such as split/full thickness skin graft and distant flaps like the paramedian flap. To sum up “flag flap” appears for its versatility a useful tool to take always in mind in the reconstruction of the nose.
(1) Ferri,M. The island rotation flap: a better alternative for nasal tip repair .Plas.Reconstr.Surg.114:1020,2004

P071

Three-dimensional superficial liposculpture and treatment of the so called cellulite by nutritional supplement and elastocompressive garment

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A new concept of body reshaping is presented using superficial liposculpture.Thephilosophy and the principles of the 3-D technique,its logical evolution,are illustrated and discussed.The experience of more than 20years of practice in the fieldof liposuction, after more than 4500cases operated is presented.Nothing wrong occours if surgeon stays in the right superficial plane performing a liposculpture: belowthe subdermal vascular plexus,respecting 3-4mmof subdermal fat.
This is the plane of superficial liposculpting.If surgeon works too close to the dermis,his cannula will not glide easily.So the trick isto perform thousands of very close tunnels in the superficial areolar layer of the fat , close to the dermis but not against the dermis,to leave a harmoniously defatted flap.Wenever create a cavity:we always aspirate by means of tunnels.
3dimensionalsuperficial liposculpture is not for beginners and has a long learning curve,because is amore refined and complicated technique than the conventional one.Never underexstimate the procedure: it is based on simple concepts,but needs time to be done well.It is morethan asimple fat removal:it takes liposuctionto a moreplasticdimension.
The conceptof concavity and convexity,of looking atthe body three-dimensionally determines three further effects: lengthening of thelateral portionof the thighby transforming the lateral part of the gluteus in an additional portion of thethigh.
lengtheningof the backand increasing projection of the buttock:the suction of the lower back and sacral area reduces the lenght of the gluteus with the consequenteffect of increasing the extention of the back and the convexity and prominence of the buttock.
upward retractionand rotationof the gluteus the incision points that we use and the verticalaspiration vectors allow,through the lightnening of the buttock,the upward retraction of the cutaneous flap of the gluteus,and the elevation of its lateral posterior area,tightening the skin.
Further aspirationofthe innerthigh immediately lateral to the"labia majora"creates the“light triangle",that gives lightness and harmony to the shape of the gluteus.

P072

Lifting of soft tissues: old philosophy, new approach - a method of internal stitching (Aptos Needle)

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Carrying out aesthetic operations aimed at lifting soft tissues (face lift - classic or endoscopic, mastopexy, etc.) envisages moving subcutaneous soft tissues to a new, aesthetically more advantageous, higher position, and stitching them with noose sutures.
The same aim is pursued by the method APTOS THREAD - a method allowing of lifting soft tissues by means of specially designed threads provided with microscopic angle-wise projections.
While the former is used only in an open operational wound, making it possible to achieve stable, long-term outcomes, the latter is minimally invasive, to be performed with no cuts, not always, however, with a long-term effect.
We have decided to unite the possibility of stitching soft tissues with noose sutures without mobilization thereof with the advantage of the minimally invasive APTOS THREAD method, to have devised a specially designed atraumatic needle which we called the APTOS NEEDLE and developed a new technology of soft tissue lifting without skin cuts.
The APTOS NEEDLE is double-edged, while the tissue-suturing thread is factory-connected with the needle in the middle. Depending on the nature of the operation, the needle may be either straight, or curved along the circumference.
Such a needle possesses a possibility of bilateral passability which does provide its passage under the skin along a polygonal or long contour without completely emerging to the skin surface, which makes it possible for the thread to pass under the skin, allowing subcutaneous stitching of soft tissues, without skin retractions, to finally yield an even pulled up contour.
The APTOS NEEDLE method makes it possible to carry out the operations aimed at lifting the soft tissues of the forehead, lateral portions of the brow, buccozygomatic areas, sagged neck, as well as mastopexy.
We have used this method since May 2003 in a total of 82 cases.

P073

## Surgical findings and treatment of ptosis caused by hard contact lens

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Purpose
Previous article explained the mechanism of hard contact lens induced ptosis as an aponeurosis injury .
The ptosis phenomenon was explained that antagonistic action of the orbicularis and levator muscle while squeezing the eyelids to remove the lens, foreceful rubbing of the lens sequent stretching of upper eyelid structures, blinking, edema , blepharospasm injury.
But we found 5 cases ptosis patients induced by injury of Müller's muscle without aponeurosis injury
Materials and methods
There were 5 ptosis patients (5 women and no man) and 9 eyelids
The ages (23 to 43 years) of these patients was not consistent with senile blepharoptosis and we excluded all other possible causes. The mean hard contact wearing time was 6.7 years (3-8 years) .
These patients showed mild to moderate ptosis.
Result
There was no aponeurosis injury finding and only Müller's muscle thinning and partial loss. The injuried area was found in the center of Müller's muscle where lens contacted area
The treatment was Müller's muscle repair with 6-0 vicryl medial to lateral..
Conclusion
We found prolonged hard contact lens wear induced ptosis by Müller's muscle thining or disinsertion , without aponeurosis injury
We think Müller's muscle injury is previous stage of aponeurosis injury.
Müller's muscle repair is the key of the treatment these patients.

P074

## Cosmetic lateral canthoplasty

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Purpose
Even though there are patients who want for cosmetic lateral canthoplasty for lengthning of lateral palpebral fissure on lateral canthal area, we have no recommandable operation procedure which the result and scar is acceptible as cosmetic surgery.
Material and methods
An elevated upper eyelid crus flap was used for the lateral part of the lower eyelid which acts as a rotation flap. The proximal part of the flap contains the upper eyelid margin and the palbebral mucosa without the upper eyelashes, and the triangular flap tip containing only the skin of the upper eyelid. The upper crus flap was 2-3mm in length and the posterior deepening of the palpebral conjunctiva was performed by transverse back cutting after bleeding control by coagulation of the palpebral conjunctiva and soft tissue. Crus flap width was determined according to the shape of the canthal angle area. The defect caused by the upper crus flap was covered by a direct suture method between the palpebral conjunctiva. The skin was sutured with a 7-0 black silk
Result
The postoperative follow-up was made for one month to 3 years in 36 patients.
The palpebral fissure increased by 3.1 mm on average, ranging from 2.2 mm to 7.5 mm. Two cases showed hypertrophic scars in the opened lateral canthus. The scars responded well to topical application of a steroid ointment in 6 months**.**
Conclusion
We developed a technique to lengthen the lateral orbital fissure, maintaining the natural configuration of the lateral canthal angle. This surgery makes the eyes look larger and brighter in appearance

P075

Divine proportions and female facial beauty

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Purpose
The Parthenon in Athens, the Great Pyramids in Egypt, Notre-Dame in Paris, the Petronas Tower in Kuala Lumbur, Leonardo da Vinci paintings, Fibronacci sequence, the spiral of many seashells, and other numerous well-known constructions have one thing in common: The Golden Number or phi or Divine Proportion or 1.618 . We would like to investigate if this number can be found in facial proportions as well, and characterize the female facial beauty.
Materials and Methods
In the third definition of the book VI of the Elements, Euclid a Greek mathematician says that a segment is divided in medium and extreme ratio, when the entire segment has to his longer part the same ratio as this longer part has to the shorter one. The numerical expression of this ratio is the number 1.618..... .
We studied the pictures of 20 well-known female models from glossy magazines. Specifically, measurements were taken vertically and horizontally from their faces as follows:
Vertical measurements: Trichion (T) to Mentum (M), Trichium to Alar Rim, Alar Rim to Mentum, Stomium (SM) to Mentum, Lateral Canthus (LC) to Mentum (M).
Horizontal measurements: Width of the nose (WN), mouth (WM), eyes (WE), temple (WT).
Results
Vertical Measurnents
The ratio T-M/T-AL= T-AL/AL-M=AL-M/S-M=T-M/LC-M=1.618 with a deviation of +/- 0.06.
Horizontal Measurments. The WN has φ relation with the WM, the WM has φ relation WE, and WE has φ relation with WT with a deviation of +/- 0.02.
Conclusions
Our results show that the Golden Number defines a beautiful and harmonious female face's proportions. It may offer additional guidelines in out clinical work.

P076

Combined surgical and injection technique in the enhancement of the upper lip fullness

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During the two years period 17 patients with severely insufficient upper lip were treated at the Clinic for Plastic Surgery La Brea International, Belgrade. While some of the patients were born with thin or insufficient upper lip, for the others it was the consequence of previous reconstructive surgeries due to congenital cleft lip and palate disorder. In an effort to produce more comprehensive and higher quality outcome, we have combined surgical technique with Polly Meta Metil Acryl (PMMA) injection.
Material and Methods: From May 2002 to July 2004, 17 patents, age raging from18-47, gender structure: 15 women and 2 men, were treated for the aforementioned deficiency. In 10 out of 17 cases the deficiency was congenital, and in the remaining 7 the consequence of previous surgeries at the earlier age.
The applied approach consisted of multiple advancement of VY flaps in line at the interior side of the mucous, proximally based. Since this resulted only in moderate upper lip enlargement, 10% PMMA was simultaneously introduced to all patients in the amount of 2-3 milliliters, approaching from through the mouth angles.
Outcome: Each patients was examined 2 times in 3 months intervals after the surgery. In 13 cases healing was per primam, and in the remaining 4 patients healing was per secundum.
During secondary correction PMMA was introduced to 8 patients after 7-30 days. Overall effect ranged from satisfactory to excellent.
Conclusion: In cases where additional surgical incisions and post operation scars need to be avoided, upper lip can be significantly enlarged applying technique of advancing mucous flaps combined with PMMA injection.

P077

Early corrective rhinoplasty is a solution for the treatment of nasal fractures?

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Nasal bone fractures are the most common among facial fractures and are the third most common fractures in the human frame. Although many forms of treatment have been introduced, Current management techniques for acute nasal fractures result in a high incidence of posttraumatic nasal deformity (14 to 50 percent). Associated traumatic edema, preexisting nasal deformity, and occult septal injury account for most of these acute reduction failures.
**The purpose** of this study is to evaluate the effect of early open corrective rhinoplasty on preventing a high incidence of posttraumatic nasal deformity.
**Material method:** To decrease morbidity and psycological problems of the patients we began a study that following subsude the acute fase edema and tissue injury, open corrective rhinoplasty was performed on acute nasal fracture patients under general anesthesia. Between 2002 and 2004, 10 patients were operated by the same surgeon. This study was done on 10 patients, between 18 and 32 years olds, 4 female 6 male.
**Our results** were, both functionally and cosmetically successful in with no complication. We had a mean of one year"s follow-up (ranging from 6 to 24 months).
We **concluded** that early open rhinoplasty can decrease morbidity, psycological, functional problems and decrease surgical intervention.

P078

Usage of diced medpor (PTFE) in mentoplasty (chin augmentation)

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Augmentation mentoplasty is a commonly performed operation especially in conjunction with rhinoplasty. While various materials such as; PTFE and silicone implant, bone graft, diced cartilage, sliding genioplasty, distraction osteogenesis have previously been used for this procedure, diced medpor (PTFE) has not been used so far. The **purpose** of this study is to evaluate the use of diced medpor in chin augmentation.
**Method:** A pocket is prepared by submental insicion. According to the deficiency poreous PTFE (medpor) block diced in 1 by 1.5 mm and wrapped with surgicell (oxidized Cellulose) and inserted into the pocket, insion closed, and then external bandage is applied by giving shape with external hand massage.
**Result:** This procedure was performed 20 patients in addition to rinoplasty in 2-18 months with a mean follow-up of 12 months. Augmentation of 5 to 10 mm was performed. There was no complication except early seroma in 3 patiens required aspiration by syringe. It is easy to give shape diced medpor for 3 weeks following surgery by massage.**Conclusion:** Diced medpor in augmentation mentoplasty is chip, easy to insert, moldable by massage and has flexibility in conforming to the shape of the mandible, postoperative ingrowth of fibrous tissues precluding late displacement, and a natural feel to the reconstructed area.

P079

A new technique for nasal reconstruction in total septal lost for cocaine abuse and trauma

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Technique born in the need of the reconstruction in patients who had a larger septal lost and need a nose augmentation surgery, using autologous cartilage graft from auricular and ribs, in combination with other implants (Medpor) and titanium screws.
Patient evaluatiaon clinically, psychologically, endoscopically, CAT scanner, analysis, and photographs.
The technique is performed under general anesthesia in an open rinoplasty approach, beginning with a

subperiostical dissection of the remaining structures to the frontonasal union. Then the placement of the graft for the dorsum, usually a Porex graft or an autologous cartilage rib graft which is supported with a double buttress fixed in each piriform aperture border (prior a subperiostical dissection in an intraoral approach) with a 1.5 x 6 mm. titanium screws in the lower side, and in the upper side with a 4-0 nylon sutures between the dorsal graft and the two buttresses bilaterally (usually made in 0.8 mm. Porex laminae) "Taylor made", depending on the predetermined height. Also place a bilateral graft in the inferior border of de piriform fosae to increase the total height of the nasal pyramid. An additional fixation at the radix level with screws between the dorsal graft and the frontonasal union through a small incision. The alar cartilage remaining is reconstructed with a batten graft from ear. A "Sheen" graft for the tip is placed fixed with 5-0 nylon sutures over the dorsal graft. Closure with resorbable sutures.
A hyperbaric oxygentherapy session is necessary in all ours patients (2 atms. x 90 minutes/ day x 7 days) to increase the graft integration.
No mayor complications were found. We got a good result in a long term evaluation.

P080

Combined surgical and injection technique in the enhancement of the upper lip fullness

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During the two years period 17 patients with severely insufficient upper lip were treated at the Clinic for Plastic Surgery La Brea International, Belgrade. While some of the patients were born with thin or insufficient upper lip, for the others it was the consequence of previous reconstructive surgeries due to congenital cleft lip and palate disorder. In an effort to produce more comprehensive and higher quality outcome, we have combined surgical technique with Polly Meta Metil Acryl (PMMA) injection.
**Material and Methods:** From May 2002 to July 2004, 17 patents, age raging from18-47, gender structure: 15 women and 2 men, were treated for the aforementioned deficiency. In 10 out of 17 cases the deficiency was congenital, and in the remaining 7 the consequence of previous surgeries at the earlier age.
The applied approach consisted of multiple advancement of VY flaps in line at the interior side of the mucous, proximally based. Since this resulted only in moderate upper lip enlargement, 10% PMMA was simultaneously introduced to all patients in the amount of 2-3 milliliters, approaching from through the mouth angles.
**Outcome:** Each patients was examined 2 times in 3 months intervals after the surgery. In 13 cases healing was per primam, and in the remaining 4 patients healing was per secundum.
During secondary correction PMMA was introduced to 8 patients after 7-30 days. Overall effect ranged from satisfactory to excellent.
**Conclusion:** In cases where additional surgical incisions and post operation scars need to be avoided, upper lip can be significantly enlarged applying technique of advancing mucous flaps combined with PMMA injection.

P081

How perfection eventuate to complication in plastic surgery

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In plastic surgery the is fine border between perfection and complication
Surgeon try to do the best operation for the patient with passing this dangerous border. there are many examples for these fine border.
in blepharoplasty he try to achive better result with more fat and skin excision
but this may lead to severe complication.In face lifting , liposuction, breast reduction , choosing bigger prosthesis for better result,.... in all of these operation we must know this border . that is why that may expert surgeon after many years of practice they see bad coplication.in plastic surgery many time little is more. and more=complicatin..in flap designing often more is less?of surgeon see that in operation larger flap is needed.
I will mention many fine border that if we do attach to it exactly may produce complication and disater. In

choosing new technique of we may have complication so be carefull in this situations to avoid worse result in a new technique. Be onest with your patient before your operation and do not affraid that miss your case if you tell him the truth.well informed patient are better than those how have not enough information. they will support you during complications.

P082

Sculpturing youthful facial appearance

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PURPOSE: The harmony of the face consists of various profile features, volumes of the facial planes, heights, and the importance from the surgeons' ability to satisfy patients' beauty expectations.
MATERIAL AND METHODS: After a complete physical and psychological examination, patients were operated at Clinic for Plastic, Reconstructive and Aesthetic Surgery in Skopje Macedonia. During a one year period (January 2003 - January 2004), 177 patients underwent aesthetic surgical intervention for improving facial lines such as: nose reshaping 48 (30 F, 18 M) patients, otoplasty 52 (31 F, 21 M), forehead lift 21 (16 F, 5 M) patients, eyebrow lifts 40 (31 F, 9 M) patients, and surgical treatment of lips 16 (all F) patients.
RESULTS: In most of the cases patient satisfaction was achieved by the altering (sculpturing) of the more visible signs of facial "disproportions". Satisfactory surgical treatment was achieved by taking into consideration patient's personal conceptions of what is beautiful. Stay in hospital was 1-2 day with post operative edema usually limited to the first 2 to 4 days. Stitches were usually removed after the 5th postoperative day.
CONCLUSION: Patients these days are seeking healthier and happier way of life. Aesthetic surgical interventions provide a more youthful appearance for those seeking such happiness.

P083

Liposuction as office-based / one-day surgery

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From the experience of 1261 cases over 10 years it has been emphasized that liposuction is a surgical procedure that can be performed safely on an outpatient basis. Only vacuum-assisted liposuction was performed; 85% of the patients were female. The most common localization was the pelviotrochanteric region. The aspirated fat tissue ranges from 30 cc to 4800 cc, with an average of 1611 cc. Suction of more than 2500 - 3000 cc fat tissue increases the hazards associated with this type of operation. The wet, superwet or tumescent techniques were performed. In 42,06 % of the cases, local anesthesia (Klein solution) was used. In 1,58% additional sedation was necessary. Liposuction was performed under general anesthesia in only 1,59% of the cases; in most of the cases (54,76%) epidural anesthesia was administered. In the cases where regional anesthesia was performed, lidocain was either not added to the solution or the quantity was low with the purpose of allowing additional application through the epidural catheter if necessary. Some complications of the regional anesthesia and its prevention are discussed . Liposuction can be performed on an outpatient basis only under certain specific conditions - patient class ASA I, recovery room, permanent phone connection between the doctor and the patient after leaving the facility, etc. Regional epidural anesthesia is perfectly suitable for outpatient/one-day surgery.

P084

Evaluation of blood loss in large volume suction-assisted lipectomy

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Purpose: The suctioned-assisted lipectomy is a popular operation in reconstruction and cosmetic surgery. However, the large volume suction-assisted lipectomy is still in debate. The blood loss of the patient, during and after the operation, is most concerned by the plastic surgeon. Estimation of the blood loss is an important factor of such an operation.
Material and method: 15 patients had received suction-assisted lipectomy with the amount of aspirates over 3000 cc( range = 3000cc-9700cc) in past 2 years. There were 5 patient receiving pre-and post operation hematocrit tests. According to the equation proposed by Dr. Pitman, the estimated blood loss and percentage of aspirates were calculated.
Result: There was no patient receiving blood transfusion during and after operation. There was no shock or decreased blood pressure during or after operation. Average estimated blood loss of the 5 patients was 434.8cc( range = 89-967cc). Average blood loss as a percent of aspirates was 7.23%( range = 2.26%-19.3%). There was no major complication such as pulmonary edema, deep vein thrombosis, wound infection or skin necrosis. Minor complications were prolonged swelling, irregularity and weaving of skin.
Conclusion: With adequate subcutaneous fluid infiltration, large volume suction-assisted lipectomy can be a safe and effective operation. Blood transfusion and pulmonary edema can be avoided. However, the minor complication should be prevented to improve the outcome of the operation.

P085

Technical considerations between power assisted and conventional liposuction hand held devices

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Recent liposuction technology has developed that
has prompted the aesthetic plastic surgeon to make considerations
of techniques, indications and devices
**Purpose**
Compare results of two different suction assisted devices used in the same patient by the same surgeon and under the same operative conditions.
**Materials and Methods**
Two groups of twenty patients each underwent suction lipectomy with a hand held power assisted device (PAL) and a conventional manual device (CMD). All patients received the same type of tumescent infiltration . One side was treated with one technique and another side with the other .The same type of cannula was used on both sides (4 mm basket). Parameters analyzed were fat aspiration speed by applying 5 minutes per technique and fat aspiration volume per stroke .
**Results**
When fat aspirates were compared, the CMD produced an average of 785.71cc while PAL produced 467.86 cc. When an equal number of liposuction strokes were compared (300 strokes/side) both methods were comparable although the PAL took longer. The CMD produced an average of 469cc in 2:17 min and the PAL produced 437 cc in 2:46 min. When comparing completion times for similar cases for a given surgeon the finishing times were faster using PAL. PAL tends to produce less aspirate volume for a given time and is similar to the CMD on a stroke per stroke basis. However completion time for comparable cases was reduced.
**Conclusion**
Finishing times were faster with PAL because of less fatigue for the surgeon(fewer rest periods) and achieving a smoother result . PAL is faster due to the creation of a new tunnel on every stroke. Fat aspirate volume is dependent of number of strokes not the specific device.

P086

Entry into higher surgical training in plastic surgery in the UK: A comparative study

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Introduction
Entry into surgical training schemes is competitive. Academic achievements in surgical trainees vary with competitiveness of the subspeciality and desirability of the consultant post. Plastic and Reconstructive Surgery is a competitive speciality due to the variety of the surgery performed and the small number of training posts available. There is little in the literature concerning the entry requirements to higher surgical training schemes.
Methods
In order to assess the level of achievement of surgeons entering higher surgical training in the UK and Ireland, we investigated the clinical background, academic qualifications and research activities of plastic surgery specialist registrars in the United Kingdom and Ireland (n=40). We compared the plastic surgery group with Otorhinolaryngology specialist registrars (n=50) and orthopaedic specialist registrars (n=60).
Results & Discussion
Selected results from our survey show that 64.3% of the plastic surgeons had intercalated degrees, 77.5% had higher degrees, 93% had eighteen months or more previous plastic surgery experience and 87.5% had published (range 0-32, mean 6.54). In total, Plastic Surgeons trained for longer as a senior house officer (vs ENT, P<0.001, vs Orthopaedics P<0.001 :*Mann Whitney U*). Plastic Surgeons also trained longer as a senior house officer in their speciality (vs ENT, P<0.001 vs Orthopaedics P<0.011:*Mann Whitney U*). The plastic surgery group exhibited a significant association with the presence of a higher research degree (P<0.0001:*Pearson Chi-Square*). The Plastic surgery group was associated with a higher number of publications (P<0.0001:*Kruskal-Wallis test*). We believe this study will be of interest to junior trainees hoping to pursue a career in plastic and related branches of surgery, and senior surgeons on higher surgical training appointment committees.

P087

Learning curve in experimental and clinical microsurgery during the residency training period in plastic surgery

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This paper presents a personal learning curve in experimental and clinical microsurgery during the 6 years training period in Plastic Surgery in Bucharest Emergency Hospital and during 1 year research fellowship in Microsearch Foundation of Australia. After the constant following of Plastic Surgery and Reconstructive Microsurgery Department training program in microsurgery in the first 2 years of residency, the patency of microvascular anastomosis in animal models increase from 50% to more than 90%. Reaching this value of patency allow to start the clinical microsurgical practice (especially replantations). In the first 3 years of training the vascular success in replantations was 66.67% (10 from 15 cases) and in the last 3 years was 97% (33 from 34 cases). In a series of 77 consecutive limb transplants in rats the success rate increased from 33.33% in the first 24 cases, to 98% in the last 53 cases (100% in the last 46 consecutives cases). A good program of training and a constant effort to work in experimental laboratory is an essential condition to obtain good result in microsurgery. With the microsurgical basic and advanced techniques practiced, there will be more ease, confidence and success when doing tissue transplantations or replantation in humans, even in infants.

P088

Randomised controlled trials in plastic surgery. Survey of output and quality of reporting

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Randomised controlled trials (RCTs) are considered the best level of evidence when evaluating interventions. Report quality is often used as a surrogate marker of methodological quality, with poorly reported trials assumed to be poorly conducted. To address this problem the Consolidated Standards of Reporting Trials (CONSORT) statement was published, encouraging authors to explicitly report certain items of information. The aim of this study was to survey RCTs published in the plastic surgery literature and determine the quality of reporting.
All RCTs published in Plastic & Reconstructive Surgery, Annals of Plastic Surgery and British Journal of Plastic Surgery from 1980 to 2004 were retrieved using a Medline search. Quality of reporting was assessed using a 17-

item checklist derived from the CONSORT statement.
One hundred and thirty three trials were eligible for assessment. Fifty-six (42.1%) originated from European countries. Anaesthesia/analgesia was the most popular topic addressed and accounted for 23 (17.3%) of all studies.
Power calculation was only reported in 17 trials (12.8%). Randomization methodology, allocation concealment and blind investigator/assessment was reported in 39 (29.3%), 25 (18.8%) and 69 (51.9%) trials respectively. Study limitations were also infrequently reported and present in 45 (33.8%) trials.
This study indicates reporting of certain aspects of plastic surgery RCTs to be inadequate.
If the results of RCTs are to be used to generate evidence-based guidelines, investigators must ensure both methodology *and* reporting is of a high standard.

P089

Impact of bispectral index monitoring on the quality and the cost of aesthetic and plastic anaesthesia

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**Purpose:** The aim of this study is to examine the efficacy of Bispectral Index (BIS) monitoring as a tool for adjusting the amount of propofol patients receive to maintain a safe and adequate level of anaesthesia and sedation during aesthetic and plastic surgery
Materials and Methods: a total of 360 patients scheduled for aesthetic plastic surgery were allocated into four groups. Propofol consumption was compared in the general anaesthesia (GA n=120) and anaesthetic sedation (AS n=30) groups with propofol consumption in groups incorporating BIS (B-GA n=120), (B-AS n=30). In the GA and AS groups patients received midazolam (4±1,5 - 4,2±0,54 mg), fentanyl (91,5±31,5 - 67,5±8,2 µg) rocuronium (0,6 - 0 mg/kg) for intubation and $N_2O$ (50% - 50%) in oxygen, respectively. BIS levels were kept in the range 40-60 in group B-GA and 61-88 in group B-AS. The level of anaesthesia was assessed according to somatic-autonomic signs in the non-BIS groups. Consumption of propofol and analgesics was monitored, cardiovascular and respiratory data were collected. Postoperative pain visual analogue scores, nausea and vomiting (PONV) were recorded.
Results and Discussions data (Mean±SD) are shown in the table. *p<0,05 vs. GA, **p<0,05 vs AS

| | B-GA n120 | B-AS n30 | GA n120 | AS n30 |
|---|---|---|---|---|
| prop $_{mg/kg/h}$ | 5,4+0,7* | 2,3+0,7 | 6,4+1,3 | 2,4+1,4 |
| BPdrop$_{ind\ \%}$ | 10,8±7* | 6,2±5,8** | 15,7±8,5 | 11,5±6,5 |
| BPdrop$_{min\ \%}$ | 19,8±9 | 13±8,2** | 20,1±7,7 | 18,8±6 |
| VAS <0,5h | 2,7±3,03 | 0,54±1,5 | 2,6±2,8 | 0,1±0,9 |
| PONV | 7 (5,8%)* | 0 | 10 (8,3%) | 0 |

Conclusion(s): 1) Application of BIS decreases the consumption of propofol 2) Cost of anaesthesia is decreased 3) Haemodynamic stability can be achieved more effectively by the use of BIS 4) BIS monitoring decreases the PONV. **References:** Struys MM. et al.: Cost-reduction analysis of propofol using the bispectral index. Eur J. Anaesthesiol. 2002 Oct;19(10):727-34 2) Recart A, et al.: The effect of cerebral monitoring on recovery after general anesthesia Anesth Analg. 2003 Dec;97(6):1667-74

P090

Application of stem cells-related tissue engineering in reconstructive surgery

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The discovery of stem cells and their characterization have generated much recent interest. Stem cell plasticity provides new prospect of tissue and organ engineering. Soft tissue, cartilage and bone defects reconstructions are perpetual challenges for plastic surgeons. Stem cells-related tissue-engineering holds enormous potential in addressing these problems.
We reviewed the current status of stem cells research and its potential application in plastic and reconstructive surgery providing examples. Mesenchymal cell derived from fat or bone marrow has been particularly promising. Mesenchymal cells from lipoaspirate are able to differentiate into osteoblasts, chondrocytes, myocytes, adipocytes, and neuron-like cells.
Transplantation of endothelial progenitor cells identified in peripheral blood have been reported to experimentally improve surgical flaps and provides hope for neo-organ generation.
Bone, cartilage and tendon tissue engineering are also reviewed. The concept of tissue-engineered muscle will become more viable as issues such as vascularization and innervation are addressed.
We also reviewed examples of scaffolds used in soft-tissue engineering.
The ultimate goal in tissue engineering is the development of composite tissue consisting of skin, subcutaneous tissue, cartilage, bone and muscle. This obviates the problem of donor site morbidity, allogenic graft rejection or foreign body reaction. It also allows for individually-tailored tissue prefabrication. With interdisciplinary collaboration, the field of plastic and reconstructive surgery will enter a new era with bioengineered tissue construct.

P091

Osteogenic differentiation of adipose derived mesenchymal stem cells (ADMSC) in a three-dimensional collagen type I gel

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Introduction
Segmental bone defects are usually reconstructed by transplantation of autologous bone grafts, segmental transportation, or implantation of allogenic prostheses. In this study human ADMSCs were differentiated into the osteogenic lineage in a three-dimensional collagen type I gel in vitro, to later on reconstruct segmental bone defects.
Material and Method
Human ADMSCs were isolated from adipose obtained from abdominoplasty operations according to published isolation techniques. Cells were plated in medium containing 10ng/ml Fibroblast Growth Factor II. Passages 3-4 were used for the experiments. The cells were detached and mixed with the collagen type I gel (rat-tail, ArsArthro Ag, Esslingen, Germany) to a final concentration of 1Mio. cells/ml gel. 1 ml of the he cell-containing gel was pipetted into each well of a 24-well plate and left to polymerize for 30 minutes. Standardized osteogenic differentiation medium was added to the constructs and they were differentiated for 6 weeks with a change of medium every third day. The constructs were analyzed with immunofluorescence, histochemistry, and PCR-analyses. Cell free and undifferentiated constructs served as control.
Results
Alizarin red staining showed a high mineralization of the constructs and alkalic phosphatase was expressed. In addition there was some chondrogenic differentiation observed. Immunofluorescence showed an increased synthesis of fibronectin and collagen type I during differentiation. Genetic analysis showed an expression of genes characteristic for bone, such as Collagen Type I, Osteocalcin, and Osteopontin.
Summery
Osteogenic differentiation of ADMSC's in a collagen type I gel could be achieved. Bone-characteristic genes were expressed and the constructs showed a good mineralization.
Conclusion
Our findings are promising for future reconstruction of segmental bone defects, especially when the cell-containing gel would be loaded onto three-dimensional polymers such as Polycaprolactone (PCL) for more stability. Further experiments will prove this hypothesis.

P092

Histological study of porous hydroxyapatite with an attachment of rib-periosteal flap in rabbit

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Introduction: The present paper describes the sequential event of induced bone formation in vivo using porous hydroxyapatite (PHA) with an attachment of vascularized periosteal flaps.
Materials & methods: PHA blocks (porosity; 50%, dimensions; 8x4x2mm) were ligatened to the cambium layer of periosteum and muscle followed by raising of latissimus dorsi musculoperiosteal flap in rabbit. PHA blocks were removed 4, 8, and 12 weeks after the operation, and these blocks were performed histological examination as well as three-dimensional reconstruction of induced tissue in the pores using serial section of the specimen. Furthermore, to go insight into bone induction, an extent of that was discussed, and correlations between a calculation of occification ratio indicated as area of calcified bone / area of the pore in each pore and distance from attached periosteum were also discussed.
Results: Fibrous tissue containing capillary filling each pore is encompassed with sloughing bone that connects through the interporous canal each other. Fat having erythroblast islets is also demonstrated in some pores. Adipocytes were found surrounding capillary near the center of the pores. Furthermore, there was a distinct negative linear correlation between bone formation and distance from attaching periosteum. On the other hand, no bone and fat formation were found in the pores with an attachment of muscle.
Conclusions: An induced bone formation was usually accompanied by an appearing of fat containing hematopoietic cells and capillary in vivo, and this event starts from the pores closer to the periosteum.

P094

Biodegradable plates and screws for reconstructing of cranial bone holes: experimental studies and clinical experience

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Purpose
Bioabsorbable osteofixation devices were developed to avoid problems associated with metal ones. They must be strong enough, easy to be shaped and cause as less tissue reaction as possible. They do not have to be removed so a re-operation is avoided. The self-reinforced technique has provided more durable plates and screws to be used. The aim of these studies was to find out the role of bioabsorbable devices in cranioplasty.
Materials and methods
In our three experimental studies we found out that a cranial bone hole 5-10mm in diameter covered by a polylactide plate (different copolymers) healed and ossified faster than the control hole left empty. 36 New Zealand white rabbits were operated on. Two bone holes were drilled on the parietal bone , one of them covered by a biodegradable plate (different copolymers in each series) when the other one was left empty , only periosteum covering the hole.
Results
A clear difference between the empty defect and the biodegradable side was seen in 12 weeks postoperatively. The tissue reactions around the implants were minimal and no infection occurred . In 24 weeks, the implant side was fully ossified while there was a cavity full of fat and scar tissue on the other side.
Biodegradable devices have also been used in clinical use at Oulu Universíty Hospital when performing cranioplasty in congenital skull deformities.
Conclusion
As a conclusion , biodegradable devices seem to enhance the healing process , cause minimal tissue reactions and do not have to be removed. They are safe to be used in pediatric surgery, too.

P095

Progress in bioabsorbable biomaterials: development of multifunctional osteoconductive drug-releasing hard tissue fixation screws

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The aim of the study was to characterize properties of multifunctional (MF) bioabsorbable rods and screws. Bioaborbable polymers (PLGA 80/20 or PLDLA 70/30) were used as the matrix, and bioactive glass (BG) as osteoconductive agent. In MF-1, ciprofloxacin (CF) was included and in MFM-2, for a tissue-reaction modifying agent was used. The self-reinforced (SR) were sterilized using g-irradiation. Drug release, mechanical properties, and microstructure were evaluated. Effects *in vitro* cell models were used. *In vivo* models included the implantation in cranial bone of rabbits and subcutis of rats. Biomechanical (pull out strength) testing was carried out in cadaver bones.
CF was released from the studied screws after 44 weeks (P/L/DL)LA) and 23 weeks (PLGA) *in vitro*. It remained in the range of 0.06 - 8.7 µg/ml/d (for P(L/DL)LA) and 0.6 - 11.6 µg/ml/d (for PLGA) after the jump start. Initial shear strengths of the studied ciprofloxacin-releasing screws were 152 MPa (P/L/DL)LA) and 172 MPa (PLGA). Studied screws retained their mechanical properties for least 12 weeks (P(L/DL)LA) and 9 weeks (PLGA) *in vitro* at the level that ensures their fixation properties. Histology of MF-1 showed increased giant cells at some areas of the implantation site. Pull-out tests indicated that the early version of the MF-1 type of screws have lower values as compared to controls. Inhibition of bacterial growth, attachment and biofilm formation was significantly different than controls. MF-2: Over 60 d, release. Study of mechanical properties is going on.
SR-P(L/DL)LA and SR-PLGA MF implants with appropriate drug release, structural, mechanical and biocompatibility properties can be produced. Clinical studies will be started in near future (MF-1).

P096

Success with the use of biosorb osteofixation devices in 165 cranial and maxillofacial cases: a multicenter report

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Bioabsorbable osteofixation devices were developed to avoid problems associated with metals. Bioabsorbable devices are mostly made of the polymers polylactide (PLA), polyglycolide (PGA) and their copolymers (PLGA and P(L/DL)LA). Using the technique of self-reinforcement of bioabsorbable materials, it is possible to manufacture osteofixation devices with ultra high strength. Self-reinforced (SR) polyglycolide-co-polylactide (SR-PLGA) 80/20 was selected to make devices (Biosorb™ PDX) for this study because of its favorable degradation characteristics. The aim of this study was to evaluate the efficacy of using SR-PLGA (Biosorb™) plates and screws in the fixation of osteotomies in craniomaxillofacial (CMF) surgery.
In a prospective study, 165 patients (161 children and 4 adults) were operated on in four EU centers (Paris, Innsbruck, London and Oulu) from May 1st, 1998 to January 31st, 2002. Indications included correction of dyssynostotic deformities (n=159), reconstruction of bone defects following trauma (n=2), tumor removal (n=2), and treatment of encephalocoele (n=2). Plates used were 0.8, 1 or 1.2 mm thick and screws had an outer (thread) diameter of 1.5 or 2 mm and a length of 4, 6 or 8 mm. Tacks had an outer diameter of 1.5 or 2 mm and a length of 4 or 6 mm.
Intraoperatively the devices were easy to handle and apply and provided stable fixation apart from two cases. Postoperative complications occurred in 12 cases (7.3%), comprising infection (n=6), bone resorption (n=4), diabetes insipidus (n=1), delayed skin wound healing/skin slough (n=2), and liquorrhea (n=1).
Accordingly, SR-PLGA 80/20 (Biosorb) plates and screws can be used safely and with favorable outcome in corrective cranioplasties, especially in infants and young children.
Keywords:
Bioabsorbable, biosorb, bone, fixation, polylactide, polyglycolide, self-reinforced

P097

Semiconductor based electronic nose in diagnostic of wound pathogens

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**Purpose:** Electronic noses (e-noses) that are capable to recognise the features of the odours have been successfully introduced in specific areas in practise, e.g. evaluation of foodstuff quality, detection of hazardous gases and even diagnostics of certain diseases. We demonstrate the capabilities of an e-nose in monitoring of the clinical infection of skin injuries. In this paper we describe the work carried out in Lithuania at Vilnius Semiconductor Physics Institute and Kaunas University of Medicine.
**Material and methods:** Our present study deals with the relationship between the features of the headspace volatile compounds detected by the e-nose and the type of pathogen. In the tests, we mainly used the most common wound pathogen - s.aureus. S.aureus was cultivated in Mueller-Hinton agar gel medium for 24 hours. Fourty-six samples of S.aureus in Mueller-Hinton agar gel medium (research group) and ten samples of pure Mueller-Hinton agar gel (control group) were analysed. The headspace air was analysed by the e-nose. Original graphical images based on the response of the e-nose were composed for the featuring of the sample smell.
**Results:** A response of the e-nose sensors was detected for all the samples of the cultures. It is demonstrated that the artificial features composed of the sensor signals are dependent on the contents of the culture. Presence of S.aureus correlated with the specific features of the e-nose outputs. It is also recognised that the e-nose outputs are dependent on the age of the culture.
**Conclusion:** We conclude that the e-nose technology is promising in the rapid or instant diagnosis of the wound infection and pathogen identification. In this early stage of the study it is necessary to determine the effectiveness of the recognition/prediction of different pathogens by the e-nose. The result of these developments might offer a number of significant advantages over existing technologies.

P098

Cross-linked gel containing heparin and alginate maintains bFGF molecules to accelerate wound healing

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Background
We have developed an alginate gel cross-linked with covalent bonds for regeneration of dermis, nerve, and bone. Recently, a novel matrix (H/A gel) which consists of heparin and alginate covalently cross-linked with ethylenediamine, was designed. It can stabilize and release biologically active bFGF for 1 month, which is one of the heparin-binding growth factors. In this study, we compared the H/A gel with bFGF and the alginate gel with bFGF (simple entrapment) in wound healing using a rabbit ear skin defect model.
Methods and materials
Sixteen young adult male Japanese white rabbits (2.5-3.0 Kg) were used. A circular skin defect 10 mm in diameter was made in the right ear with scalpel to the depth of bare cartilage. Wounds were covered with H/A gel containing 0.1 μg of bFGF or alginate gel containing 0.1 μg of bFGF. Day 9 after surgery, we calculated the epithelization gap and granulation area of the wounds.
Results
Wounds covered with H/A gel containing bFGF had a significantly shorter median epithelial gap compared to those covered with the alginate gel containing bFGF. There was no significant difference in granulation tissue area between the two groups.
ConclusionbFGF is known to promote proliferation of keratinocytes, endothelial cells, fibroblasts and vascular smooth muscle cells. It stimulates angiogenesis and granulation tissue formation. The results of this study suggested that the bFGF was immobilized in the H/A gel for a longer time, while the bFGF-impregnated alginate gel released most of the bFGF with an initial high burst effect, and soon the local concentration of bFGF

decreased below the therapeutic level. H/A gel with bFGF may be a promising dressing material for wounds with impaired healing.

P099

Preoperative evaluation of nutritional end immunological status in wound healing

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Introduction: Wound healing is very important in surgical procedure. Wound is profound disruption of the environment and architecture of skin. The restoration of normality ( healing) involves a sequence that includes coagulation, inflammation, angiogenesis, epithelisation, fibroplasias, matrix deposition and contraction. The process of wound healing is under the great influence of many factors. One of them is the nutritional and the immunological status of the patient.
M&M: In this study we included 15 patients with split skin grafting. We evaluate preoperative level of albumin and total lymphocyte number- parameters of nutritional and immunological status. Postoperatively we measure the period of wound healing on the donor sites. “The test of foaming with H2O2” was used to determine the days of epithelisation.
Results: There was significant statistical correlation between albumin and the days of epithelisation with t = 2.55 and p=0.02. The results for the total lymphocyte number t = 14.45 and p = 0.00000 , indicate very high statistical correlation between total lymphocyte number and day of epithelisation.
Conclusion: Albumin and total lymphocyte number are important parameters for delay wound healing. A detailed knowledge of healing mechanisms allows surgeons to influence healing and anticipate and prevent problems of infection or excessive repair.

P100

GRO-1 (KC/MIP2) in burns; possible link between lipopolysaccharide binding protein (LBP) and innate immunity in rodent partial thickness burns

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Purpose:
Infected burn wounds often result in high morbidity and mortality. Lipopolysaccharide-binding protein (LBP) is an important part of the innate immune system’s response to Gram-negative bacteria. Among others, chemokines such as GRO-1 (KC/MIP2) are known to play an integral part in neutrophil chemoattraction. Earlier, Affimetrix® gene chip analysis of burn wounds in LBP-KO mice compared to wild types (C57BL-6) revealed a 50-fold up regulation of GRO-1 intradermally. We found evidence of intradermal and peripheral changes of neutrophil chemoattraction due to the absence or presence of LBP.
Methods:
18 female LBP-KOs and corresponding C57BL-6 mice were divided into 3 groups randomly; every animal received a 25% TBSA burn wound, grade IIB. After 24, 48 and 96 hours skin samples for intradermal PCR, MPO (myeloperoxidase assay) analysis, as well as peripheral blood samples for Hemavet® analysis were taken.
Results:
Except for IL-6 which remained high in C57BL-6 animals at 48 and 96 hours, GRO-1, TNFa, and IL-10 gene expression (standardized for GAPDH) showed undulating curves over time, with highest readings at 24hrs and lowest at 48 hrs postburn. Intradermal MPO readings were higher in LBP-KOs at 24 ($p<0.05$) and 96 hours than in wild animals. Total white blood cells at 0 hours were unchanged in both groups, monocytes showed no difference, lymphocytes were lower in C57BL-6 mice (not significant), but half as many peripheral neutrophils in LBP-KOs were found.

Conclusion:
Even though at 24 hours lower numbers of peripheral neutrophils in LBP-KOs were found, higher readings in MPO analysis resulted, indicating more neutrophils intradermally. Neutrophils are known to play a central role in orchestrating the immune answer. By missing the ability to produce LBP, neutrophil migration and possibly activation seems to be changed in our experimental design, topically and systemically.

P101

Downregulated fibrillin expression during wound healing in humans

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Purpose:
Fibrillins 1 and 2 are large glycoproteins which together with the transforming growth factor β (TGF-β) - binding motifs form the scaffold of microfibrils important in the connective tissue integrity. It has recently been shown that microfibrils and the other major elastic fibres component - elastin - are disturbed in scars and keloids. We therefore speculated that fibrillin-1 can play a role in the late events of cutaneous healing. The purpose of the study was to address the question of whether the fibrillin-1 expression can be changed in the course of a wound healing in humans.
Materials and methods:
The study was conducted on 10 wound biopsies from 10 volunteers. The biopsies were taken on days 3, 7, 10, 14, and 21 of healing, frozen in liquid nitrogen, sectioned, and processed with an antibody against fibrillin-1 for immunochistochemical analysis.
Results:
The immunofluorescence of wound specimens revealed that fibrillin-1 expression is dramatically decreased in the migrating epidermal tongue, with the beginning soon after injury.
Conclusion:
Fibrillin-1 has been shown to play a role in the regulation of TGF-β activation and signaling as well as in fine tuning of growth factor signals in the developing embryo. It was also suggested that fibrillin-1 is the major contributor to dermal elastic fibre construction during the wound repair process. Our observation of fibrillin-1 downregulation seems to be concordant with these studies, and shows that this protein plays a role in the regulation of epithelialization during skin healing in humans.

P102

Treatment of full-thickness skin defect with concomitant grafting of 6-fold extended mesh auto-skin and allogeneic cultured dermal substitute

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Purpose: Allogeneic cultured dermal substitute (CDS) is able to produce various cell growth factors and extracellular matrix components necessary for wound healing. The aim of this clinical study was to evaluate the potency of an allogeneic CDS as a biological dressing to facilitate taking and epithelialization for highly extended mesh auto-skin grafting.
Methods: Allogeneic CDS was prepared by seeding fibroblasts onto a two-layered spongy matrix of hyaluronic acid and atelo-collagen. Evaluation was conducted in nine clinical cases with extensive deep wounds, including deep dermal burns (5 patients; age, 39-81 years) and necrotizing fasciitis (3 patients; age, 71-88 years). Extended mesh skin grafting was applied to the debrided wound, on which CDS was placed. A conventional ointment-gauze dressing was used to protect CDS. CDS was applied repeatedly at intervals of 5 to 7days for a period of 3 to 6 weeks.
Results: Grafted skin was found to have taken completely in all cases. Epithelialization from the strips of mesh

skin was observed within 1 week when wound conditions were good. Granulation tissue with high vascularization was formed between the strips of mesh skin and their surface was smooth and flat. On most of the wound surface, epithelialization was completed within 3 to 4 weeks. Regenerated skin in the grafted area was soft and thin,showing excellent clinical results.
Conclusion: The conventional treatment for deep wound is surgical closure with auto-skin grafting. In cases of burn injury and necrotizing fasciitis of large size, highly meshed auto-skin grafting should be employed due to insufficient donor area, although in the case of victims aged more than 70 6-fold extended mesh auto-skin often fails to take and results in poor epithelialization. Concomitant grafting of highly meshed auto-skin and allogeneic CDS would thus be a promising therapeutic procedure.

P103

Immune aspects of wound healing after priming GM-CSF: An immunohistochemical survey

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**PURPOSES:** The presence of an intact T-cell immune system is essential for a normal wound healing. CD4 and CD8 cells provide the maintenance of cellular immune response. Glucocorticoids impair cellular immune response by inhibiting T-cell proliferation.Granulocyte macrophage colony stimulating factor (GM-CSF) leads to immunestimulation by increasing the levels of circulating CD4 and CD8 cells. GM-CSF priming in immunosuppressed rats was shown to improve the wound healing parameters and immune profile. This study was designed to investigate the role of GM-CSF on the healing of random flaps and reveal the effects on wound healing immunohistochemically using monoclonal antibodies for CD4 and CD8.
**MATERIAL and METHODS:** 72 rats were randomly divided into three groups:
**Group I (Control group)**, received saline.
**Group II**, received systemic methylprednisolone + received saline.
**Group III**, received systemic methylprednisolone + received GM-CSF.
After subcutaneous injections were applied to the flap incision lines for 2 days, modified McFarlane flaps (6x3 cm) were elevated. Following elevation, flaps were returned to their recipient bed and continously sutured into place and injections were applied on 1st, 2nd, 3rd, 4th and 5th postoperative days.
12 rats in each group were sacrificed on postoperative days 7 and 14 and tissue samples were taken. The samples were evaluated immunohistochemically using monoclonal antibodies for CD4 and CD8.
**RESULTS:**Immunohistochemical evaluation revealed parallelism with changes of immune profile inhibiting effects of glucocorticoids and improving effects of GM-CSF on random flap healing were confirmed using immunohistochemistry.
**CONCLUSION:**To restore lymphocyte function using proinflammatory cytokines before injury is important for wound healing and prevention of immunosuppression. The positive effects of GM-CSF in glucocorticoid treated animals suggest that GM-CSF may be useful for preparation of skin sites before surgical procedures and as a therapeutic agent in surgical wounds on risky patients.

P104

New experimental composite flap model in rats: gluteus maximus-tensor fascia lata osteomuscle flap

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Experimental animal models need to be developed for studies of composite flaps that have often recently been used for defects of both bone and soft tissues. A consistent anatomy, simple surgical technique, and reliable

blood flow are essential for the success of experimental flap studies. Here we propose a gluteus maximus-tensor fascia lata osteomuscle flap in rats as a model of these qualities. Gluteus maximus and tensor fascia lata muscles and the adjacent iliac bone segment were combined as a lateral circumflex femoral artery-based flap. To test the reliability of this composite flap, three types of composite tissues were harvested and replaced: osteomusculocutaneous flap, osteomuscle flap, and osteomuscle composite graft. The osteomusculocutaneous flap was elevated by including a skin island over the gluteal region. The osteomuscle graft was formed by deliberately dividing the vascular pedicle of the osteomuscle flap. Direct observation revealed complete necrosis of the skin islands in all osteomusculocutaneous flaps. Microangiography of the flap demonstrated that both muscles and the attached bone were supplied by the pedicle. Dye studies with nitro blue tetrazolium (NBT) and India ink demonstrated dye uptake in both muscle and bone components in osteomuscle flaps. Histological examinations also demonstrated the viability of both tissues only in the flap group. Bone scintigraphy performed in flaps on postoperative day 7 demonstrated radionuclide uptake, confirming perfusion of the bony segment. The gluteus maximus-tensor fascia lata osteomuscle flap is a reliable and simple model for composite flap studies that offers the following advantages: 1) it is a new composite flap which includes bone, 2) it can be dissected easily with the naked eye, without using the microscope, 3) it has a long pedicle for flap displacement, and 4) it is a small animal model.

P105

A rat fascial flap for repair of abdominal wall defect

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Various fascial flap models have been described in rats. The most commonly used fascial flap is the superficial epigastric pedicled one prepared in the groin area. The purpose of this study is to use the fascial flap which is pedicled on the superficial inferior epigastric artery and vein to reconstruct the abdominal wall defect.
Twenty Wistar rats weighing 200 to 250 gram were used in the experiment. In five rats the vascular anatomy of the groin and proximal thigh region was determined by anatomic dissection. The course and location of the superficial inferior epigastric artery and its relation with the femoral artery were identified. The flap is bounded medially by the outer border of rectus sheet, laterally by the anterior axillary line, and superiorly and inferiorly by transvers lines passing at the level of xyphoid process, and the pedicle respectively.
The experimental design consisted of three groups. Each group consisted of five rats. In the first group, a 1x2 cm. defect was created on the contralateral infero-anterior abdominal wall, and after harvesting based on the superficial inferior epigastric artery and vein, the flap was transposed to the contralateral defect. In the second group, a 2x3 cm. defect was created and reconstruction performed in the same manner. In the third group, as a control, a 1x2 cm. defect was created and kept unrepaired. Two rats from each group were evaluated on postoperative day 7, and three rats on day 21. Macroscopic, histologic, and microangiographic studies were performed for all rats. The results showed that the experimental groups survived totally and no defect was reported. In the control group the defect persisted.
The authors conclude that the superficial inferior epigastric arter and vein pedicled island fascial flap is a simple and reliable flap model to reconstruct abdominal wall defect.

P106

Reinforcement of subcuticular continuous suture closure with surgical adhesive strips and gum mastic: Is there any additional strength provided?

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**Introduction:** The absorbable continuous subcuticular suture is frequently used to close surgical incisions. Surgical adhesive strips are also placed over the wound for various reasons but mainly to decrease the likelihood of unwanted wound separation. In this study the burst strength of suture versus suture and strip with or without

gum mastic was studied
**Materials and Methods:** The back of two fresh cadavers were used. Fifty 3cm full thickness incisions were created and were closed in five groups: Group 1: 4/0 absorbable subcuticular continuous suture; Group 2: In addition to suture horizontally placed adhesive strips; Group 3: Same as Group 2 except gum mastic was applied prior to strip application; Group 4: Surgical adhesive strips alone and Group 5: Surgical adhesive strips with prior application of gum mastic. The burst strength of each wound was measured by using tensilometer and the force necessary to separate the wounds were recorded.
**Results:** The mean separation force required for each group was: Group 1: 14,17 kg; Group 2: 14,37; Group 3: 15.39, Group 4: 1,52 and Group 5: 3,85. Group 4 and 5 showed significantly less burst strength than sutured used groups (Group 1, 2, 3). There were no statistically significant difference between groups 1,2 and 3. When compared with Group 4, Group 5 required markedly more force to separate the wound (p=0.001).
**Conclusion:** When wound closure was achieved with sutures no additional strength was provided by reinforcement with additional strip. Gum mastic significantly increased the adherence of strips and this seems to be especially important when strips are the only means of wound closure. Application of surgical strips over a sutured incision can avoid other means of dressing and can block transient bacterial contamination. However, strip reinforcement does not provide any additional strength in this wound separation model.

P107

Evaluation of distant sentinel skin allografts for monitoring of rejection of limb transplants

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Previous studies have demonstrated that composite tissue transplants such as limbs reject more slowly than skin transplants. This has led to the hypothesis that a simultaneous skin graft may act as an effective marker of limb rejection. The aim of this study was to test the predictive value of a sentinel skin graft as a marker of rejection, using a hind limb transplantation model in rats. Lewis rat recipients received a hind limb transplants alone from Brown Norway donor (control, n=15) or combined with a full thickness 15 $cm^2$ sentinel skin graft (n=45). All animals received drug therapy (FK506, MMF and Prednisone) for 6 weeks, then treatment was ceased entirely. Rejection of the skin graft and limb skin, was assessed by both visual and histologic grading system. Detectable rejection (grade 1) was observed 1.35 **±** 1.5 days earlier in the sentinel skin graft than in the limb skin ($p < 0.0005$) and clearest rejection (grade 2) appeared 0.91 ± 1.58 days earlier in the sentinel skin graft ($p < 0.005$). The average histologic grade for early rejection of the skin graft was 1.46 and 1.08 for the limb skin ($p < 0.05$). These findings confirm a visual and histological delay in rejection of the limb skin compared to a distant sentinel skin graft. Skin grafts transplanted simultaneously with hind limbs can be a useful marker of early rejection

P108

The effects of enoxaparin on inflammatory cells: an experimental study in the rat cremaster muscle flap

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**Objective:** The potential anti-inflammatory effects of heparin compounds have been supported by several experimental and clinical trials. However the effects of heparins on inflammatory cells' dynamics have not been demonstrated. This experimental study investigated the effects of different dosages of enoxaparin (Lovenox), a low molecular-weight heparin, on inflammatory cells in the rat cremaster muscle model for intravital microscopy.
**Methods:** Twenty-four male Sprague-Dawley rats were divided into four groups. In Group I (n=6): control-no agent was given, in Group II (n=6): enoxaparin (2mg/kg s.c.), in Group III (n=6): enoxaparin (4mg/kg s.c.), in Group IV (n=6): enoxaparin (8mg/kg s.c.) were injected before cremaster muscle island flaps dissection. Following flap dissection, all animals were observed under intravital microscopy and the numbers of rolling,

sticking, and transmigrating neutrophils, numbers of rolling and sticking lymphocytes and endothelial edema index were measured at 2, 3, 5, and 7 hours following enoxaparin injection.
**Results:** Statistical analysis revealed that there is not any significant difference between control (Group I) and each enoxaparin injected groups (Groups II,III and IV) in the number of rolling neutrophils at any time of observation. However the number of rolling neutrophils in Group II is significantly higher than Group III and Group IV at the $7^{th}$ hour of observation ($p<0.01$). The number of sticking and transmigrating neutrophils, the number of rolling and sticking lymphocytes and edema index did not show any statistically significant difference among groups.
**Conclusion:** Any doses of enoxaparin (2, 4, 8 mg/kg) does not effect the number of rolling neutrophils compared to the control group in the rat cremaster muscle model. However higher doses of enoxaparin ( 4 mg/kg and 8 mg/kg) significantly decreases the number rolling leucocytes compared to lower dose of heparin (2 mg/kg).

P109

The Role of Matrix Metalloproteinase-2 (MMP-2) in the ischemia-reperfusion injury and the damage reducing effect of Doxycycline as an inhibitor of MMP-2

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**The aim of this study** was to determine whether Matrix Metalloproteinase (MMP-2), known as Type-IV collagenase, would have any effect on ischemia-reperfusion injury and inhibition of this enzyme with Doxycycline hyclate would reduce in the tissue damage.
**Materials - Methods:** Two different experimental models were used for this study.100 Spraugley-Dawley rats were randomly allocated into two groups (Doxycycline and Control). In each animal, left rectus abdominis muscle flap was subjected to ischemia-reperfusion whereas right rectus abdominis served as sham . Cytopathologic, scintigraphic and Nitroblue Tetrazolium staining (NBT) were used to evaluate behavior of the pro-MMP-2 at the certain time of reperfusion injury (0, 4, 12, 24 hours) and viability of the muscle at 24 hour after the reperfusion. In addition, Six male Spraugley-Dawley rats were assigned into 2 groups. The cremaster muscle flap of rats in Group I (Control) only underwent ischemia-reperfusion (4 hours global ischemia and 2 hour reperfusion). In Group II (Doxycycline), rats were given Doxycycline hyclate , which is started prior twenty - four hours to ischemia. Neutrophil rolling and adhesion in 14 post-capillary venulles of each group were assessed with “In-vivo Microscopy” technique at the certain time of reperfusion (5, 15, 30, 60, 120 minutes) and before the ischemia.
**Results:** Rats given Doxycycline hyclate were found to have less adherent and rolling neutrophils than the rats belong to the control. The percentage of muscle viability was also higher in Doxycycline group than the control (for scintigraphy $p<0.01$, for NBT staining $p<0.001$). Cytopathologic assessment of the muscle speciemen revealed that pro-MMP-2 and neutrophil density ($p<0.001$) were likely to increase in the control group during the first 12 hours of reperfusion.
These data showed that MMP-2,also known as Type-IV Collagenase, may play an important role in the reperfusion injury and MMP-2 inhibition seems to ameliorate the reperfusion injury.

P110

Experimental comparison of fibrin glue and traditional techniques for skin grafts fixation

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Skin grafting has been applying more than 140 years. The traditional methods application of skin graft fixation often has unsatisfactory results. Fbrin glue application will improve these results An experimental study was designed to reveal fibrin glue advantages in skin grafting compared to skin fixation with sutures and pressure dressing. A total of 90 male Wistar albino rats, weighing between 250 gm and 300 gm, were used for this study. Animals were anesthetized with intraperitoneal sodium thiopental (50 mg/kg). The split-thickness skin graft was harvested from the dorsa. The dorsum fascia was exposed, dissected and removed with neck muscles baring. Split skin graft was fixed by: 8 sutures; pressure dressing; fibrin glue. The teflon ring was implanted and covered

by polyethylene sterile film. The skin graft taking and wound healing were estimated by the macroscopic analysis method and histological examinations on the 3, 5, 7, 14, 21-th days after grafting. Complications weren't observed. In all cases 100% skin graft taking has been got. In rats with the spliting skin graft fixation by sutures and pressure dressing skin hyperemia around teflon ring was observed, it appeared on 2-d day and it was more expressed by 5-th day and disappeared by 14-th after operation day. The 100% of rats with the skin graft fixation by sutures and 50% with pressure dressing had it. But only 33% of rats with the fibrin glue skin graft fixation had hiperimia. Histological examination have shown that fibrin glue elements appeared on 3-d after operation day and disappeared on 5-th day; fibrin glue application promotes early and intensive newformated capillaries growing into skin graft, inflammatory infiltrations decrease, prevents skin graft's fibrous transformation and muscle tissue fibrosis. These facts allow to confirm about quality and quantity advantages in fibrin glue application for skin graft fixation.

P111

Treatment of chronic leg ulcers

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Purpose. Chronic leg ulceration is a well known pathology described long ago that troubles a lot the sick as well as the care givers and gives a very poor response to the treatment. Leg ulcers of different etiology disable up to 1% of adult population in the world and up to 5% of those over 65 years old.
Material and methods. Willing to compare the speed of ulcers healing, applying both conservative and surgical methods of treatment as well as to estimate the influence of ulcers and their treatment on the quality of patients' life, we held the prospective research on course of the disease of 71 patients, treated in KMUH Department of Plastic surgery and Burns during the period of time from 2001 to 2005. All those patients were questioned repeatedly after 6 months.
Results. We found that the surgically treated patients spent averagely 18 days in the hospital. The pain of the wound decreased statistically reliably ($p<0.05$) only in the group of patients who were operated on. The regression of pain in this group was also confirmed by the reduced amount of the use of analgetics indicated on the second questioning ($p<0.05$). We also found that the intensity of pain was associated statistically reliably with the size of the ulcer - the larger ulcer, the more intensive pain, but the time spent on the treatment of the ulcer did not depend on it's size.Conclusions. About 64,81 % of the patients with ulcers may experience total recovery in 2-3 weeks. Covering the ulcer with the split skin graft respond positively on the quality of life of the patient (his sleep, emotions) faster than conservative treatment alone, which helps to save patient's money and the money for the treatment of ulcers assigned by the state.

P112

Thermographic infrared imaging in free flap breast reconstruction after skin sparing mastectomy

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Purpose Thermographic infrared (IR) imaging is a useful non-invasive diagnostic tool in monitoring skin blood flow. It is an effective method to locate perforator vessels and has been used in the assessment of blood supply of flaps. We hypothesized that it might also be useful in predicting wound edge necrosis in patients undergoing skin sparing mastectomy and immediate breast reconstruction with a free DIEP or TRAM flap. A study was designed to preoperatively map the perforators of the breast and abdomen, and to try to predict the possible areas of compromised skin blood flow.
Material and Methods Twenty consecutive patients were included in the study. Thermographic images of the cancer bearing breast and the whole abdomen were taken preoperatively, immediately after the operation, and on the 5 and 28 days postoperatively. A cooling test was used in the first and last imaging sessions. This allowed to localize cutaneous perforators which appeared as hot spots on thermocamera images. A map of the perforators was preoperatively drawn with a permanent marker pen on the patient's skin.

Results With help of local contact cooling, the location of perforator vessels on both the chest wall as well as on the abdominal region was readily determinable, and the finding could be confirmed during surgery. Preserving of the found perforator vessels seems to help to prevent breast skin envelope or abdominal wound edges necrosis. Images taken during the follow-up period showed normal flap and donor site temperatures in cases, where there were no flap or donor site failures. Detailed analysis of the images will be presented.
Conclusion Thermographic IR imaging can be used for locating perforator vessels in free flap reconstructive surgery and seems helpful in the evaluation of flaps and donor site survival in postoperative period.

P113

Partial versus complete resection of the corrugator muscles in the surgical treatment of migraine headaches

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**Purpose:** The resection of the corrugator muscles is a new treatment option for migraine headaches. This prospective, randomized study was conducted to compare the efficacy of a complete, transpalpebral resection of the corrugators with a partial removal.
**Material and methods**: 64 patients (sex ratio 57 female:7 male, age range 21-61) with migraine headaches were randomized for either complete (C) or partial (P) corrugator resection. Botulinum toxin injections into the corrugators were performed 8 weeks preceeding the operation as prognostic indicator. Postoperative follow-up period was 12 months.
**Results:** Complete remission of migraine symptoms was achieved in 27% (P) vs 32% (C), improvement of more than 50% was noted in 34% (P) vs 30% (C), positive alterations of less than 50% were found in 11 % (P) vs 16% (C). The operation was classified as a failure by 29% (P) vs 24% (C) of all patients. Increasing age was a negative prognostic indicator.
**Conclusion:** The hypothesis that the complete removal of the corrugator muscle would increase the chance for the delayed re-emergence of migraine headaches was not verified. The advantages of partial muscle resection (less operating time, decreased risk of nerve damage, postoperative swelling) suggest this method to be a highly feasible alternative with comparable success rates.

P114

Septorhinoplasty in South Indian population: An analysis

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This study aimed to evaluate scar problems and nasal airway after external septorhinoplasty in the South Indian population having severe septal deviation ,large and thick alar cartilages and thick,dark ,and oily skin and to analyze the techniques and reduce the scarring and good nasal airway with good septal correction.
The investigation was conducted in ENT research institute and private research institute of the author in Chennai. A total of 156 South Indian patients who underwent external septorhinoplasty were included in the study. All the patients underwent surgery using the external approach, in which bilateral alar marginal incisions were connected by a step-ladder transcolumellar incision . The ‘A’ stitch (Golden stitch) was used for approximating both alar domes. Scoring of the thick fibrofatty layer was done in 66 % of the cases.At completion of the procedure, a single layer closure of the columellar incision was performed.
Postoperatively, the ala, septum, nasal tip, scar was evaluated subjectively by means of a patient questionnaire, and objectively by clinical examination and comparison of the close-up pre- and postoperative anterior, lateral and basal view photographs.. Subjectively, 82.5% of the patients felt satisfaction with the results. Unequal ala was noticed in 3% but acceptable, and 5% had alar dimple. Objectively, the columellar scar was satisfactory in 87% of the cases($p < 0.005$) and good septal correction in 76%. The use of a deep 5/0 prolene(polypropylene) suture significantly decreased the incidence of scarring.

P115

Temporal dissection of sequential cardiovascular autonomic nervous alterations during programmed 20-second apnea in rats

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**Purpose:** Long-term hypoxia results in hemodynamic breakdown in humans; however, intermittent hypoxia causes sympathetic overactivity and interferences of peripheral vasomotor control. The purpose is to explore the sequential cardiovascular neural regulations in response to hypoxia during apnea.
**Materials and methods:** A programmable apnea model was developed in anesthetized rats, in which a 20-second period of apnea was divided into the early (2.0 to 7.9 second), middle (8.0 to 13.9 second), late apneic phase (14.0 to 19.9 second), and reventilatory phase (20.0 to 25.9 second).
**Results:** Arterial pressure increased in early apneic phase and returned to the control level in middle phase. Significant hypotension developed in late apnea and deteriorated after reventilation. Interbeat interval increased mildly along the apneic event. The increase of pressure in early and middle phases was inhibited by propranolol (1.0 mg/kg) but provoked by phentolamine (2.5 mg/kg). The decrease of arterial pressure in late and reventilatory phase was reversed, at least in part, by phentolamine. Atropine did not produce discernible effects in the arterial pressure. Power spectral analysis of arterial pressure variability demonstrated significant increases of the low-frequency and normalized high-frequency power after reventilation.
**Conclusion:** The sympathetic activity is provoked during and after a hypoxic apnea. The immediate pressor effect is related to an inotropic response of cardiac sympathetic regulation whereas the late depressor effect is associated with a failure in vasoconstrictive response of vascular sympathetic regulation. Significant overactivity in α- and β-adrenergic functions develops after recovery of ventilation.

P116

The effects of melatonin on skin of pinealectomized rats

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**The aim** of this study is to test the effects of melatonin (Mel), the chief secretory product of the pineal gland and a highly effective antioxidant, on skin tensil strength, elastic and collagen fibers and dermis/epidermis ratio in rats.
**Material method:** Eighteen rats were divided in 3 groups (n=6). Group 1 (sham) was treated only vehicle (i.p.). Group 2 was treated 4 mg/kg Mel. Group 3 was treated with 40 mg/kg Mel. Animals in the experimental group were treated with melatonin per day for 6 weeks. In group 2 and 3, 1 year later than pinealectomy, tissue samples were taken from dorsal skin of rats for histophathologic exam and measurement of tensile strength. After this procedure; 4 mg/kg melatonin was administrated in group 2, and 40 mg/kg melatonin was administrated in group 3 per day for 6 weeks.
At the end of the the sixth weeks tissue semples were taken from rats dorsal skin in all groups for histopathologic exam and determining tensile streight.melatonin medication for either group was maintained for another six week. On postoperative 12 th week 3 rd group tissue samples were taken and examined histopathologically.
**Results:** One year later, the reduction in the tensile strength of dorsal skin of rat in group 2 and group 3 which **undocore** pinealectomy before was statistically important. Histologic examination of skin sample taken from group 2 and 3 also revealed that degeneration of elastic fibers, destruction in collagen structure and decrease in dermis/epidermis ratio according to control group. **Conclusion:** Melatonin repletion treatment enable tensile strength of skin to get back its original status and recovery in histologiccal findings. Repletion treatment may reverse deformities such as skin laxicity and wrinkless occuring as a result of aging.

P117

Our experience in transsexuals surgical treatment

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Surgical treatment of transsexuals is a time-consuming multiple step process. A patient may choose to refuse further intervention at any stage of sex transformation if he or she believes that the results are sufficient for a certain degree of social adaptation.
Since 1997 we have performed 8 male-female transformations, 33 female-male transformations. A total of 54 masculinizinization and 16 feminization mammoplastys, 28 hysterectomies, 5 testicular endoprostheses. We have simultaneously performed a hysterectomy from miniapproach, masculization mammoplasty, appendectomy.Surgical technic of musculinisation mammoplasty depends on the size of breast and nipple-areolar complex. We used endoprotesis “Polytech Silimed” for feminisation mammoplasty. Periareolar minisection approach was used for mammoplasty. Testicular endoprothesis “Polytech Silimed” was implanted in external labium pudendae for a female-male transformation. We also performed 2 neophalos formations by transposition of skin-mascular flaps. Flaps were taken from musculus latissimus dorsi and their vessels were connected with low epigastric vessels by microsurgical technic. We have also performed 5 phaloplastys with the use of femoral flaps. This is our method of preference. We used heparin with APTT control after each operation.
The achievement of promising functional results as well as appearence after mammoplastys in 100%. of patients is due to periareolar section. One patient had a complication of falloplasty - venous trombosis of neofallos. Venous anastomosis were reconstructed on the second day post operation.
Good post-operative wanted aesthetical results and decreased complicational rate were achived by use of minicections and microsurgery technic. Now we provide preparation for the further more difficult operative stages of sex correction based on home and foreign experience of sexual handicapped subjects.

P118

One-stage phalloplasty using free chimeric combined flap

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Purpose: Reconstruction of the male external genitalia is a challenge to the plastic surgeon when appearance, length, sensation and stiffness are considered in addition to the ability to pass urine. The goal of our reconstructive procedure was to offer the patient restoration of form and function similar to normal as possible.
Material and methods: We present a one-stage phalloplasty technique using third finger flap from non-dominant hand and forearm flap for cover and bulk (free chimeric combined flap). The urethra is constructed from vascularized skin random double flaps of the finger, with the tip of the finger simulating glans penis. The dorsal digital nerve was sutured to the pudendal nerve provided sensation. Adequate stiffness for intromission was provided by the metacarpal bone and phalanges with the respective joints providing enough laxity. We performed penile reconstruction/construction in 3 cases with a follow-up of 5 years: two males (penis had been subtotally amputated at the root of the shaft due to carcinoma); one female-to-male transsexual.
Results: All operations were successful, and the patients were satisfied with the results. Erogenous sensation returned to the reconstructed penis. Coital function was satisfactory, and encountered no difficulty in urination (laminar flow). The present technique gives rigidity with laxity, but will not pose an embarrassment for the patient because of permanent state of erection or sudden deflation. The donor areas morbidity was moderate and is acceptable.
Conclusion: This technique gives excellent functional results with a reduced number of surgical procedures and can significantly improve the quality of life. This method provides a new tool for phalloplasty because permits maximal recovery of biomechanical functions of this organ.

P119

Free cloven urothelial graft for the creation of neovagina vestibulum

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One of the main constituents in social adaptation of patients with male transsexualism is the creation the neovagina vestibulum maximally close to anatomy normal neovagina vestibulum both by appearance and tissue texture. The creation of neovagina vestibulum with mucous line blanket is important aspect in neovaginal transformation by the way «male-to-female».
In order to perform neovagina vestibulum with mucous line blanket we usually use full-thickness urethral flap, which is taken from the abundance of distal part of urethra while the tissue dissection during neovagina plasty by the means of modified penile inversion. We cut out flap of required size and rotate it into the region between the external aperture of urethra and presumptive neoclitoris base. We have already used suggested technique in 16 patients with verified male transsexualism. In all cases good result was found. In 4 patients (ages 17,18,26 and 38 years old) for the first time in our practice we used an original technique of neovagina vestibulum plasty, which is lie in application of free cloven urothelial flap contained urotelium and submucous layer. For getting free cloven urothelial graft we use precision dissection of the abundance of distal part of urethra, than put it onto de-epidermisated skin base in the recipient area. In that way we performed the vestibulum of neovagina in 2 cases and minor lips of pudendum in 2 cases. The size of free cloven urothelial flap averaged 25 $mm^2$. In all cases we registered full engraftment and good aesthetic result.

P120

A modification of incision graft technique for burn contractures

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Burn contractures are frequently encountered by plastic surgeons throughout their careers. As a result of high frequency of burn injuries and the inefficiency in the treatment, contractures are commonly observed during late stages. Planning of surgery and the outcome of these cases highly depends on the experience and knowledge of the surgeon.
Today, many techniques based on grafts and flaps are used to release simple skin contractures over joints. These techniques all have their own advantages and disadvantages. Along with the widely known advantages and disadvantages of the classic incision and graft technique, tissue excess and partial webbing are observed on proximal and distal flaps after the incision. On the other hand in order to completely release the contracture, the incision is elongated laterally more than necessary.
We modified the classical technique of incision and graft by adding four z plasties in order to prevent tissue excess and partial webbing on the distal and proximal flaps and to gain maximum release of the contracture by limiting of the incision line needed. In this technique, four z plasties were created, two of them with a common base on each corner of the incision line. With this technique limiting of the webbing after the incision is possible by switching the flaps. Avioding of the lateral extension of the defect and gaining maximum release with minimum defect was possible.
Satisfactory results were achieved in 6 patients with burn contractures who were admitted to our clinic during 2003-2004. We propose this technique is suitable for patients with burn contractures who require relaxing incision and grafting.

P121

Hydrocolloid dressings in use of advanced wound care of deep dermal hand burns

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**Purpose:** Burn injuries of hands appear more often than burns of other parts of the body. Hand is the main instrument in routine activity and is injured first. Deep dermal burns in hands, if treated not properly, may require skin grafting and very often result in hypertrophic scarring and develop contractures. Advanced wound care used

successfully in the wound care of chronic ulcers might become powerful tool providing moist wound healing and re-epithelisation of deep dermal burns.
**Material and methods**: A prospective randomized study was started in August 2002. Study was approved by Hospital Ethic Committee. Patients suffering deep dermal hand burns were randomized into 2 groups - group of active surgery and group of conservative advanced wound care. We analyze the data of twenty-four patients (thirty-one hand) with deep dermal hand burns treated with hydrocolloids. Patients we admitted to the unit of burns in Kaunas Medical University Hospital or consulted at out-patient clinic.
**Results:**The average age was 30.9±9 and ranged from 15 to 47. Six were females and 18 males. Right hand was injured in 17 cases, left - 14 cases. The average duration of treatment was 11.8±1.8 days. The end of the treatment was the complete epithelisation of the wound when no dressings were required. The wound dressings were performed every second or third day (average 2.6) and during the full course 4-8 (average 5.7) dressing changes were performed.
**Conclusion**: We conclude that hydrocolloids are effective in the treatment of deep dermal hand burns. Hydrocolloids promote epithelisation and enhance wound healing in acute traumatic wounds as well as in chronic wounds. Late follow-up is anticipated for the evaluation of scarring and hand function.

P122

Treatment of partial thickness wounds using polyurethanes with soft silicone

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**Purpose:** Wounds and defects of mixed depth are very common in plastic surgery. Advanced wound care of partial thickness defects allows achieve spontaneous epithelization thus reducing the total defect and minimizing surgical procedure. Partial thickness wounds require gentle dressing technique and special type of dressings capable to hold discharge, reduce pain and promote healing. Absorptive polyurethane foam dressings combined with soft silicones are the challenging alternative for treatment of partial thickness burns, donor wounds and second stage chronic ulcers.
**Material and methods**: A prospective pilot study started in October 2003. Fifteen volunteers suffering partial thickness wounds confirmed consent to use absorptive polyurethane foam dressings combined with soft silicones. Five had minor burns, five chronic ulcers and five required minor split thickness skin grafting due to traumatic defects. All wounds were investigated for bacterial contamination, and only patients with clean or low contaminated wounds were included. Fourteen patients were treated on out-patient basis. Visits to outpatient clinic were organized twice a week. Dressings on the time of visit by the decision of surgeon were changed or left intact. Additional therapy for chronic ulcers was administered according to the local protocol (pentoxiphylline, flavanoids and compression socks). No local or systemic antibacteric therapies were used.
**Results: A**verage age of patients with chronic ulcers was 55.8 years, for burns - 34.2 years, for donor wounds - 35.6 years. Average duration of treatment for chronic ulcers was 36.2 days, for burns - 13.4 days, for donor wounds 15 days. The end of the treatment was the complete coverage of the wound when no dressings were required.
**Conclusion**: Polyurethane foam dressings complemented by a wound contact layer of soft silicone stipulate gentle dressing change and reduce the pain during the procedure. Modified dressings are challenging alternative for treatment of partial thickness traumatic and chronic wounds.

P123

Our experience in establishing a local skin bank and the use of its cadaveric allograft for severe burns

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**Purpose :**Skin banking programme was set up in Singapore in 1998 to provide a ready source of allograft for patients with severe burns. The process and problems in establishing a local skin bank are described together with a 5-year retrospective review of skin allograft recipients to determine the efficacy of the programme.
**Methodology :** (i) Skin Banking set-up - Pertinent issues like logistics, quality assurance, donation rate and

public education will be discussed.
(ii) 5-year retrospective study - The profile of patients who received skin allograft since 1998 were reviewed according to age, sex, % total body surface area (TBSA) and presence of respiratory burns. Outcome of length of hospital stay (LOS) and mortality rate (MR) were evaluated retrospectively from 1998 to September 2003 to compare patients who had early complete excision and transplantation (study group) as opposed to those who received conventional staged excision and coverage (control).
**Results :** Of the 45 skin allograft recipients, whose average age and TBSA were 31.2+/- 11.9 and 54.1+/- 17.2% respectively, 28 patients (62.2 %) were male. Total MR was 28.9% and the average LOS was 52.1 days. Comparison between study and control group showed a significant decrease in MR and LOS by 29% and 10.2 days respectively.
**Conclusion :** The establishment of the skin bank has helped in the management of severe burn patients by facilitating early excision and allografting. Results were more positive with early complete excision which decreased MR and reduced LOS. It is therefore essential to have an ample ready supply of skin allograft for massive burn patients especially during event of mass disaster.

P124

Silver - coated dressing in treatment of deep 2nd and 3rd degree burns

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ABSTRACT : Silver - coated dressing (Acticoat) is one of the recent methods in treatment of burn wounds . We used this dressing in Motahary Burn Hospital -Tehran .
In this paper we compare the result of using Acticoat with traditional method in treatment of deep 2nd and 3rd degree burn wounds .
12 patients were selected , in 6 patients Acticoat was used and in others traditional dressing.
In each group 3 patients had more than 50% TBSA(total body surface area) and 3 patients had less than 50% TBSA .
In 6 th day infection was controlled by Acticoat . in 7th day pus and discharge reduced to less than 50% .
In 24 th day wounds were prepared for skin grafting and mean length of admition was 64 days for over 50% group and 35 days for less than 50% group.
The results of silver-coated treatment was significantly much better that traditional method.
All of patients with Acticoat survived but 2 patients with more than 50% TBSA died .
Therefore we conclude that using silver-coated dressing is cost-effective and life saving for deep 2nd and 3rd degree burns .
Keywords : nanocrystalline silver dressing - burn - dressing- infection

P125

Porcine dressings in muslim patients

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Introduction:
The use of biological and biosynthetic dressings has increased dramatically in recent years. However, the religious issues arising from the use of such dressings has not been adequately addressed. In the Yorkshire region, UK, almost 25% of the paediatric burns patients are muslims.
Purpose:
Determine views of the UK Muslim population regarding use of burns dressings containing porcine products.
Methods:
Questionnaire based survey of 200 muslims representative of the population treated in our hospitals.
Results:
The respondants ranged in age from 18-84 years with a 1:1 male to female ratio. Educational qualifications of the

population group included people with no formal education to post-graduates.
A large proportion of the sampled population would refuse dressings containing porcine products for themselves even if it was the best recommended treatment for their condition, reduced pain and reduced visits to the hospital.
A slightly higher proportion was agreeable to these dressings being used in their children particularly if it reduced pain in the child.
Groups with better education were more amenable to using the dressings.
Some would agree to use non edible porcine products like dressings and lotions.
Almost the whole sample felt that they should be informed of the presence of porcine products in the treatment they receive and felt it was the doctors' responsibility to make them aware of these facts.
Conclusion:
Use of porcine derived products is a very sensitive issue and resistance to its use anticipated.in the Muslim population. It is imperative that presence of porcine products be fully discussed with patients. If explained that the product is not orally consumed, a proportion of patients will be amenable to its use. Detailed discussions regarding increased comfort levels in children could help persuade parents to allow the use of these dressings.

P126

Heterotopic ossification of the elbow in severe burns patients: operative release and surgical tecnhique

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Although uncommon, complete ankylosys of the elbow secondary to eterotopic ossification results in severe disability.
We noted that the ossification can develope also in the elbow not burned, but also in the controlateral wich used for the skin grafting
In the literature the timing of the surgical treatment is not so clear.
We described the outcome of early excision of such eterotopic ossification in 5 elbows and 4 patients
1 have a severe compression of the ulnare nerve, with motor and sensitive pareshis
In according with other Authors we have divided the patients in three group according to the site:
Gruop A: with involvment only of the humero-ulnar joint ( 4 cases)
Group B: with involvement only of the proximal radio-ulnar joint
Group C: A+ B ( 1 case)
We describe the step of tecnique
We have a good satisfactory results even if 1 patients have done two intevention for an early recurrency, with a mean gain of extension of 80°
The neural nerve have been transposed anteriorly into the subcutaneous tissues in 3 elbows, and there was a good recovery for the ulnar compression
An elevated level of serum alkaline phosphatase or a positive of three-phase bone scan was not considered to be a controindication to early excision. In particular we considered the elbow pain as a marker for the timing of surgery. We use pre-operative 3-D CT scan.
We dont use radiotheraphy but only indometacin 100 mg/day for 3 weeks to prevent recurrency
In conclusion the mean of our work is to recognize the importance of an early surgery, as soon as the general and local condition can do, and an early and rigorous post-operative physiotheraphy, to restore the function of the elbow and improvment in quality of life

P127

Injury severity assessment and prediction of outcome in adult burned patients using Burn Scoring System Novi Sad

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The aim of this research was to compose a scoring system which could be used to determine the severity of patients condition during the hospitalization and the probable outcome of treatment.
Data concerning 174 patients which were treated at the Clinical Center Novi Sad more than 15 years old and hospitalized more than 72 hours were included in this study. Patients with electrical injuries were excluded. The mean age of patients was 45.57 years, and the mean burn size was 22.13 % TBSA. The incidence of inhalation injury was 43.22 %. Mortality rate was 21.05 %. Several risk factors were determined: age, burn size, burn depth, inhalation injury and presence of organ dysfunction/ failure. Multiple organ failure was present in 28.65 % of patients.
Burn Scoring System Novi Sad is based on estimation of basic variables( age, burn size and depth, surgical treatment) and estimation of variables of six systems( central nervous, respiratory, cardiovascular, gastrointestinal system and liver, renal, infection).The maximal value of total score is 134. Statistical evaluation of the system was conducted of the same group of patients. Area under the ROC curve exceeds 0.93. Overall accuracy in prediction of death based on multiple logistic regression exceeds 92 %.
Evaluation of clinical application of the scoring system was done in the prospective study involving 104 patients. Characteristics of this group of patients are similar to those in retrospective study. Mean total score for survivors was 18.58 and for nonsurvivors 49.29 ( $p < 0.01$). Overall accuracy of outcome prediction was 91 %. Weekly evaluation of patients demonstrate divergence in mean scores between survivors and nonsurvivors. By evaluating the obtained results it was concluded that application of Burn Scoring System Novi Sad was reliable for identification of burn injury patients at risk.

P128

Pediatric burns overview

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With the experience of over 10000 cases of pediatric burns treated in our clinic over more than 15 years (1988-2004), the article depicts some important general facts about pediatric burns regarding their frequency, prognosis and their trends in time. The article present some conclusions we obtained having treated these cases.
“The outlook for the burned child changed dramatically over the past 20 years. Expectations both for survival and quality of life after injury are now at unprecedented levels.” as Robert L.Sheridan said in 1998.
Burn is a dynamic situation for the individual and for the human society.
Variations of the mentioned parameters are analized and exposed, important aspects being emphasizes this way.
A brief and clear view through the epidemiological figures stands for the main ideas exposed: distribution of burns regarding age and sex, incidence, etiology, mortality, severity, changes and trends.
Lowering the incidence of pediatric burns, especially those caused by flame and electrocution is a fact that supports campaigns of prevention for this severe pathology. Improved surviving rate in pediatric burns , even in extensive burns is a remarkable result.
The future should aim toward reducing the incidence of scalds in young ages trough awareness campaigns and improving parental skills, building strong and experienced teams for pediatric burns, skin substitutes and specific strategies for very extensive burns.

P129

Role of plastic and reconstructive surgery in burn disaster

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The major burns injuries in spite of improvement and development of modern techniques in plastic surgery nowadays in some cases would result in huge disaster. In this paper a case will be discussed who return to an acceptable life after 19 very difficult operations. A 34 years old female was admitted to our center due to sever burn complications and deformities of her face, neck, trunk and upper extremities since 17 years ago. The etiology of burn was open flame with kerosene. The burn size was 54% total body surface area (TBSA). The First

operation was releasing of neck scar contractures because tracheal intubation and anesthesia was impossible. Other operations were ordered on importance of function of anatomical area. These operations were releasing of serious bilateral eyelids and lips ectropion and reconstruction of nose and breasts, resection of scar and skin changes of face, neck, chest by autograft, reformation and reconstruction of both hands fingers deformity and contracture. Finally we provided situation that she could somehow return to her normal life as better as possible. Before surgical operation because of horrible face she covered her face and body by scarf and Chadoor (clothes), but now she presents in society without covering and very happy and hopeful. Incidentally all of procedures and results have been shown by pictures step by step.

P130

The effectiveness of caloric value of enteral nutrition in patients with major burns

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The purpose of this study was to investigate the effectiveness of different caloric value of enteral nutrition in patients with major burns. Material and methods. The prospective study involved 103 adult patients treated at Kaunas Medical University Hospital for 10-80% body surface area 2B°-3° burns from January 1, 2001 till December 31, 2003 without respiratory tract injury. All patients received enteral nutrition during acute phase. After the treatment was finished, according to caloric value of enteral nutrition patients were divided into two groups: group A received more of 30 kcal/kg/24h, and group B received less than 30 kcal/kg/24h. Patients' mortality, complications rate and hospital stay time were compared. Results. Mortality of patients, who enterally received less than 30 kcal/kg/24h, was 32.6% comparing with 5.3% in patients, received 30 or more kcal/kg/24h ($p<0.01$). Caloric value of less than 30 kcal/kg/24h increased frequency of pneumonia by 2.0 times (19 and 38%) and frequency of sepsis by 1.8 times (23 and 41%, $p<0.05$). Rate of pulmonary edema (16 and 29%) and renal isufficiency (4%) were not different statistically significantly ($p>0.05$). Treatment duration of survivors in this group was by 12.6 days longer ($p=0.01$). Conclusions. The influence of enteral nutrition on patients' mortality, complications frequency and survivors' treatment duration depended on its caloric value. Treatment results of patients received more or 30 kcal/kg/24h were better.

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Changes of nutritional status indices after major burns

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The purpose of this study was to investigate changes in nutritional states indices after major burns and their relation with patients' mortality and complications risk. Material and methods. The prospective study involved 103 adults with major burns. All patients received enteral nutrition during acute phase. According caloric value of enteral nutrition patients were divided into two groups: group A received enterally more of 30 kcal/kg/24h, and group B received less. Body mass, body mass index, midarm circumference and prealbumin in blood serum were determined on admission, on days 7-10th, on days 21-27th, and on discharge. Relation between different indices of nutritional status, patients' mortality and complications rate and were analyzed. Results. There were no statistically significant differences in body mass, body mass index, midarm circumference between groups. Prealbumin on days 7-10th in group A was 0.087 g/l, SD-0.44, and 0.074 g/l in group B, SD-0.054, $p=0.02$. Prealbumin level on days 7-10th was related with patients' mortality. Odds of pneumonia were related with prealbumin level. Odds of pulmonary edema were associated with body mass. Risk of sepsis was associated with body mass change; with prealbumin level and midarm circumference. Conclusions. Prealbumin level on days 7-10th was statistically significantly related with patients mortality and was lower in group that received less than 30 kcal/kg/24h. Body mass, prealbumin and midarm circumference and their changes were related with risk of pneumonia, pulmonary edema and sepsis in patients with major burns.

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Early versus delayed treatment of deep dermal hand burn injuries

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Introduction: Hand burns are frequent in modern world. Treatment of hand burns is still problematic because it affects patients functional ability. Major part of hand burn injuries are minor and confined, but often it is part of major burn. The purpose of this study was analysis of patients hand function after hand burns treatment in our department.
Methods: A prospective randomised study in KMUH Department of Plastic surgery and Burns was carried out from 2002 till 2004. We analysed hands function of 60 patients with deep dermal hand burns after 3, 6, and 12 months. We analysed active and pasive movements of wrist, MP, PIP,DIP joints, and dinamometry. We compared two groups of patients. First group was treated performing early tangential excision and skin grafting, second group with delayed necrectomy and skin grafting.
Results: Patients sustained early necrectomy and grafting had better functional results in all analysing periods. Analysing functional results after 12 month we get statisticly significant differences comparing pasive joints movements ($p<0.05$), and statisticaly significant differences comparing active joints movements ($p<0.05$) exept wrist movements and extension of fingers ($p>0.05$). Hospital stay in early necrectomy and grafting group 23±2, in delayed group 35±3 days.
Conclussions: Short and long term functional results are statisticly significantly better in early necrectomy and grafting group. Performing early necrectomy and grafting is shortening hospital stay.

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Treatment of skin grafted and Z-plasty applied re-contractures with subcutaneous pedicle rhomboid flap

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**Background:** Treatment of previously skin grafted or Z-plasty applied re-contractures is a challenge. Application of a subsequent Z-plasty is risky for the possibility of tip necrosis of the triangular flaps whereas donor site morbidity is undesireable if a subsequent skin grafting is planned. Subcutaneous pedicle rhomboid flap (SPRF) is an effective technique in the treatment of every kind of contractures. This paper presents the clinical results of SPRF used in the treatment of re-contractures as an alternate technique to Z-plasty and skin grafting.
**Methods:** We operated 7 patients with re-contractures (aged 4-45) using 19 SPRFs. Flaps were applied in the upper extremity (7 flaps), lower extremity (5 flaps), trunk (5 flaps), neck (1 flap), and axilla (1 flap). Z-plasty scars were present in 4 locations whereas skin grafting was previously applied in 15 locations. Preoperative SPRF designs were made independently from the previous scars as single SPRF design in 11 locations and multiple design in 4 locations. Operations were performed under local and general anesthesia.
**Results**: Patients were followed-up for at least 6 months. All flaps achieved adequate relaxation postoperatively and healed uneventfully. The subcutaneous pedicle of the flap provided a distinct advantage in terms of vascularity. Recurrence of the contracture band was not seen in any of the patients.
**Conclusion:** SPRF is an effective and reliable technique in the treatment of re-contractures. Preoperative planning is simple and independent from previous scars. Since SPRF resurfaces the emerged defects generated by relaxation incisions, one should consider that the flexibility of a single flap may not be adequate in previously operated cases and should use multiple SPRF design.

P134

The use of prefabricated flaps in head and neck reconstruction of the burned patient

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Reconstruction of the head and neck in burned patients is particularly challenging due to the aesthetic and functional importance of these areas. Conventional surgical techniques such as skin grafting or local tissue transposition may be insufficient to achieve an optimal reconstruction in the presence of extensive scarring or loss of specialised tissue. The importation of healthy tissue as a regional or free flap is a logical and attractive alternative however the availability of suitable donor sites may be limited.
Flap pre-fabrication is a two-stage procedure that offers a potential solution to these problems. Using this technique, areas of uninjured skin or specialised tissue can be neovascularised by the implantation of a vascular pedicle in a subcutaneous plane. This tissue can be reliably used as either a regional or free flap, based on its newly acquired blood supply. Flap thickness, skin texture and colour can be accommodated into the flap design for greater refinement of reconstruction,
Over a three year period 6 patients underwent late reconstruction of the lower face / neck area using the free transfer of pre-fabricated flaps. All patients had sustained extensive burn injuries resulting in very limited skin donor sites; all had previously under gone reconstruction of the face / neck areas with sub-optimal results. Limited donor areas were optimised by the use of tissue expanders inserted during the first stage procedure, deep to the implanted vascular pedicle. In this early series, reconstruction was successful except in one case, abandoned following a wound infection.
Flap prefabrication is a well described but infrequently used technique. We present and discuss our early experience in the use of this technique for reconstruction of the burned patient. Free flap prefabrication is a viable option for complex reconstructive procedures in severely burned patients with limited donor sites

P135

Primary assessment of hand injuries in the United Kingdom

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**Introduction**
*With the hands the labourer supports a family, the parent cares for a baby, the blind 'read' and the deaf 'talk.*
Injuries to the hand, are ubiquitous problem worldwide. In the United Kingdom, hand injuries constitute 40% of all surgical emergencies attending secondary care centres. The legal cost and implications to any organisation inaccurately diagnosing hand injury cannot be overemphasised.
**Method**
Our study was in two parts -
A)Subjective evaluation of surgical trainee's confidence in assessing hand injuries ,
using a questionnaire.
B) The clinical evaluation of 192 patients by surgical trainees in three busy hospitals
were prospectively analysed.
**Results**
A) 69 surgical trainees answered the questionnaire between April 2000 and November 2002. On a scale of one to ten, where one is minimal confidence and ten in maximum confidence, plastics registrars were the most confident (8), and casualty SHOs were the least confident (6.4).
B) 192 hand injury patients were included in the study. 136 male, and 56 were female. 97 patients were left hand dominant and 94 were right hand dominant, with 1 claiming equal dominance. The mean number of digits involved was 1.3.
The examination of hospital records revealed a failure to document vital information in 77%. Missing information included occupation of the patient, hand dominance, affected finger and an accurate description of the injury. The poor documentation was a multi-speciality problem, involving records written by registrars, and senior house officers in all disciplines.
**Discussion**
Although the subjective confidence level of surgical trainees is relatively high, the assessment of such injuries is poorly done. Missed injuries could have huge legal implications and could affect the patients quality of life in a myriad of ways. We must improve on our assessment and documentation of hand injuries. Emphasis on this early in training is crucial.

P136

Suicide attempt by mercury injection: Is there a toxic risk for the surgeon?

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We present the case of a 44 years old man who, after a marital argument, commit a suicide attempt by an intravenous injection (left front armlever and back of the hand) of metal mercury (2x20 ml) that he had stored at his family cellar.
While the surgical procedures of fasciotomy, mercury aspiration and total skin graft did not present any technical particularity, the management of the toxic effects of the mercury itself and the later decontamination of the surgical room, ensuring a safe elimination of metal, was specially difficult. The post-operative examining protocol revealed the presence of weak traces of toxic mercury in the urines of the exposed surgeons.
Suicide attempts by mercury injection are very rare (70 cases indexed in the world literature), however, taking care of these patients would potentially be very dangerous for the medical and para-medical teams implied if they are not informed of the toxic effects of mercury.
Conclusions
1) Every surgeon confronted to a suicide attempt by mercury has to be extremely vigilant while extracting the toxic metal and the posterior handling of the contaminated surgical
instruments.
2)Taking care of patients like the one presented in this clinical case, requires a close interdisciplinary cooperation between surgeons, toxicologists and Intensive Care physicians.

P137

Manual reduction of the locked metacarpophalangeal joint combined with intraarticular injection of normal saline

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**Purpose**
The locked metacarpophalangeal (MCP) joint is a rare condition. It is defined as the loss of extension of the finger with normal flexion. We present two cases of locked MCP joint which were reduced using injection of normal saline into the joint and gentle manipulation as described by Yagi.
**Materials and Methods**
Yagi et al. described four steps for the manipulation of the locked MCP joint.
Step 1. Flexion of the MCP joint
Step 2. Radial deviation of the joint
Step 3. External rotation of the joint
Step 4. Gradual extension of the joint while holding the finger in radial deviation and external rotation (locking is rarely found on the ulnar side of the finger).
Two patients, aged 55 and 50 years old presented with a sudden loss of extension of the MCP joint of the right index of the dominant hand.
Manual reduction was performed to both cases. First, 2 ml of normal saline was injected into the dorsal aspect of the joint under with 25 gauge needle. After that gently flexion and radial deviation of the MCP joint was performed (step 1, 2). After the reduction a splint was used for a week stabilizing the MCP joint in extension and after that the patients were advised to use their fingers freely.
**Results**
Both joints were reduced without the need of step 3 and step 4 of Yagi`s technique. Radiographs confirmed the reduction and no fractures were observed. At 1 year's follow-up no recurrence was observed.
**Conclusions**
We consider the manual reduction as was described by Yagi, very useful method for the treatment of locked MCP joint. However we believe that the injection of normal saline increases the pressure into the joint so maybe it can facilitate the manual reduction of the MCP joint.

P138

Conservative treatment of mallet finger

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Purpose: Rupture of extensor tendon at the distal finger joint of the hand is very common condition that frequently appears after relatively banal trauma. This condition without adequate treatment could become a permanent deformity.
Material and methods: Nineteen patients with mallet finger were treated and followed au at least one year after injury. Fourteen of them with loss of extensor tendon continuity to the distal finger joint or chip fracture were injured during the sports activity. The third finger of the major hand was the most involved. Routine lateral radiographs were obtained in patients with a history of compression or violent hyperextension trauma. In 16 (84%) cases we treated conservatively applying Link's splint. Other three patients had surgical procedure with K wire. The splint was applied that the distal phalanx is held straight, but not hyper-extended, continuously during the first three weeks, followed by splinting at night for next three weeks.
Results: In conservative treatment the best results were achieved if the treatment was started within one week following injury. That means that the distal joint extended to 180 degrees and that the finger flexed normally. Fourteen (74%) patients achieved full extension.
Conclusion: Our experience with use of simple splint immobilization allows the conclusion that this low morbidity, low-cost treatment should be the method of choice for the majority of patient with the mallet finger.

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Cross-finger flap in children. A useful reconstructive alternative

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Purpose: Although cross finger flap reconstruction of finger tip injuries is a well established technique it is not widely used due to high complication rate of joint stiffness related to finger immobilisation. The purpose of this study is to underline the usefulness of cross-finger flap in finger tip reconstruction in children.
Materials and methods: We have studied retrospectively finger tip injuries in children treated in the Orthopaedic department of the Children's Hospital of Patras " Karamandaneio". In the last 7 years, we have performed cross finger flap reconstruction for traumatic finger tip injuries in children in 15 cases. They involve the index finger in 5 cases, the middle finger in 7 cases and the ring finger in 3 cases.
We have used K-wire fixation to immobilise involved fingers in all cases. The donor site defect was covered with split thickness skin graft.
Results:The post-operative course was uneventful in all cases. In the 6 months to 7 years follow-up, there were no major complications and there was no any case of joint stiffness. The aesthetic and functional result is satisfactory. The two-point discrimination is also satisfactory and comparable to other techniques.
Conclusion: Cross finger flap reconstruction in Children is a useful alternative that has the advantages of the well established cross finger flap without the disadvantages related to joint stiffness.

P140

Island Moberg Flap: A new technique for thumb reconstruction

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*Purpose:* Moberg palmar advancement flap was first described in 1964 for reconstruction of pulp defects of the thumb. This flap is basically a pedicled volar advancement flap based proximally on both neurovascular bundles of the thumb. In the literature, it has been used for the defects up to 1,5 cm since its advancement ability is quite limited due to stiff nature and underlying fascial connections of the regional skin.There have been several attempts to increase the mobility of this useful flap by adding v-y and z-plasty concepts into the technique. In these modified techniques although the skin is incised, the subcutaneous and paravascular connective tissue and the palmar aponeurosis still remained intact . So they could succeed the closure of defects up to 2 cm in lenght at best.
*Material & Method:* In this study we describe the island moberg flap in which all attachments but only the neurovascular pedicles of the flap are divided to provide a maximum mobility and advancement. This technique was used in 5 patients for reconstruction of traumatic defects of the distal thumb up to 3-3.5 cm in length.
*Results:* The flaps healed uneventfully in all patients.There was no patient with flap failure postoperatively.The patients were followed up for 6 months - 2 years. Our results revealed a sensible and durable skin coverage leading preservation of the thumb length.
*Conclusions:* The flap mobility is remarkably increased with separation of all proximal connections leaving the neurovascular pedicle as the sole connection of the flap. In this series, with use of the island moberg flap, almost 1-1.5 cm extra lenght of advancement is gained as a remarkable advantage in thumb reconstruction.

P141

Improvement of functional and cosmetic results of treatment at traumatic defects distal phalanxes of fingers of a hand

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**The purpose**
Improvement of functional and cosmetic results of treatment at traumatic defects distal phalanxes of fingers of a hand.
**Material and methods**.
The control group included 58 victims with traumatic defects of distal phalanxes of 76 fingers of a hand, operated method skin plastics island flap with axial reverse blood flow.
The researched group included 78 victims with traumatic defects of 89 fingers of a hand, operated a method skin plastics flap on a neurovascular pedicle with a "direct" blood-flow with offered updating and improvements.
**Results**
1. Use local island the advancement flap on a neurovascular pedicle with a "direct" blood-flow has allowed to lower in researched group terms of a presence of patients in a hospital in 2, 2 times; to reduce term of invalidity in 2 times; to keep all kinds of sensitivity 98, 9 % of patients; to reach sufficient volume of movements at 96 %; to receive excellent and good cosmetic effect from 98 % of patients.
2. Use this flap at plural traumatic defects distal phalanxes of fingers of a hand was the most effective method of restoration of an integument and function of fingers. The increase in average term of invalidity thus in researched group has taken place all for 2, 50, 84 days, while in control group for 10,21,3 days. Sensitivity all fingers at application advancement island flaps on a neurovascular pedicle with a "direct" blood-flow has been completely kept.
**Conclusions**
Application island the advancement flap on a neurovascular pedicle with a "direct" blood-flow considerably improves functional and cosmetic results of treatment at traumatic defects distal phalanxes of fingers of a hand.

P142

Gun shot injury of the hand and reconstruction (Case report)

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A 58 y. old patient was admitted on our clinic as an emergency case with a gun shot injury of the palm of the left hand. He had fractures of the second, third and fourth metacarpal bone, and on the proximal phalanx on the third and fourth finger with loss of tissue of the both sides of the palm (cca. 5cm.in diameter).The margins of the wounds were contused, ischemic and indurate with gun-powder ,because it was close shot injury.Immidiately the patient was admitted in Op. theater, and we've made debridement of the soft tissue, also all the conquassated bone parts especially from third metacarpal were removed.Afther that we placed Sommer-wires on the index and fourth finger, the third finger seamed with good circulation and we left it like that. That was all what we did in first act of surgery, we have changed bandages on daily bassis, and antibiotics were also ordered for the patient (Foursef 2 gr.) and Clexane one doses per day. After ten days the third finger was still alive and we wanted to make some reconstruction with bone grafting, free flaps and e.c.t., but the patient didn't want to accept such a complicated procedures. So we were forced to find the simplest solution with sacrificing of the third finger (patient accepted that). We divided the finger on two half's, removed bones and tendons and we created two flaps with bases on the two digital arteries, we debrideated the rest of third metacarpal bone till the joint with carpal bones. We closed both defects on the palmary and dorsal part of the left hand with two digital flaps. Post-op. period went smoothly, bouth flaps survived and now the patient is on rehabilitation and physical therapy and he is able to use his left hand.

P143

Some available vascularized bone grafts in posttraumatic hand reconstruction

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Introduction
The bone defects of the hands raises a lot of reconstructive problems. In case of isolate bone defects it is not possible to shorten to much the segment without functional impairment of all the hand.It is not very easy to find similar bone as structure and dimensions. Also, the majority of the fractures with bone defects in the hand is part of complex traumas with soft tissue defects. Another important point is the great advantage of using local or regional vascularised bone grafts. So that's why we`ll demonstrate the advantages of using local or regional vascularised bone grafts and also vascularised rib as part of a serratus anterior muscle flap(SARIB)
Material and methode
In 19 patients with bone defects of the hand, we used the following procedures: vascularised metacarpal bone as a part of dorsal metacarpal flap, vascularised radial bone as a part of reverse chinese island flap, vascularised radial bone as a part of a distally based osteofascial perforator flap, a vascularised bone segment from a not replantable finger, a vascularised toe joint, vascularised rib(s) segment(s) as a part of a serratua anterior musce flap-SARIB.The bone defects were located: thumb, long fingers, carpometacarpal region
Results
The evolution of all the flaps was uneventfull, with consolidation in 6-10 weeks and good morphofunctional reintegration.
Conclusions
We consider that, whatever is possible(small bone defects without soft tissue defects) it is better to use local or regional flaps including vascularised bone segmemts. In case of multidigital amputations, including the thumb, the latter can be reconstructed by using a vascularised bone segment from not replantable long finger. For deffects affecting a finger, joint seems to be the most reasonalble method. SARIB flap is indicated in solving the great bone defects accompanying the complex traumas with large soft tissue defects.

P144

Second dorsal metacarpal artery neurovascular flap to restore sensation of the thumb tip. Case report

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The flaps based on the second dorsal metacarpal artery(SDMA) have been described by many authors. According to the anatomic studies of Early and expirience of other autors we used SDMA flap with some modifications to restore the sensation of the thumb tip.
A 58-year old male, right handed, have a loss of the sensibility on the right thumb pulp. Previously he had have accidentaly injury with electric planes.The loss of the thumb pulp were covered in the other hospital with split-tickness skin graft. We performed the operation one year later.
The operation was done under general anesthesia under turnique. We designet the flap over the dorsal skin of proximal falanx the third finger. After exscision of the former placed skin graft on the thumb pulp we maked the incision of the dorsum of the hand and we rised the artery proximaly to its orgin from the radial artery. The superfitial branch of the radial nerve is in the same line as SDMA but superfitiali to the index finger extensor tendons(we is described from many authors). That was problem by many. Divide and repair the extensor tendons of the index or divide the radial nerv.
In our casewe mobilyse the tissue and trought a tunnel in the subdermal plane at the first web, without resection of the extensor tendons nor radial nerve we placed the flap to the thumb for restauration the pulp without tension.The donor site was covered with skin graft. The two point discrimination was 4mm.
One of the adventages to using the flap on SDMA and not on the FDMA is to avoiding the radial border of the index finger so useful in key pinch.
The other adventage in our case was the avoiding long term rehabilitation after resection and then repair of extensor tendons of the index.

P145

Toe transfer in thumb reconstruction

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Introduction
We will try to sustain the advantages of using the great toe transfer in the attempt to obtain both a good functionality and nice aesthetic appearance.
Material and methods
We present our experience after transfering 47 toes for thumb reconstruction: great toe in 42 cases an the second toe in 5 cases. There were 43 males and 4 females ager between 4 and 52 years.
We used the whole great toe in 16 cases, the wrap-arround procedure in 5 cases, and the timmed procedure in 21 cases. The second toe was used only in the absence of the thumb at a very proximal level, in some sequelar cases in wich only a few functional recovery results were expected, or as a pacient option.
The recipient artery was the dorsal branch of the radial artery in 42 cases, the superficial palmar arch in one case, the first dorsal intermetacarpal artery in one case and the radial artery of a concomitent free chinese flap, in 3 cases.
The recipient vein was the cephalic vein in all the cases.
Results
We lost only a second toe transfer in a posttraumatic case because of an arterial disease. In four patients the revision of the anastomoses was necesary. The sensitive recovery was very good in 70% of cases and satisfactory in 30%. The range of mobility was, in all cases, sufficient for a satisfactory function of the hand.The patients were able to return to work in 2 to 4 month, 55% in the same job.
Conclusions
Because its greater surface and strength. The great toe seems to be the better reconstructive option for obtaining a functional thumb. It gives also the better cosmetic appearance.

P146

Restoration of elbow flexion by latissimus dorsi transfer

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Introduction
Reconstruction of the function of the biceps brachii in cases of severe paralysis of the upper limb has received considerable attention. Various methods have been described until now. Among them greater emphasis has been placed on the use of the latissimus dorsi muscle for restoration of active elbow flexion.
Aims
We report a case of twenty-five year old male sustained severe trauma as a result of a car accident. He was in coma for one month. He had fracture of all forearm and hand bones and fracture of the scapula. His left brachial plexus was partialy damaged as well.
Methods
Ten months after accident we concluded that his general health status is stable, but his left upper extremity hung down due to paralysis of biceps brachii muscle. We decided to replace paralytic with normal muscle. The preoperative condition of the latissimus dorsi muscle was good. The LD muscle was well innervated and vascularized and it was enough strong. We performed a total bipolar transposition of the latissimus dorsi muscle to the bed of the paralyzed brachial muscles with its neurovascular pedicle preserved. We designed one island of back skin on the LD muscle for monitoring and easy wound closure. We wrapped muscle belly and attached it to the coracoid process and tuberosity of radius at 90 degree flexion of the elbow. Postoperative immobilization has been maintained for six weeks and after eight weeks elbow flexion exercises against gravity started.
Results
The early and late (15 years after) postoperative result is good, clinically, functionally and electromyographically.
Discussion
Correctly performed latissimus dorsi bipolar transfer in functional rehabilitation of traumatically paralytic arm is quite good and effective method.

P147

Chronic hard edema of the hand - Secretan's syndrome

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Development of hard edema of the dorsal part of the hand after minor trauma was firstly described as separate entity in 1901. by Henry Secretan. This isolated posttraumatic lymphedema named by this Swiss insurance and accident physician is quite rare disorder.
One hundred years world medical literature describes a few of tenth or hundred cases. Its real nature and efficient therapy are not clear yet. In our practice we recognized only one case with this disease.
Sixteen years ago 28 years old female injured the dorsum of her right hand. It was minimal punctiform trauma located in area of fifth MP joint, without fracture and soft tissue defects. Phlegmona (infection) of the dorsum of the hand which was developed required incision and antibiotic therapy. I saw her four months after injury. She had gross hard edema of the dorsum, with pain and limitation of fingers motion. I made surgical exploration. Beneath edematous subcutaneous tissue I find a block of whitish fibrous tissue adheres to the extensor tendons. I excised all fibrous tissue and made extensor tendons clean. Local postoperative view was really good, but not for a long time. Edema continued to develop and to spread in forearm and in arm slowly. Our conservative therapy (splint, plaster dressing, elastic garment, arm elevation, lymph-drenage etc.) had not effect.
Discussion-conclusion
Most authors believed that Secretan’s syndrome has social component in etiology. Our case has a lot of elements for this consideration.

P148

Subungual glomus tumor - surgical treatment

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The glomus tumor is a rare benign proliferation of the neuromyoarterial apparatus (glomus body) in the finger. Over a 10 years period I have treated 6 patients with glomic tumours, of which 4 were women and 2 men. In all

cases the tumor was solitary. The diagnosis was mainly clinical, the triad cold intolerance, intermittent severe pain and point tenderness being present in all cases. The X-rays examinations were negative in all cases. CT examination performed in 3 cases was positive in two, showing the precise localization of the tumor. The correct diagnosis was always delayed by 1-5 years, the cause of the pain being mistakenly diagnosticated as carpal tunnel syndrome, painful neuroma or arthritis.
The operative treatment is curative. A bloodless operative field and the use of magnification are mandatory for success. The classic approach is transungual after complete nail removal. In order to avoid unnecessary blind dissection, the point of maximum tenderness is marked on the nail before brachial plexus anesthesia. After tumor excision, the nail bed is carefully sutured with a running PDS 6.0.
In all cases the symptoms disappeared completely postoperative. In two cases there was a linear mark on the nail, but well tolerated by the patients.

P149

## Results of internal fixation of simultaneous ipsilateral fractures of the distal radius and scaphoid

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Simultaneous fractures of the ipsilateral distal radius and scaphoid are uncommon and treatment remains controversial.
This study investigated the results of internal fixation of both the scaphoid and radius fracture.
Between 1997 and 2004 13 patients with a mean age 35 (range, 19 - 67) years were operated for an ipsilateral fracture of the distal radius and scaphoid resulting from falls producing a high energy hyperextension trauma of the wrist. Greater arc lesions with trans-scaphoidal and trans-styloidal fractures were excluded.
All 2 female and 11 male patients were available for follow-up after an average of 4,3 (range, 1 to 7,5) years. Range of motion and grip strength were measured and standardized X-rays were taken, pain was evaluated using visual (1-10) and verbal (1-4) analogue scales and general daily activity and quality of life was estimated using the DASH questionnaire.
Consolidation of all scaphoid fractures was achieved by Herbert screw fixation. Except for one K-wire fixation all radius fractures were successfully treated with palmar plates and immobilization with a below elbow cast during a mean time of 24 (range, 14 to 28) days. Twelve of 13 reexamined patients felt completely pain free at rest and six also under stress. A mean DASH score of 14 (minimum 1, maximum 73) points represented only minor impairment. Grip strength of the operated hand averaged 93 % and range of motion 80% of the healthy side. Subjectively, eight patients noted unimpaired wrist function, four felt restricted occasionally and only one felt considerably limited. All patients were satisfied with the result of the operation.
In conclusion, internal fixation of ipsilateral distal radius and scaphoid fractures allowed early mobilization promising a maximum of wrist motion and prevented delayed or malunion. Thus, excellent functional results and high patient satisfaction were obtained despite the severity of the injury.

P150

## The use of external skeletal fixation to facilitate the surgical release of wrist flexion and thumb web space contractures

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**Introduction**:Scar contractures of 1st-web-space and wrist lead to adduction and flexion deformities respectively. Contracture release, soft-tissue coverage and splinting may not be adequate in long-standing and refractory cases. This study evaluates the use of external fixation for treatment of 1st-web-space and wrist contractures.
**Methods:**All patients had prior unsuccessful attempts of release. Six 1st-web-space adduction(3 burns, 1 Poland syndrome, 1 gun-shot, 1 radial artery thrombosis) and 7 wrist flexion(all burns, 3 bilateral, 1 unilateral) contractures were released surgically. External fixation was applied to 1st and 2nd metacarpal bones to maintain

thumb abduction, and to radius and 2nd-metacarpal bone to maintain wrist extension, followed by skin grafting. External fixation(6-12 weeks) was followed by splinting(4 weeks). Results were based on functional outcome, persistence of release of contracture and rate of complications.
**Results:**On average thumbs were contracted at 0° of adduction with no range of motion and wrists were contracted at 85-100° of flexion(range of motion was 0° for 5 cases, 20° for 2 cases). At long-term follow-up of 1st-web-space contractures the thumb was in an average of 55° of palmar abduction. Patients were able to oppose and fully adduct. For wrist contractures 4 cases had neutral position(0°) with an active extension ranging between 5-15° and flexion to 35-45°. In two cases wrists were at 45° of flexion with a range of motion of 20°. In one patient the wrist contracted back to preoperative position requiring reoperation. All patients noticed an increased activity and improvement in grasping objects at 6 months follow up. Complications included 3 pin-site infections(antibiotics given), 1 severe discomfort after six weeks(apparatus removed) and 1 median nerve compression(carpal tunnel released).
C**onclusion:**External fixation can be used to maintain the position in cases of 1st-web-space contracture release especially in cases where the standard methods have failed. It is safe, efficacious and well tolerated.

P151

Internal splinting for radial ve ulnar nerves injuries

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Internal splinting is an early tendon tranfer performed during or just after nerve repair and is a controversial issue. The objectives of internal splinting are avoiding the use of long term external splinting, avoiding permanent hand deformities during nerve recovery, supporting sensorial recovery and temporary substitution for the palsied motors until the nerve is reinnervated. In this clinical study we present our clinical cases of internal splinting and discuss the results in terms of indications, timing, advantages, and disadvantages of internal splinting.
We applied internal splinting in 3 patients with radial nerve injury and in 8 patients with ulnar nerve injury. Internal splinting was performed contemporarily with the nerve repair in 5 patients, in 2 weeks following nerve repair in 1 patient and in 4 weeks following nerve repair in 5 patients. Pronator teres and flexor carpi radialis were transfered in radial nerve injuries whereas our modification of Omer's superficial Y technique was used for ulnar nerve injuries. All patients received physiotherapy postoperatively and were followed up for 1 year with physical examination and ENMG. None of the patients had early or late postoperative complication. Recovery of sensorial and motor functions were achieved in all patients without permanent hand deformity.
We concluded that internal splinting avoided external splint useage, worked as a substitute during recovery of the nerve and prevented the establishment of hand deformity during recovery of the nerve. The contribution of internal splinting to sensorial recovery was noteworthy but the number of our cases was limited to come to a definite conclusion. We did not experience any major disadvantage of internal splinting.

P152

Management of children suffering dystrophic *epidermolysis bullosa*

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**Purpose:** Congenital *epidermolysis bullosa* is referred to the congenital blistering diseases that are characterised by injuries of the skin and mucous membranes. The disease affects children since infancy, causing severe disability. Even minimal mechanical traumatisation triggers the damage of basic membrane and formation of blisters, deep ulceration of skin. Muscular dystrophy, syndactyly and flexion contractures are typical complications of dystrophic *epidermolysis bullosa*. The manifestation of disease is possible to observe after birth. The alteration of hands disturbs very important functions such as self-service, writing etc. Therefore it is necessary to rehabilitate these children, manage their wounds properly and perform surgery in cases of complication, often few times. Recurrence is frequent due to ongoing disease, however, functional improvement is obtained for several

years.
**Material and methods**: In this paper we discuss this rare pathology, its course and cure possibilities. We review recent reports about the dystrophic epidermolysis bullosa.
**Results:** We present case reports and share our experience of Kaunas Medical University Hospital working with children having this mutilating pathology. Since 1996 we treated 5 patients (6 hands, 2 feet), 14 reconstructive procedures were performed in the Department of Plastic Surgery and Burns. Management of children and surgical procedures are demonstrated.
**Conclusion**: *Epidermolysis bullosa* is mutilating pathology. Complex treatment scheme is mandatory with the participation of team of specialists: pediatricians, surgeons, reabilitologists, nurses, social workers. Unit of burns is the proper place for the surgical treatment of complications of dystrophic *epidermolysis bullosa*. Experience of treatment of wounds, scarring syndactilies and contractures is beneficial for the treatment of disfigured limbs in cases of epidermolysis bullosa and wound on the trunk as well.

P153

Sensory recovery after digital nerve repair with early sensory re-education using "Tactile Glove System" and assessment with STI Test

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Aim: The importance of digital nerve repairs is often over looked. This may result in a poorly functioning hand. Repair of a digital nerve is difficult to assess in the early period of rehabilitation as it takes time to recover from an incomplete and mismatched reinnervation. Remapping of the cortical representation of the hand[1] has also been proposed as an associated problem with rehabilitation.
The tactile glove is based on sense substitution, using hearing as substitute for sensibility. This method allows the start of sensory relearning long before reinnervation can be identified to try and maintain the cortical map from the affected hand, until actual sensibility has returned. This has been proven to be useful in injuries to nerves at the wrist (Rosen and Lundborg)[2].
Method: Patients between 18 and 80 years of age, with primary nerve repairs and excluding previous hand injuries, diabetes, and steroid therapy were assessed . The assessment of digital nerve repairs were made by investigating changes in 2 point discrimination, tactile gnosis, and grip function. This was done using the Semmes-Weinstein monofilaments (touch and pressure perception); 2PD test; Shape Texture Identification test (tactile gnosis); Sollermantest (grip function). Comparisons of these results were made between patients who had sensory re-educational programmes initiated several months after the repair, when there is some sensibility present in the affected site, and those who had immediate stimuli generated by active touch (Sensory Glove system).
Results: After 3 months, patients who used the Sensory Glove system appeared to have an overall better outcome than those who had delayed sensory education. This is demonstrated by comparative results of the STI test of tactile gnosis, and by Semmes-Weinstein monofilaments
Conclusion: The Sensory Glove System appears to assist in early functional sensory recovery of digital nerve repairs. This may be due to early sensory input from the hand , in spite of complete sensory loss which facilitates maintenance of the cortical hand map.
The addition of the STI test to the overall assessment of nerve injuries is important. It is a much improved tool for assessing tactile gnosis which illustrates the brains interpretation of sensory input.
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Hand Surg 2003:37: 54-57

P154

Armenian and Russian versions of the "Disabilities of the Arm, Shoulder and Hand" (DASH) questionnaire

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**Purpose:** Self-administered questionnaires are widely used outcome-measurement instruments in the Western countries. However, standardised Armenian and Russian upper-limb-specific questionnaires aren't yet available. The questionnaire "Disabilities of the Arm, Shoulder and Hand" (DASH) (American Academy of Orthopaedic Surgeons) is an established measure of upper-extremity disability/symptoms. Our purpose was the cross-cultural adaptation of Eastern Armenian and Russian versions of the DASH.
**Material and methods:** Cross-cultural adaptation was conducted according to Guillemin's guidelines. The pre-final DASH-Armenian was tested on 40 Armenian-speaking patients (8 females, mean age 36, SD=13.89, range 14-67) after neurorrhaphy on the forearm. The DASH-Russian was tested on 30 Russian-speaking patients (15 females, mean age 37, SD=12.15, range 16-68) with various upper-limb disorders. To measure the construct-validity of translated questionnaires, the first group also completed the Armenian version of the SF-36 generic questionnaire, while the second one completed the SF-36-Russian, and Spearmen's correlations were assessed between language-specific versions of DASH and SF-36. Test-retest reliability was assessed on the subgroup of 30 Armenophone and all Russophone patients who again completed the questionnaires 2-8days later.
**Results:** Questionnaires completing took 5-10min. Many patients missed two optional modules (Work, Sports/Music) of the DASH, thus validity-reliability of only Disability/Symptoms module could be assessed. Internal consistency was 0.96 (DASH-Armenian) and 0.94 (DASH-Russian). Test-retest reliability was 0.99 ($p<0.01$) (DASH-Armenian) and 0.95 ($p<0.01$) (DASH-Russian). Table 1 summarizes the construct-validity of the translated questionnaires.

**Table 1.** Spearmen correlation ($r_s$)# between DASH-Armenian and SF-36-Armenian, DASH-Russian and SF-36-Russian

| *SF-36 Subscales* | *$r_s$ with DASH-A* | *$r_s$ with DASH-R* |
|---|---|---|
| **Physical Functioning - PF** | **- 0.69 **** | **- 0.50 **** |
| **Role Physical - RP** | **- 0.76 **** | **- 0.51 **** |
| **Bodily Pain - BP** | **- 0.74 **** | **- 0.63 **** |
| General Health - GH | - 0.27 | - 0.33 ** |
| Vitality - VT | 0.18 | - 0.45 * |
| Social Functioning - SF | 0.02 | - 0.30 |
| **Role Emotional - RE** | **- 0.61 **** | - 0.31 * |
| **Mental Health - MH** | - 0.33 * | **- 0.61 **** |

# The $r_s$ values express construct-validity of translated versions of the DASH. Strong correlations are shown in bold. * $p < .05$; ** $p < .01$.

**Conclusion:** DASH-Armenian and DASH-Russian seem to be valid instruments to measure disability/symptoms in Armenian- and Russian-speaking patients with various upper-limb disorders. These questionnaires are proposed to AAOS to be recommended as official translations. Their use will facilitate international multi-centre studies by establishing standard measures and obtaining comparable data.

P155

The patient hand diary - Useful or not?

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Introduction: Patients want more information and greater involvement in decisions about their treatment according to the Healthcare Commission 2004 survey in the United Kingdom**.** The results of the survey reveal that patients

are being discharged from hospital without enough information. Risks, benefits and expected outcomes of treatments still need to be communicated better to patients.
Methods: We designed a patient diary to chronicle the patient journey through hospital. We chose 3 common hand conditions - Carpal Tunnel syndrome, Dupuytren's disease, and Ganglion. We chose 60 patients (20 for each condition) for our pilot study. We designed a hand diary that included an introductory page, a section detailing patient demographics, a section about the general health of the patient, a section about the condition affecting the patient, a section to be filled in by the hand therapists, occupational therapists, doctors each time the patient attended outpatients. This was to reinforce the information and advice given to the patient. A section was created to provide telephone contacts for the patient to use after discharge.
We also designed a patient diary evaluation form to assess the value of the diary. We carried out our pilot using a paper diary but there remains the potential of developing an electronic patient diary.

P156

Selective continous extension in Dupuytren's contracture: histologic findings

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The continuous elongation technique (TEC) represents a very simple, innovative method that brings to complete extension of the retracted finger with a regression of aponeurotic contracture.
To get insight into the reactions inside the palmar fascia during continuous extension we have undertaken a histological research with light microscope over 51 patients affected by DD disease. We have compared the tissues from 21 cases treated by TEC with the tissues of 30 cases of patients with recurrent DD disease, operated without previous TEC.
Our study has evaluated nodules (number, relationship, cellularity), pathological cords, inflammation, vascularity and derma and ipoderma involvement.
The most important data raised out of our investigation is that in patients subjected to TEC we can observe histologically the disappearance of the nodules.
As a matter of fact, in patients treated with TEC, the nodules have been observed in tissues removed from only 2 patients over 21 (9.5%), while in non-stretched cases they have been observed in tissues removed from 22 patients over 30 (73%).
We think that our study support the hypothesis that the disappearance of the nodules, after extension, is directly related to the stretching forces generated by the extension device.
The cells of the nodules are pressed to align themselves with the major lines of stress that go through the nodules. So, the nodular configuration is lost and the nodules are no longer identifiable by light microscopy.
After continuous extension the dissected tissues have a uniform, smooth, ribbon-like appearance. They consist of large, parallel bundles of collagen fibres with numerous cells in between which are oriented according to the stretching forces provoked by the extension device.

P157

Dupuytren's contracture - five years analysis of clinical data in Vojvodina

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INTRODUCTION: Dupytren's contracture is a degenerative disease with the increasing incidence in our region. Due to the significance of this disease in relationship to certain age and to people suffering from other diseases as well as to physical handicap which it can induce, the authors presented the cross section of the latest clinical material comparing it with their own former data and with the data from contemporary literature.
MATERIAL AND METHOD: The material consists of medical records of 112 patients. The clinical data of surgically treated patients suffering from Dupytren's contracture have been statistically processed and presented graphically. The data have been analysed according to characteristics relevant to this disease.
RESULTS: Out of 112 patients, male gender was dominant -100 patients (89, 28%). The most endagered age

group is between 61-70 years (38-33, 92%). Of accompanied disease in our population the most significant is diabetes mellitus (insulin dependant) -19 patients (16, 96%). The disease heredity was registered in 12 patients (10, 97%). Both hands were affected in 46 patients (41, 07%). The ring finger was most frequently stricken by the disease - in 38 patients (33, 92%). The most frequent finger combination was the fourth and fifth finger -in 24 patients (21, 42%). In our population the disease evolution is most frequently from 5-10 years (the total of 34 - 30, 35%).
CONCLUSION: Dupytren's contracture shows the increasing incidence in our region. The most endangered category is males in their sixties that have the insulin dependant type of diabetes mellitus. The important factor in estimating Dupuytren's diathesis is the developing of the process in both hands. The data about our patients late turning to surgery are still disappointing and differ significantly from the data in developed countries but are slightly better from the result in our previous studies.

P158

A critical overview of the personal experience in flexor tendon surgery in the County Hospital Brasov, Romania

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Introduction. Same findings can be the motivation of the paper: the high incidence after fractures in the traumatic injuries traditional interest of our department for the surgery of flexor tendon; socio-economic reasons in relations with flexor's injuries.
Material. We realized an overview for 500flexor tendons operated in a period of 3 yrs. at 266 patients. Method. Our surgical strategy was: primary tenorraphy, followed by early mobilization for the injuries located in a II-III-IV anatomical zone. For the injuries located in the I and V zone this protocol was inconstant used. Early motion started in a first day of surgery, keeping the hand in a permanent splint for 30 days; a program of controlled rehabilitation is continue for a 30-40 days. For a complex neuro-tendinous injuries the recovery period can be longer, till 90 days after surgery. Our surgical technique was: modified Kessler core suture with running peripheral suture, monophilament material ; usually the A2 and A4 pulleys are preserved and also the FDS, every time when his suture is without tension or poolley blockade, otherwise it is resected. Always the associated Nerves injuries are reparated in the same time. Results. We obtain a very good recovery in almost 85%cases. We reduced very much the indication of tenolysis , reserved mostly for the cases with nerves injuries associated. Like bad results: contracture of PIP joint, with lack of extension, in 20% cases, tendon rupture in 1% and suppurative wound evolution in 2% cases. Conclusion. Post operative early motion represent the Key point for flexor rehabilitation. An atraumatic but strong primary suture offer the support of the motion. Surgical strategy have to be adapted for each case .The rehabilitation program after surgery have to by controlled both by the hand surgeon and the kinesytherapeut.

P159

New trends in flexor tendon sutures and repair

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The aim of this study is to present modifications of the conventional Kessler technique (wrap core suture) and of tendon splints (H-shaped splint) for digital flexor tendon repair, aimed at enhancing the biomechanical properties of such repairs as related to resistance to both gap formation and repair failure. Comparing (in an *ex vivo* study) the tensiometric properties (gap-formation and failure strengths) of 24 flexor digitorum profundus tendons repaired with the described techniques (12 repairs per each technique) and the conventional Kessler repair (24 repairs), we found that the formers provided a significantly stronger repair than the latter *ex vivo*. A statistically significant difference ($p<0.001$) has been found between each of the two modified techniques and the Kessler repair. The "wrap core" suture was found to increase the load at which a visible (1 mm) gap formed by 22.6 percent when compared with the modified Kessler suture. The mean gap strength of the "wrap core" repair was 6.5 N, while that of the modified Kessler was 5.3 N. The failure loads (ultimate strength) of the "wrap core" suture were observed to be 33.8 percent higher than those of the modified Kessler. The mean breaking load of the "wrap

core" repair was 19.4 N, while that of the modified Kessler was 14.5 N.
The "H-splint" repair was found to increase the load at which a visible gap formed and the failure loads (ultimate strength) by 158.5 percent and 333.1 percent, respectively, when compared with the Kessler suture. The mean gap strength of the "H-splint" repair was 13.7 N, whereas its mean breaking load was 62.8 N.

P160

Microsurgery in treatment damage tendon the device of a hand

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Tendon restoration and reconstruction is till nowadays is one of the most actually problem in hand surgery. Reconstruction of skin and external tissues is a precondition for tendon restoration and as a final result the restoration of hand and fingers function.
We operated 61 patients in the age from 6 till 58 years with different tendon and soft tissues damages. Among them posttraumatic finger deformation(38), local radiation injuries(15), open hand traumas(8). In those patient we performed 66 different free flaps autotransplantations
The indications for free flaps we necessity of soft and covering tissue restoration or simultaneous reconstruction of tendons and covering tissues.
For reconstruction we used free soft tissue flaps(single, combined or prefabricated).
In several urgent operations we used free "utile" flaps. Prefabricated flaps we based on m. serratus ant. or scapula fascia.
Free fascia flaps were used as covering material for contour restoration of big soft tissue deficiency.
62(93,9%) free autotransplantation were successful. In 4 cases flap necrosis was observed, for those patient different secondary operations we made.
Thus, at the present stage of development of reconstructive surgery of a hand use free flap autotransplats can be counted a method of a choice at presence of the combined defect of sinews and soft tissue.

P161

Subtotal versus limited fasciectomy in Dupuytren's disease with partially involved palmar aponeurosis: a prospective, randomized study

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The main purpose of the study is to assess whether limited or subtotal fasciectomy could be a method of choice in the treatment of patient's with Dupuytren's disease with partially involved palmar aponeurosis. A prospective, randomized study is a novelty of this work. The second goal of the study is to assess whether microscopic features of Dupuytren's disease are present in the clinically uninvolved palmar aponeurosis and is there a correlation of these findings with recurrence and extension.
In our prospective study we randomly assign patients into two groups: first undergoing subtotal fasciectomy (50 patients) and second - limited fasciectomy (50 patients). Including criteria are: limited type of disease (1 or 2 rays, no more than two fingers), primary disease, without involvement of the thenar. We exclude patients with Dupuytren's diathesis. Two groups of patients are compared according to two main end points: occurrence of recurrence and extension in the palm and frequency of the perioperative complications. Samples of pathologically changed fascia, clinically uninvolved part of palmar aponeurosis and transverse palmar ligament are analyzed according to Luck's classification and immunochemically stained for alpha-smooth muscle actin of myofibroblasts. A number of patients involved in the study provides reliable statistical analysis. Results of immunochemical studies and their correlation with clinical observation will be presented. Results indicate that in the observed group of patients recurrence and extension in the palm occur more often after limited fasciectomy in comparison with subtotal fasciectomy, with comparable frequency of complications.
Results of our prospective, randomized study with homogeneous group of patients suggest that in a group of

patients with partially involved palmar aponeurosis subtotal fasciectomy could be a method of choice in comparison to limited fasciectomy in respect to recurrence/extension and number of complications.

P162

A retrospective analysis of 30 operated cases of mallet fractures

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INTRODUCTION: The author discussed the surgical treatment of the mallet fractures and their outcome as it has been shown to lead to early osteodegenerative changes in the joint
OBJECTS: The paper studies the different modalities of treatment of mallet finger form k-wiring to screw fixation.
MATERIAL & METHODS:
Thirty patients with mallet fractures treated by open reduction and internal fixation with small screws, as well as by close k-wiring were reviewed at an average of 3 months after surgery. The indication for surgery was a fracture involving more than one-third of the distal phalanx articular surface or with subluxation of the distal interphalangeal joint. The fracture was evaluated with check x-ray and clinical 3 monthly follow-up.
RESULTS:
Loss of reduction occurred in one patient and in another one screw loosened slightly without loss of reduction. There were no nail deformities, infections, or secondary procedures. The mean range of motion was from 6° (range, 0-30°) (extensor lag) to 70° (range, 60-90°) flexion. Ten patients (33%) had evidence of degenerative changes, one had minor joint space narrowing and one had significant deformity. Open reduction and screw fixation with small screws can lead to satisfactory outcome in appropriate patients
CONCLUSIONS:
Studies are needed to evaluate further the best methods of mallet finger fixation. From this study k-wiring with open reduction was thought to be best.

P163

Surgical strategy of the combined scrotal and penis defect closure

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In some cases we observe the total penis and scrotal injuries as a result of severe congenial and uncongenial diseases, which treatment is possible using the microsurgical tissue autotransplantation.
In children we cover the penis and scrotal defects after the damaged skin removal using local tissues flaps. This is the first stage of the surgical treatment the main task of which is only temporal defect closure. After the child grows up we perform the second reconstruction using microsurgical autotransplants to achieve adequate functional and aesthetic results.
We successfully used such strategy in 11 years old boy with lymphoangiomatosis of the penis and scrotum soft tissues, characterized by severe lymphostasis, lymphorea and infection. The total resection of the damaged skin and closure of the defect with rotated groin flaps was performed. The relapse of the disease was not observed. In 2 years we performed free microsurgical autotransplantation of revascularized reinnervated radial flap with good functional and aesthetic results.
In adult patients with severe damage of the penis and scrotum we have to decide double task: to closure defect and to solve functional and aesthetic problems simultaneously. We use different autotransplants in different cases.
We observed the 38 years old patient with severe damage and deformation of the penis and scrotum as a result of liniment injection and trauma, leaded into the erictile dysfunction. Unsuccessful attempts of treatment were undertaken. We performed resection of the damaged tissue and closed the defect using reinnervated and revascularized toracodorsal with individual pattern. We achieved good aesthetic result. In a year we inserted silicon penile endoprosthetics to achieve regidity of the penis.

So our strategy of the penis and scrotum severe damages treatment is depend on the priority surgical task. Two stages strategy we use in children, when solving of the functional problem to be delayed.

P164

Surgical treatment of penis and scrotum lymphedema

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Patients with lymphedema of the penis and scrotum are faced with numerous problems in the daily life of the functional, psychological and social nature.
Aiming to discover the cause of the lymphedema of the penis and scrotum the following investigations are performed: laboratory, serological, parasitological, radiographic, ultra-sound, dermato-venerological and urological.
The causative treatment of the lymphedema consists of reconstruction of successful lymph drainage. In cases where it is not possible or chronic lymphedema persists, surgical removal of excess soft tissue is indicated.
We present three patients with the lymphedema of the penis and scrotum who were surgically treated at the Clinic for Plastic Surgery and Burns, Military Medical Academy. Patients were treated in the chronic phase of their illness, 20 years after the beginning of unsuccessful medicamentous therapy in other institutions. In many cases the real cause of disease was not found.
The surgical treatment of the edematous penis consisted of removing the expanded skin and compensation with skin grafts or with local flaps, respectively. Treatment of edematous scrotum was done by reduction of the lymphedematous tissue, and reconstruction using the rest of the scrotal skin as a flap.
The lymphedema of the penis and scrotum is very rare disease. The etiologic diagnosis is difficult. The surgical treatment in chronic phase is only efficient with satisfactory results in functional, psychological and sociologic sense.

P165

The impotance intraoperation dopplerorgaphy at a choice of a penis revascularisation method at patients with arterial erectile dysfunction

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Till now the question of diagnostics and a method of penis revascularization at surgical treatment of erectile dysfunction is still open.
We survey 97 patients with erectile dysfunction various genesis. Arterial insufficiency - 27, with a pathological venous drainage - 25, changes cavernos fibrous - 11, posttraumatic damage of perineum and a penis - 4, congenital deformation and break tunica albuginea - 4, psychogenic - 26.
From all patients with arterial erectile dysfunction the most interesting were 3 patients after aorto-femoral prostesing. In these patients we performed standart epigastral-penile shunting with end-by-side anastomosis. We investigated a blood-groove in epigastric artery and in a a. dorsalis penis distal and proximal from the anastomosis. In all patiens we noutic ed decrising of blood-groove speed in tha s. dorsalis penis distal from the anastomosis. This was a result of different peripheral resistance in proximal and distal parts of penis artery.
After imposing clip-on earrings proximal of the anastomoses on an penis artery the peripheral blood-groove has increased in 5 times in comparison with initial and has made 0,96 m/s. The received results have dictated necessity of imposing anastomosing between a.epigactrica and a.dorsalis penis on type the end-to-end.
In the nearest and remote postoperative periods normalization of a blood-groove on an penis artery with physiological recovery of patients was observed. Dynamic supervision within 9 years show satisfactory result.
Thus, intraoperation dopplerorgaphy of penis arteries and a donor artery was basic in a choice of penis revascularisation a method .

P166

Microsurgical and pedicle muscle flaps in penis enlargement

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Micropenis in its majority is not a surgical problem but psychological. But in the cases of real micropenis or in patients with strong psychological dominanta surgical treatment seems to be the only one successful treatment opportunity.
We are performing different types of penis enlargement among them, a fragment of thoracodorsal muscle enlagement, fragment of serratus anterior muscle and fascia, pedicle flap of rectus abdominis muscle, based on inferior epigastria bundle. The choice of different types of flaps depends of the original size and length of penis, patient's preference including after surgery size, preferences concerning donor area, anatomical conditions of the donor site, and quality of muscle.
The big advantage of microsurgical penis enlargement is the opportunity to have flap of any size and any shape you need, you can also design the length of vessel pedicle. Main disadvantage of this method - long postoperative period, risk of vascular complications, but all of them are not to be considered if you are treating those patients in the microsurgical department with skilled team.
Rotation of rectus abdominis muscle flap can be used more wide, but a big disadvantage of this method - poor shape design, because as a rule, this muscle is not wide enough and we also need to preserve part of muscle fibers to prevent ventral hernia formation in the postop period.
All the methods should be considered in the preoperative planning - and the choice is very individual. The final plan of operation should take into considerations all clinical indications, and patients privileges.
Another side of penile enlargement - introduction the new vascular system supporting penis structures - as an artifact it was found in some patients that the length and the quality of erection improving after surgery.

P167

One-stage transfer of the short head of the biceps femoris muscle for reanimation of facial paralysis

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Based on an anatomic investigation, the short head of the biceps femoris muscle with attached lateral intermuscular septum of the thigh was identified as a new candidate for microneurovascular free muscle transfer. We performed one-stage transfer of the short head of the biceps femoris muscle with a long motor nerve for reanimation of established facial paralysis in 7 patients.
The dominant vessels of the short head were the profunda perforators in 6 and the direct branches from the popliteal vessels in 1. The length of the motor nerve ranged from 10 to 16 cm, and was sutured directly to branches of the contralateral facial nerve in 6. One patient needed an interpositional nerve graft of 3 cm in length. The period required for initial movement of the transferred muscles ranged from 4 to 10 months after operations. The period of postoperative follow-up ranged from 6 to 43 months.Transfer of the short head is thought to be an alternative for one-stage reconstruction of the paralyzed face because of the reliable neurovascular anatomy, and it allows two teams to operate together without the need to reposition the patient. The lateral intermuscular septum, which is attached to the short head, provides anchor/suture-bearing tissue so reliable fixations to zygoma, and upper and lower lips can be achieved. In addition, the scar and deformity of the donor site are acceptable and loss of this muscle does not result in donor-site dysfunction.

P168

Combined free radial forearm flap and two tubed lower abdominal flaps for coverage of extensive scalp defect

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Coverage of the extensive scalp defects is a challenge for plastic surgeon and could be complicated by the limited donor sites availability for free flap transfer and absence of the vessels in the recipient area.
The purpose of this paper is to present a new method of reconstruction of extensive scalp defect using free radial forearm flap combined with two lower abdominal tubed flaps, all of them based on the common vascular pedicle - radial artery and cephalic vein.
We present a case of 23-years-old man with an extensive ulcerated skin scar deformity of the entire scalp, temporal areas, auricles and skin scar deformity of the entire back and both axillary areas after severe burn injury 21 years ago. The X-ray examination and CT revealed two defects in the parietal and occipital bones. The preoperative biopsy didn't reveal malignant transformation of the ulcers (Marjolin's ulcer). The Doppler ultrasound examination revealed absence of the both temporal arteries and veins. To obtain a large skin area with long vascular pedicle two tubed Gillies-Filatov flaps were prefabricated on the lower abdominal wall, and after delaying transferred to the forearm. In the next session entire combined flap based on the radial artery and cephalic vein was transferred to the scalp. Microvascular anastomoses were carried out to the external carotid artery and external jugular vein. Entire combined flap survived. Two additional procedures were necessary for final coverage. The entire covered area was 610cm$^2$
In conclusion, this new method of flap prelamination, despite it's time consuming, allows to cover an extensive defect of the scalp with good aesthetic result.

P169

Total nasal reconstruction using a prelaminated free radial forearm flap and porous polyethylene implants

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Purpose: Total nasal reconstruction is a challenging reconstructive problem. Different methods combining flaps and autologus tissues or implants have been described. We report an interesting alternative method used in one case.
Materials and methods: A 41 -year old woman was presented with extended recurrence of BCC on the nose. She suffered from Gorlin syndrome and had multiple excisions of BCCs on the nose and reconstructions with local flaps and grafts in the past. After thorough pre-op evaluation, we decided a multi stage procedure.
In the first stage the patient had total nasal resection and confirmation of cancer free borders with multiple frozen sections. At the same stage a new nose was created on the left forearm by subcutaneous insertion of porous polyethylene nasal implants, in the area of a planed free radial forearm flap. The operation was followed by radiotherapy.
Four months later, in the second stage, the prelaminated free radial forearm flap was micro surgically transferred to the nasal defect. The facial artery and vein were used as recipient vessels.
Minimal aesthetic corrections of the new nose were performed in a third stage.
Results: In the six months post-op follow up, the aesthetic and functional result is certainly better to any conventional techniques and the donor site defect is minimal.
Conclusion: Prelaminated free radial forearm flap is an advantageous alternative in total nasal reconstruction with satisfactory aesthetic and functional results and minimal secondary defects.

P170

Double free-flap reconstruction after excision of extended head and neck cancer in two cases

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Purpose: Extended cancer of head and neck area remains a difficult reconstructive problem, despite the development of microsurgery techniques. We present two interesting cases, reconstructed with double free flaps.
Materials and methods: The first case is a 34 years old man, with an extended cancer of the floor of the mouth

and mandible. He had radiotherapy followed by wide excision of the floor of the mouth and mandible, radical neck dissection on the right side and hyperhyoid neck dissection on the left side. We used a free vertical rectus abdominis myocutaneous flap to reconstruct the floor of the mouth and a free osseocutaneous fibula flap to reconstruct the mandible and the skin of the submandibular area.
The second case is a 54 years old female patient with extended SCC of the right side of tongue and the floor of mouth, stage IV (TNM). She had radiotherapy, followed by almost total glossectomy, excision of floor of mouth, modified radical neck dissection on the right side and suprahomohyoid neck dissection on the left side We used a Free Ulnar Forearm neurosensory Flap to reconstruct the tongue, and a free myocutaneous Vertical Rectus Abdominis Free Flap to reconstruct the floor of the mouth.
Both patients had post-op radiotherapy
Results:The aesthetic and functional result regarding swallow and speech ability is satisfactory in both cases. The last is very important for the second patient who is illiterate and though does not have communication alternatives. In a year follow up, both patients remain free of disease and the donor site defect is minimal.
Conclusion: The Simultaneous use of double free flaps in head and neck reconstruction can be an ideal solution in cases of extended and composite head and neck defects after cancer excision, especially when multifunctional structures are involved.

P171

Free fibula flap for the mandibular reconstruction after oncological demolition

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PURPOSE The free fibula transfer is a challenging option, used by the plastic surgeon, for the mandibular reconstruction both for functional and aesthetic rehabilitation of the patient. Nowadays it has become a common technique thanks to its reliability and versatility.
MATERIAL AND METHODS January 1997 - December 1999 (follow-up 5-7 years): 21 free flap performed (12M, 9F). Range 56-72 years old, mean age: 68. Cases concerned 11 oncological demolition for squamous cell carcinoma of the floor, 4 osteosarcoma of the mandible and 6 squamous cell carcinoma of the tongue and floor. In all cases mono (13 patients) or bilateral (8 cases) conservative lymphoadenectomy of the neck was performed. 2 osteotomies followed by miniplates application in 14 cases; in 7 cases a single osteotomy was carried out. Recipient vessel were: the superior thyroid artery (15 patients) and the facial artery (6 patients). Venous anastomosis were performed with the internal jugular vein with an end-to-side technique.
RESULTS 1 venous anastomosis was revised for a congestion; due to a partial detachment 1 skin paddle was sutured again to the base of the tongue. No free flap was lost. 1 patient died during the follow-up due to tumor progression (after 5 years). All the patients were rehabilitated from the functional point of view.
CONCLUSIONS Despite the technical hitches of this procedure the aim of the plastic surgeon is to achieve good functional and aesthetic results. The free fibula transfer allows 3D reconstruction of the mandible and good-quality rehabilitation in oncological cases. Accurate pre-operative selection of the patients and microsurgical planning are mandatory. In our series complication rate was low.

P172

Pedicled gastrocnemius muscle flap in the salvage of total knee arthroplasty

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Skin damage after total knee arthroplasty (TKA) may jeopardize the functional outcome. Most certainly it prolongs hospital stay and rehabilitation time.
In some cases skin necrosis can precede the development of deep infection and in severe cases; this infection can progress to loss of prosthesis or even amputation. Early wound debridement and wound covering is essential to the outcome.
Purpose: To present our experience with the pedicled gastrocnemius muscle flap for early coverage of soft tissue

defects after TKA.
Material and methods: Five patients with skin necrosis after TKA were reviewed. All were treated with aggressive wound debridement and pedicled gastrocnemius muscle flap covering. All patients were reviewed at a minimum of 12 months postoperative. Evaluation endpoints: Survival of knee prosthesis and Knee Society Score (KSS).
Results: All five gastrocnemius flaps healed uneventful. In one of the five cases, there was no communication from the skin necrosis to the joint, and the salvage operation was performed as a delayed procedure. In three of the other four cases salvage operation was performed within four weeks after TKA. In one case with communication between skin necrosis and joint the salvage operation was performed seven weeks after primary TKA and the patient ended up above knee amputated after development of late chronic infection. In the other four cases the TKA survived and at the latest follow-up the mean KSS was 72.
Conclusion: The authors consider the pedicled gastrocnemius muscle flap as a successful salvage procedure in the treatment of skin necrosis after TKA. We believe that the timing of muscle tissue transfer is one of the most important factors in the outcome.

P173

Flap primary design for closure of multiple defects

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Purpose: Modern reconstruction frequently requires vascularized flap transfers - it is a challenging problem and is the best option in case of one-stage approach. The recent rapid progress in microsurgery involving neurovascular relationships of the donor areas has renewed interest in flaps microvascularization (according accompanying arteries of the cutaneous veins and cutaneous nerves). The purpose of this study was to determine the ideal reconstructive solution for difficult multiple defects.
Material and methods: Material includes 10 patients: 7 wrist and 3 face defects. Latissimus dorsi musculocutaneous, scapular and radial septofasciocutaneous flaps were used. We performed new technique of fashioning daughter random fasciocutaneous flaps from the vascularized flap as a unit at the time of elevation and consumed them to cover full-thickness defects to the dorsum of PIP joints simultaneously, resulting in avoiding the need for syndactilyzation of the digits. It is normally utilized as a single transferred unit for coverage of multiple wrist defects, it requires syndactylization of the digits with further procedure to divide the syndactylized fingers.
Results: There were no flap failures. Follow-up period (36 months) revealed good survival of all flaps and satisfaction of patients. Radial flap was the most useful for fashioning referring to its anatomical features (segmental septofasciocutaneous perforators), perfect drainage (superficial and deep venous network), light accessibility and excellent survival (based on a geometry of polygonal neurovascular network).
Conclusion: Careful preoperative prudently planning, delicate intraoperative management, and postoperative monitoring are the mainstays for success in functional recovery and aesthetic result. The duration of treatment and rehabilitation is far shorten then in conventional reconstructive methods.

P174

Free flap reconstruction: Georgian experience

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Purpose: To analyze the free flaps features and to assess their outcome.
Material and methods: Study reviews 15-year experience with 98 patients submitted to microvascular surgery. The average age was 32 years (range, 7 to 57), 61 male and 37 female. Follow-up average was 30 months (range, 12 to 72). A total of 109 free flaps were designed (10 patients received 2 flaps each; 1 patient received 3 flaps) and applied for the reconstruction of defects due to trauma, tumor ablation, chronic wounds, osteomyelitis, congenital abnormalities, burn injuries, compartment syndromes. Various flaps were used: radial forearm 35, latissimus dorsi 32, scapular/parascapular 12, gracilis 6, fibula 4, toe/finger flap 14, TRAM 6.

Results: There were a total of 4 flap losses giving an overall failure rate of 3,7%. Number of problems was identified as partial flap necrosis (*n* = 8), wound infection (*n* = 4). Postoperative thrombosis requiring reexploration occurred in 7,4%. The incidence of complication was mentioned when the flap was transferred to a chronic wound and when vein grafts were needed. Flaps with vein grafts revealed a lower complications rate when two veins were repaired in the flap in comparison with only one repaired vein. The occurrence of other complications was associated with the venous anastomosis done by end-to-side technique and with the location of recipient site at the lower limb. Use of an end-to-side technique for a single arterial anastomosis had no effect on flap survival in comparison with a single end-to-end arterial anastomosis.
Conclusion: With careful prudently planning and attention to details, significant reconstruction was possible with reduce donor site morbidity.

P175

Free flaps preservation of the lower leg amputation stump

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Functional, stable knee joint and a durable below-knee amputation stump, long enough for prosthesis ambulation are a boon to the patient who suffers lower limb loss in the war. However, in some patients the injury is so close to the knee joint with insufficient local soft tissue for coverage.
We represent twelve war wounded patients with acute and chronic traumatic below-knee amputation underwent free tissue transfer in our clinic to save or to augment their stumps.
In one case we made acute free transfer in the time of guillotine amputation, at another in the treatment of chronic osteomyelitis of the bone stump, in three after radical excision of tumor-like exofitic hyperkeratotic formation of the top of the stump, and in seven for compensation of chronic ulcer of the stump. In seven cases it was unilateral amputation, and in five bilateral. All amputations were made after severe war injuries of the legs. Tibia was 8 cm (6-9) long at the time of operation, from the tibia tubercle to the top of the stump. Except in the case of urgent free flap the duration from amputation to free flap reconstruction was 7 months to 1, 5 year. In all patients we made scapular skin free flap. Average time between operation and use of prosthesis was two months. The range of motion in the knee joint was 90-100 degree. Sensibility tests showed that touch sense was first detected 6 months and established 36 months after operation. Pain sensitivity was first detected 12 months after operation. The pattern of sensibility may indicate neurotisation from the peripheral skin. However in patients who have undergone free tissue transfer to below-knee stump, stump changes may be located anywhere on the stump. The problem of ulcerations was resolved by altering stump socks.

P176

Perforator-based forearm adipofascial flaps for providing a gliding surface and soft tissue coverage over the repaired flexor tendons in complex volar wrist injuries : a clinical study

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Twenty perforator based adipofascial flaps were used in coverage of the injured tendons and nerves at the wrist level of 20 patients over a 2 year-period.All patients were admittted to the emergancy department due to complex injuries to the wrist region in the volar surface by glass crushing. The adipofascial flaps were based on one or two ‘perforator’ vessels arising from the radial artery in 12 patients and the unlar artery in 8 patients when the radial artery was injured. All patients had either median or/and ulnar nevre injuries. All flaps were measured 15-18 cm in length and 3-4 cm in width.
After dissection perforators were adentified and flaps were turned over 180 ° at a pivot point 2-3 cm located proximal to the radial or unlar styloid region.The flaps were used as a soft tissue cushion by covering the repaired injured nevres and creating a gliding surface for repaired flexor tendons in order to prevent tendon adhesions to the subcutaneos region postoperatively due to loss of soft tissue and flexor retinaculum after injury. All patient had a follow- up period of 12 months and hand rehabilitation program.

Digital movements were evaluated postoperatively at 6,12 months respectively. Physical examination of the hand and measuring the active range of motion of the proximal and distal interphalengeal joint were recorded. Movie records in mpeg-4 format by using xacti handycam (m3 sanyo ™) were used to document the movements accomplished by the digits of the injured hand.
Results : The mean active rom was 0/75, 0/80 degrees at PIP joint and 0/50, 0/50 degrees at DIP joint of all four digits at 6 and 12 months respectively.
Conclusion: Satifactory results of both digital and hand movements had been achieved in all patients after a 12 month follow-up period.

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Clinical application of fibrin glue for skin grafting of free muscle flaps

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Skin grafting is staying today actual method of reconstructive microsurgery. It applies for free flaps cover and healing of donor defects in cases of deficiency in local tissues. The most important technical moment in skin grafting is the good fixation to the recipient bed. The inadequate fixation leads to mobility of skin graft and haematoma formation, which prevent revascularization and the skin graft take. The application of traditional methods often has unsatisfactory results. Furthermore pressure dressing can disturb the microcirculation of the flap. Fibrin glue application will improve these results thanks to the complex of positive qualities as rapid and solid soft tissue adhesion, biodegradation without toxic products formation, haemostatic effect, nonspecific immunity stimulation and antibacterial action, the biological process of wound healing acceleration.
In 6 patients with different defects requiring free muscle or skin-muscle flaps transplantation with skin grafting, we used fibrin glue. In 4 cases skin grafting was made with flap transplantation immediately, and in 2 cases it was made in 1 month post op. Four patients had infected defects. In 2 cases we used free skin-muscle flaps and in other cases - free muscle flaps. The skin grafts were all split-thickness autografts and were generally meshed but nonexpanded.
In all patients, greater adherence and graft taking was noted when compared with grafting without fibrin glue. The survival of free flaps was 100%. The overall skin graft take was over 96%, with 100% take in 4 patients but 2 patients had a 90% graft take. In those 2 cases there were infected defects.
This is a retrospective review of our initial experience using fibrin glue for the skin grafting of free muscle flaps. There's excellent graft adherence, combined with a high rate of graft take. We have noted no negative effects from the use of fibrin glue.

P178

The Cook-Swartz Venous Doppler probe For the post-operative monitoring of free tissue transfers in the United Kingdom : A preliminary report

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**Introduction**
Accurate assessment of the perfusion of free tissue transfers has always been a challenge for surgeons undertaking microvascular reconstructive procedures. The complexities of flap microcirculation are often difficult to assess despite all the subjective and objective examination techniques available today, particularly when the free tissue transfer is buried, and not visible for monitoring. The Cook-Swartz Venous Doppler system is a technique for monitoring venous flow in free tissue transfer consisting of an implantable, removable, 20 MHz ultrasonic probe around the venous pedicle and a battery operated portable monitor.
**Results and Discussion**
We perceive it as a quick and easy to use system, which in our study was well received by both medical and nursing staff. It can be used in conjunction with other monitoring techniques and we found it of value following

revascularisation, during inset and in post-operative monitoring of free flaps particularly when operating outside our base hospital. We believe our initial experiences, on 24 patients, with the device, support the use of a Cook-Swartz probe as an adjunct to traditional clinical monitoring techniques. We have had no technical difficulties with its application, use and removal, so far, and we plan to continue with its use when it becomes available outside of a clinical trial.

P179

Microsurgery training by using a modified practice card and the abdominoplasty resection material

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Purpose: Practice cards are widely used in basic microsurgery training. During our training sessions, we developed a modified card that can easily be used without the necessity of frequent microscopic adjustment changes. Microsurgery training can best be performed on live animals such as the rats. But it is not always possible to obtain lab animals for microsurgery training. Additionally, it is not convenient to use the lab animals in the basic training of junior residents. So we describe alternative microsurgery training methods by using a modified practice card and the abdominoplasty resection material.
Material and methods: Our practice card has a circular shape and it can be rotated without necessity of changing the microscopic adjustments while working on different suture lines on a rubber sheet. We have also used the abdominoplasty material for training purpose. Various types of anastomosis (end to end, end to side, interposition graft) have been carried out on both the superficial inferior epigastric artery and its commitantes vein(s). Patency of the anastomosis has been checked out by infusing dye solutions such as rifampicin with an intravascular canule.
Results and conclusion: We advocate that our practice card is considerably practical for the basic microsurgical training of the junior residents, followed by fresh vascular anastomosis on abdominoplasty resection materials. Containing natural tissues and having vessels with wide calibers make the abdominoplasty materials ideal training tools.

P180

Thrombotic effect of inadvertent back wall stitch for different suture location and the vessels: Experimental study in rats

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Purpose
Although many microsurgeons believe that inadvertent back wall stitch disturbs patency at microarterial anastomosis, definitive evidence is not present. In order to demonstrate the real effect on arterial patency of inadvertent back wall stitch, the authors performed a purposeful back wall stitch model of microarterial anastomosis for femoral and carotid arteries in the rats.
Material and method
Twenty-eight carotid and 28 femoral artery anastomoses were performed with 4 different anastomosis types. Microarterial anastomosis was performed with 180 degree halving technique. Purposeful back wall stitch was applied at locations of 30, 60, 90 degrees passing opposite vessel wall as the last suture of anastomosis or no back-wall stitch was applied in control group Seven anastomoses were performed for each group. Patency was assessed at 0, 60 min and at 24 h.
Result
Femoral arteries were found trombosed more than carotid arteries in 24 hours. The only significant difference for stitch location was between 90 degrees back-wall stitch and control irrespective of the vessel factor in 24 hours. Some of the tromboses were detected in 24 hours while they were patent in 1 hour especially in carotid arteries. Histological examination confirmed the clinical judgement about the vessel's patency in histogic samples.
Conclusion

Inadvertent back-wall stitch increases trombosis in femoral artery while it did not in carotid. This may show that small arteries are more inclined to trombosis compared to larger arteries. The trombosis risk increases as the inadvertent back-wall stitch is more centrally located. Contrary to belief that inadvertent back wall stitch causes immediate trombosis, tromboses later than 1 hour and even patent anastomoses in 24 hours were observed in this. Therefore, inadvertent back-wall stitch should be included among the causes of late anastomosis problems.

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"U" - shaped microvascular suture

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Important causes of microvascular anastomosis failure are technical errors. From those - mal-alignment of vessel stumps during anastomosis and defective technique may result in inversion of vascular margins in lumen. This create high risk situation for thrombosis due to two main mechanism - interruption of the vascular endotelium continuity and local blood flow turbulences. Risk for this is higher when anastomised vessels present discrepancies in diameter and more important in thickness of vascular wall.
To prevent this we use modified placement of anasthomotic stitches. Horizontal U-shaped stitches allow to obtain perfect contact between endothelial surfaces of the vessels. Because no suture roll over the vascular margins inversion of those is excluded. Because of two impairments of this method - constraining the anasthomotic site and ischemia of vascular margins we placed only 4 of this sutures at 90°. Then anasthomosis is completed by usual sutures placed between U sutures.
Clinically this kind of vascular suture is useful when vascular pedicle is prefabricated by using of arterio-venous loop. After 4-5 days of arterial flow through venous graft two unpleasant modifications occurred - significant increasing of diameter and compensatory to pulsatile flow thickening of vascular wall. We use proposed method in 14 of such cases.
As no anastomosis failure occurred in our series we concluded that this technique is useful and reliable in special cases.

P182

New microvenous anastomosis model in rats for microsurgical instruction: The external jugular vein

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Purpose
In microsurgical instruction, the femoral vein is used frequently for microvenous anastomosis model. But the femoral vein in the rat is not completely simulating for clinical cases because it has thin wall, fragile and tends to collapse. The authors describe a new model for microvenous anastomosis, namely, the external jugular vein of rat.
Material and Methods
In 10 Wistar rats, the anatomy of external jugular vein was studied by dissection and histology. In 20 rats, the vein was anastomosed using 8-0 (N=10) and 10-0 (N=10) nylon sutures.
Results
Anatomic dissection studies showed that external jugular vein has an average diameter of 1.9 mm without tendency to collapse. Light microscopy and scanning electron microscopy revealed a larger diameter and much thicker vessel wall with a prominent tunica media and adventitia compared to femoral vein and dorsal penile vein which was previously suggested as a model. Results of microanastomosis indicated 100 % patency rate immediately after the anastomosis for 10-0 and 8-0 nylon suture groups, respectively. 100 % and 90 % patency rates (9 of 10) were obtained 1 week after the procedure in two subgroups.
Conclusion
This model presents some advantages; the vein is easily dissected with naked eye without using operating microscope because it is the largest vein of rat with a thick vessel wall without tendency to collapse. Operation

area permits training of bilateral microsurgical anastomosis using single skin incision contrary to other microvenous models. It is safe for autocanibization. It is concluded that this new model is the best simulate the clinical procedure of microvenous anastomosis because it present similarities to human large diameter flap veins particularly.

P183

New technique for upper lid paralysis reanimation

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Abstract
Upper lid paralysis can occur after a traumatic episode or a surgical procedure damaging oculomotorius nerve that is innervating the levator palpebrae superioris muscle. The current techniques provide a relative opening of the upper lid being necessary an extra extension of the head in order to obtain a good visual area. This could be unpleasant for the patient. We have selected a 52 y old female patient with a 2 y upper lid paralysis after a surgical procedure for a brain tumor. We have perform a new technique by repositioning the orbicular muscle and the levator palpebrae superioris muscle in such a way that the forces which are elevating the upper lid margin to act uniformly, keeping its concave shape. An arcade line of repositioning the muscles to the eyebrow levator muscle has realized the common place for acting the forces. We have used 6/0 continuous nylon sutures for the muscles and interrupted subcutaneous sutures for closing the wound. Steristrip has been used for skin closure. Immediate post operator results were the almost symmetrical opening of the injured eyelid without other extra movements as well as its closing without any other supplementary effort. Aesthetic result was well appreciated by the patient and the surgeon. Further ophthalmologic rehabilitation methods are necessary for facilitating improvement of the upper lid function.

P184

Scalp reduction procedures: Experimental and clinical evaluations

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The aims of the present study were: to quantitatively evaluate the effects of undermining and galeotomies as regarding to scalp reduction procedures; to test the *ex vivo* biomechanical properties of acutely expanded scalp flaps in order to quantitatively assess the efficacy of acute scalp expansion; to describe an operative technique, based on the use of three anchoring galeal flaps, aimed at reducing the percentage of “stretch back” that occurs after performing scalp reduction procedures. The obtained data confirmed the value of undermining to diminish the tension on wound margins when closing a scalp defect. There was a progressive decrease in tension required to advance the wound edge when the amount of undermining was sequentially increased. Most of this reduction occurred with the 5-cm undermining, although statistically the 15-cm undermining also resulted in a significant decrease in the tension required to close the defect. In the closing-tension interval 500 gf to 1500 gf, the mean gain of length of the flap per galeotomy was 1.67 mm, while we observed a mean 40% reduction of the closing tension after the galeotomies. Regarding the quantitative effects of intraoperative scalp expansion, the obtained data showed that the biomechanical benefits provided by acute scalp expansion were not statistically different ($p<0.05$) from those obtained by simple subgaleal undermining. The use of the described galeal flaps allowed us to obtain an 80.93 percent and an 88.09 percent stretch-back reduction at levels A1-A2 and B1-B2, respectively, indicating a positive cost/benefit ratio.

P185

Soft lifting by Aptos thread

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The aging face is known to be characterized by uneven, focal ptosis of the facial soft tissue, thus distorting the relief.
Until very recently, the main methods surgeons have been using in cases like this were limited to a classic operation on wrinkles up-lifting, and contour plasty with silicone implants.
Aim. To improve the cosmetic surgical outcome in patients suffering from facial-tissue ptosis, by means of a new specially designed suturing material, to simplify the procedure, to decrease severity and duration of the rehabilitation period.
Methods. We have developed a method of up-lifting flabby soft tissue of the aging face, and stable fixation thereof in a new, and more aesthetically advantageous position, by means of a new special thread patented and termed "aptos" (RF patent # 2139734, International Priority PST/RU 99/00263 as of July 29th, 1999). The thread is made of a metal, polymeric or biological material, on which variously directed slant cogs with pointed ends are created during production. When inserting the aptos thread into subcutaneous fat, these cogs provide even, stable gathering and up-lifting of sift tissues, thus creating a new volumetric contour.
Results. During the last 4 years (1998-2001), we used this method for treating over 400 patients. In the overwhelming majority of cases, the outcomes satisfied both the surgeons, and the patients. Inconsiderable complications and unsatisfactory outcomes were observed only in the initial period of using this method when it was tested. We easily managed to remove them without difficulty later on.
Conclusion. The method is simple to use, leaving no traces, is low-invasive, and is well tolerated by the patients. At the same time, it really is an effective means to treat the flabby, aging face, and can therefore be successfully used instead of traditional operations of ritidectomy.

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Minimal incision facelift and adjuvant techniques

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This presentation will emphasize the S lift and the use of the purse string plication of the SMAS and extended S Lift procedures including S lift with SMASectomy for the midface. The incisions for the posterior neck lift are behind the ears, on the hairline. The neck muscles and the skin are pulled separately. The Platysma and the fascia are pulled and sutured to the mastoid bone. This will improve the skin condition of the anterior neck. Treatment of the aging neck with posterior neck lift technique, ePTFE neck sling and serial platysma notching for banding will be presented. Techniques of profiloplasty including cervical liposuction, buccal fat extraction, and chin augmentation for rejuvenation of the neck by means of a posterior neck lift and the lower third of the face will be discussed.
The traditional midline suturing was not that satisfactory and with our patients a revision and scar correction in 14% of the cases were necessary. Most of the patients spoke about a persisting hardened tissue at submental region after the platysmaplasty. The patients here show platysma bands so that a marking can be made with a distance of 3-4 cm between every incision. The Serial Platysma Notching is done with an electrocauthery and repeated many times along the muscle.
Minimal Incision Facial Surgery techniques are:
1. S-Lift; Purse String formed Fixation of the SMAS to the Zygoma
2. Posterior Neck Lift with GoreTex Neck Sling
3. Serial Platysma Notching
4. Buccal Fat Extraction
5. Non-Endoscopic Temporal Lift (T-Lift)

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Downward modification of lateral canthal axis

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Purpose
We modified lateral canthal axis downward in Asian eyes, which typically have mongolian slant ( upward slanting of lateral canthal axis ) that lead other people to misunderstand as angry face, so that patients may have a softer image.
Materials and Methods
We performed downward modification of lateral canthal axis cosmetic lateral canthoplasty in 80 cases from January, 2002 to December, 2004. The age ranged from 16 to 45 with a mean age of 24 years. The postoperative follow-up was made from one month to 2 years.
We tried to get the visual effect of decreased slanting of the lower eyelid by downward modification of the lateral one third of the lower eyelid rather than by moving both lateral canthal tendons. We tucked the capsulopalpebral fascia and fixed it to the inferior border of lower tarsal plate. This procedure was done by transconjunctival approach.
The immediate postoperative result should be overcorrected because there was a tendency of recurrence within one or two months after operation. So initial overcorrection of about 1-2mm was necessary and exact approximation between lower tarsal plate and capsulopalpebral fascia was essential for satisfactory results.
Results
There was no serious complication case but mild recurrence was found, so secondary overcorrection was performed in 6 cases. Ectropion or entropion did not occur due to transconjunctival approach and tarsal plate fixation. All results were acceptable aesthetically.
Conclusion
By modifying slant of outer one third in the lower eyelid, we not only got the effect of a softer look but also got an additional effect of larger looking eyes by increased exposure of white sclera in the lateral canthal area.

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Contour restoration of the secondary deformities of zygomaticoorbital fractures with porous polyethylene implant

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Purpose :Inappopriate or untreated fractures of zygomaticoorbital area result in secondary deformities such as loss of malar projection, enophthalmos, and distopia. Secondary deformities could be corrected with osteotomies, contour restoration with implant or combination of both. In this study, mild to moderate secondary deformities of zygomaticoorbital fractures was corrected with porous polyethylene implant which is a highly biocompatible, durable, and stable material.
Material and methods: In 22 patient 24 implant were used. The number of the patients who have no surgical treatment at the time of their initial injury was 15 whereas the number of the patients who have an initial treatment but result secondary deformities was 7. Eleven of 15 patients had only loss of cheek projection and remaining 4 patient had distophia with loss of cheek projection. Remaining 7 patients had secondary deformities result from skeletal surface contour abnormality due to comminuted fractures. In 17 of the patients, we used a subsiliary approach, whilst using the old incision scar and laceration for access in the remainder. Medpor block was carved out side according to existing contour deficit and were placed in the subperiosteal plane and majority were fixed with titanium screws.
Results: Mean follow- up period was 13(6-24) months. In this follow-up period there were no implant extursion, infection and any complication due to subsiliary incision. Patients were satisfied from results.
Conclusion: Best result can be achived with porous polyethylene implant in contour restoration of mild to moderate secondary deformities of zygomaticoorbital fractures.The use of this implant in zygomaticoorbital area is safe and have minimal morbidity.

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Surgical treatment of palpebral ptosis - our experience

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Introduction: Palpebral ptosis is a common condition and have an important aesthetic and psychological impact. Frontalis suspension is the principal method to correct severe blepharoptosis. We report our experience in three-year period and comment some tricks and pitfalls. Also we propose classification based on the evolutionary state of the patient's ptosis at the time of evolution.
Material and Methods: Twelve patients with ptosis, 7 bilateral and 5 unilateral were treated using monofilament surgical suture material for frontalis suspension. We used monofilament suture from anterior tarsalis plate to frontalis muscle. The upper lid margin is elevated to level just below the superior limbus slightly overcorrected. The procedure is simple to perform through superior blepharoplasty incision with excision of the skin excess.
Results: All twelve cases were followed from 3 months to 3 years. All had satisfactory appearance and functional result.
Discussion and Conclusions: Frontalis suspension is the principal method to correct severe blepharoptosis. Various types of suspension materials have been used, including autologous fascia lata, temporalis fascia, frontalis muscle, extensor brevis tendon, silicone, sling, and monofilament surgical suture material. The most widely used classification for palpebral ptosis is based in the classic division between "congenital" and "acquired". However, in the same group there are very diferent pathologies, with distinct etiologies, prognosis and treatment (e.g. myasthenia gravis, chronic progressive ophthalmoplegia and progressive uscular dystrophy). This method is efficient in the treatment of both: evolutional and non-evolutional palpebral ptosis.

P190

Successfull treatment of keloid scar of the ear lobe with combined treatment - case report

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The scars can produce embarrassment and lack of self- confidence. The scar present finally result of complex process healing of wounded skin. There are three phases in developing scar:
- inflammation;
- proliferation;
- maturation.

In some patients proliferation phase may be prolonged, thus a large amount of collagen is laid down, then normal features are accentuated with resulting hypertrophic scar. When proliferation and maturation control is abnormal, keloids occure.
We report case of 24 year old male, who developed keloid scar of ear-lobe caused by piercing, and was treated through combined approach.
Keloid scar was surgical excised completely and wound was closed with interruptive sutures in one layer.. Ten days postoperatively stitches were removed and 1 ml. of triamcinolon acetonide was injected to prevent keloid formation.
Afterwards another 1 ml of triamcinolon acetonide was administrated 3 weeks later and the same procedure was repeted four times with interval of one month between two aplications of triamcinolon acetonide..
In the same time, new scar of ear-lobe, was treated with topical silicon gel every day. Five months after surgical excision there was a linear scar without signs of developing hypertrophic or keloid scar. Six months after surgical excision we decided to stop kenalog injection and patient was advised to continue application of topical cream.
12 months after surgical excision there was linear flattened, soft scar, light-red coloured. Patient was advised to stop application topical cream.
18 months after surgery there was no keloid or hypertrophic scar.
There is not a single option for the treatment of the developed keliod scar. The best result are obtained through combined therapy.

In our case, combined approach - surgical excision + intradermal application of triamcinolon acetonid + topical silicon gel after 18 month of follow up, results in acceptable scar and prevents appearing recurrence.

P191

DERMABOND skin closure for blepharoplasty: A review of 94 consecutive patients

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PURPOSE: DERMABOND has been available as a skin closure alternative since 1997. The purpose of this study is to review a large series of 94 consecutive blepharoplasty patients to evaluate the safety and efficacy of DERMABOND for these procedures. MATERIALS AND METHODS: A retrospective review was undertaken of 94 consecutive patients undergoing upper eyelid blepharoplasties from 1999-2004. All surgeries were performed by a single surgeon in an office operating room using local anesthesia with or without a P.O. sedative. At the completion of the blepharoplasty, the eyelid incisions were approximated with 3-4 sutures of "fast absorbing gut". One vial of DERMABOND was then used to seal both eyelid incisions. Patients were instructed to apply Maxitrol opthalmic ointment to the incisions beginning on post-op-day 7 to facilitate removal the DERMABOND and suture remnants. RESULTS: All 94 patients underwent blepharoplasty due to mechanical interference of vision. The majority of the patients were female (76%). The average age was 60 years. Eighty-four procedures (89%) were primary blepharoplasties. Three patients underwent "secondary" blepharoplasties. Seven patients underwent simultaneous ptosis repair. Five were primary and two were secondary ptosis repairs.. The use of DERMABOND resulted in a 30% reduction in operative time. There were no reports of DERMABOND spillage into the eye. All incisons healed well with no wound separations. All patients experienced improvement in vision and satisfaction with their results. CONCLUSIONS: DERMABOND is a safe and effective means of closure for blepharoplasty incisions. Application of DERMABOND requires less time than sutured skin closures.. Patient comfort is greatly enhanced.. No bandages or tapes are necessary and patients can wash their face after surgery due to DERMABOND'S waterproof seal. Postoperatively, patients avoid the discomfort of suture removal. The application of Maxitrol ointment one week after surgery facilitates removal of DERMABOND and "fast absorbing suture" remnants.

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Basal complex of the nose - rare isolated anomalies

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Purpose: Congenital defects of the allae nasi and congenital deformities of the basal complex of the nose as a solitary anomalies are extremely rare pathology. We are presenting a congenital deformities of the basal complex of the nose as a solitary anomaly in three adult people. The answer on our question why they wait so long to correct so obvious deformity was that they did not know plastic surgery could make it better. So they get more than better.
Material and methods: Two patients, male and female had isolated unilateral deformities of allae nasi, and one female had isolated allar-collumela deformity. Mean age is 19. Isolated allar defects we corrected by Denonvillier's advancement flap. The secondary defect of the lateral nasal skin is filled by a transposition flap and lining of the secondary defect was obtained by excessive undermining and advancement of the remaining intranasal mucosa. The allar-collumelar deformity was corrected by open rhinoplasty with " flying wings" after Erich technique. After we did "flying wing" approach we moved irregular allar cartilages, replace it and use it for elongation of collumela.
Results: No complications are reported.
Conclusion: All of them were absolutely satisfied so we recommend those techniques that yield full functional and very satisfy aesthetic results.

P193

Long term results with calcium hydroxylapatite for the correction of facial skeletal defects

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The synthetic filler made of biocompatible microspheres of calcium hydroxylapatite (CaHa) has been used for many years by surgeons in different specialties. Tissue fillers have recently become popular to rejuvenate the aging face. CaHa has been suggested for facial rejuvenation and to correct small deep facial defects.

**Purpose**

Present the clinical experience of 50 patients treated with Radiance for small facial defects. Report a 24 month follow up evaluation after the injection treatment .

**Materials and Methods**

Fifty patients received a subdermal injection of calcium hydroxyapatite (CaHa) (Radiesse- Bioform ) for the correction of facial skeletal defects in the forehead and nose. The microspheres of CaHa came already prepared in a 1 cc syringe
with a 27ga needle as a gel with sodium carboxymethyl cellulose, glycerine and water. No allergy tests were required and vials were stored at room temperature. One vial was equally divided into 10 insulin syringes. Each syringe contained a $10^{th}$ of 1 cc for the precise correction of small defects. No local anesthetic was used and only a bag of ice was placed on the post injection site.

**Results**

There were no significant complications from the injection. Patients tolerated the procedure well. The technique was fast and easy and produced minimal to moderate pain. An 18% absorption rate was noted after a 24 month follow up and overall appearance of the treated area or defect was considered substantially improved.

**Conclusions**

We feel optimistic with our results which are limited to skeletal areas in the nose and forehead . Photographic documentation of multiple patients will be presented. We are currently working with larger amounts and in other areas in order to feel comfortable recommending this alternative of soft tissue augmentation. Cost could be a major drawback.

P194

Reconstruction of nose with composite expanded forehead flap

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Nasal reconstruction using forehead flaps has been known since the time Suchustra in 800 B.C. We developed this technique by introducing composite flap formation with cartilagines and expanding these composite flap.
Purpose: to introduce original composite expanded forehead flap to nose reconstruction.
Material and methods:
We have used a new compound expanded forehead island flap for tip-ala-columellar repair for 37-year old woman. She was drug addict for 10 years, had sepsis and nose abscess with nose tip-ala-columellar complex necrosis. 5 stages had been used for final nose reconstruction. 1 stage was composite flap prefabrication: a three cartilage graph pieces from the 8-9 was inserted in a subcataneous forehead pocket. After 2 weeks 2 stage: implantion of 200 ml soft tissue expander. The expander has been used for 3 purpose: for forehead flap vascular pedicle prolongation second, for flap expansion and third for tissue expanders capsulae formation. Later on these capsulae have been used for nose mucosa reconstruction. The composite forehead flap expanded 2 weeks. 3 stage operation: we removed expander, composite forehead island flap excision and transposition to nose defect. The forehead defect was closed primary without any tension of skin. 4 stage operation: island forehead flap had disconnected after three weeks. Flap on nose was with good microcirculation.
Finally, 5 stage operation was done for better aesthetic result after sixth month: nose reshaping using cartilage resection and skin “Z” plastic.
Results:
Patient was satisfied with aesthetic result. Foreead wound were healed without significant scaring.
Conclusions:

1. Ribs cartilage is suitable for nose top and alar reconstruction.
2. In our experience composite forehead flap is the most suitable for partial reconstruction of the nose.
3. Tissue expansion is the very helpful for primary donor site closure.
4. The nose reconstruction is multistage procedure, require from surgeons special medicine skills and good imagination.

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Clinical assessment of acquired blepharoptosis: A 5-year review

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There have been a number of reports on the techniques for correction of acquired blepharoptosis. Despite current techniques, it is difficult to predict the final result after correction. This means that selection of a technique requires total assessment, including causes and degree of ptosis, and other elements. We would like to report on our current assessment method, which has demonstrated some utility.
The records of 280 eyes in 150 patients treated for acquired blepharoptosis over the past 5 years were reviewed. The patients ranged in age from 15 to 85. Furthermore, we classified ptosis using score of the five elements as margin reflex distance(MRD), levator muscle function, limitation of a visual field, laxity of eyelid skin, and physical symptoms as headache, stiff shoulders, and so on. The results were scored using five scales, and total scores were calculated. The degree of blepharoptosis was classified into four groups (grade0-1) based on the scores. The operating techniques were selected based on a comprehensive assessment. Aponeurotic advancement was chiefly performed while levator resection was used in 15 cases with severely poor levator function. The improvements of the grade were found in all cases after the surgical operation, despite some differences in degree.
It is important to take into account the various elements of blepharoptosis preoperatively to select a technique. We consider that our classification is useful for assessment of pre and postoperative blepharoptosis.

P196

The birth of plastic surgery : The story of rhinoplasty from the Edwin Smith papyrus to the twenty first century

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The nose is the central and most prominent feature on the human face; and on its shape, size and appearance, depends the relative facial beauty of the person. Physiognomists emphasize the importance of the nose in the category of anatomical conformations that are indicative of special traits of character; and regard it as a measure of force in nations and individuals. Since ancient times, the nose has been considered as the ‘organ of reputation’, so amputation of the nose, or *Rhinokopia*, was aimed at stripping a man of his honour - the ultimate humiliation. Although repair of nasal injuries is the oldest form of reconstructive surgery, being cited in Egyptian papyrus inscriptions such as the Edwin Smith Papyrus dating back to 2500-3000 BC, its complexity continues to challenge surgeons today. The story of rhinoplasty is one of peaks of achievement by well known individuals such as Sushruta, Branca, Tagliocozzi and Carpue. Since Roe introduce the concept of cosmetic rhinoplasty, the evolution of nasal reconstructive techniques has reached such a level that the expectation is not only to restore form and function, but also to achieve excellent cosmetic appearance. We present a succinct history of nasal reconstruction including those contributions not often cited in English literature using original quotes, techniques and ancient illustrations.

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Granulomas of the lips: a rare complication after injection of polylactic acid for aesthetic augmentation

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The demand for lip augmentation, remains high.
Aesthetic injections into lips tissues using a biodegradable filler, like Poly-L-Lactic Acid (PLA), may be followed by development of foreign-body granulomas.
We present the case of a white woman, 45-year-old, who received 3ml of
PLA into the upper and lower lips, in purpose to increase the lip volume and change the inner lip contour.
Even if, the PLA has since gained a reputation of a very safe and reliable
product, two months later, numerous granulomas appeared (submucous white nodules) to both lips, upper and lower. These nodules were palpable, consistent and sensible, and they caused a sensation of discomfort.
Our patient refused biopsy of these nodules; so the treatment was an intralesional injection of 0.5ml of Acetonide of Triamcinolone, three times with an interval of 6 weeks, into three of these nodules.
The results were encouraged to decrease the size of these white nodules but not their complete disappearance.
To the best of our knowledge, this case is the second to be reported in the literature and the first one on lips localization.
We discuss the reasons of appearance of these nodules and we try to explain them; so, the area concerned should be massaged using light pressure by the patient but she did not it ; may be, it was a reaction of foreign-body ? Was the injections of PLA too superficial?
The biodegradation of PLA allows hoping that things will spontaneously return to normal in a more or less near future.
Actually, three years and half later, we think that this filler [Poly-L-Lactic
Acid] is not appropriate for lip augmentation.

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Botulinum toxin A for axillary bromidrosis-effect and histopathological study

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**Purpose:** Axillary bromidrosis is an acrid odor thought to be caused by the bacterial composition of excessive apocrine gland secretions. Although various surgical procedures have been advocated, patients are still hesitated and looking for other solutions. Botulinum toxin A has recently been shown to be effective for axillary hyperhidrosis. Its effect on axillary odor, however, is unknown.
**Material and Methods:** Twenty patients with axillary bromidrosis were enrolled as volunteers. Botulinum toxin A (Dysport, 200 U dissolved in 0.9% sodium chloride solution) was injected intradermaly in one axilla and 0.9% sodium chloride solution in the other axilla in a randomized, double-blinded fashion. Body odor, as well as the changes of sweat production, was assessed preoperatively, and 1, 3, 6 months postoperatively. All patients received standard apocrinectomy at the end of study to identify the histopathological change.
**Results:** A significant reduction (85-100%, mean 95%) of odor intensity and sweat production was observed for the botulinum toxin A-treated side. The injected apocrine glands became flat, not decapitated and much reducing in size and numbers.
**Conclusion:** Botulinum toxin A can both ameliorate axillary hyperhidrosis and bromidrosis. The underlying mechanisms may include interference with skin microbes and denervation of apoeccrine sweat glands, but this remains to be further investigated.

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Lip augmentation

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For lip augmentation we used Biopolymer gel - Silcex. lip augmentation we maked with special "gun", whose measurement was from 0.1 to 1ml. We used needle 22G Augmentation is maked under local anesthesia. For anesthesia is used 4ml Lidocain 2% for the bouth lips. In some casis we used 10% Lidocain spray. The injection of anesthetic is given in upper and/or lower fornix.
In first step we injected the needle from anguli oris from one and then from the unother side.
Lip augmentation was done in 2-3 acts. In the first act we injected 0.6-1.1ml for the upper lip and 0.2-0.6 for the lower lip. In second act 0.4-1ml for upper and 0.2-o.4ml for the lower lip. The third act was done for correction of the asymetrie, when they occure.
The augmentation was done in 132 patiens, 123 female and 9 male.
Immediately after augmentation occure some oedema, wich duration was from 1 to 4 days. In 12 patients (0.9%) we have haemathoma located only one sided in the upper lip, wich duration was 5-10 days.
In conclusion we can say that we haven't no alergic reaction on the filler-Silcex. After injection we have no asymetrie. We have low superfitial tension

P200

6 years results of plastic quadrantectomy and neoadjuvant chemotherapy in combined treatment of stage II breast cancer

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The aim this work was to evaluate the resultrs of platic quadrantectomy and the role of neoadjuvant chemotherapy in combined treatment of stage II breast cancer pts From 01.03.1995 to 01.11. 2002 301 stage II breast cancer pts $T_{2\text{-}0}N_{0\text{-}1}$, aged 28-68 years, were treated by 2 cycles CMF. After evaluation of primary tumour's response, pts were randomized to 2 groups: group I 153 pts, group II 148 pts. Group I underwent plastic quadrantectomy (quadrantectomy + simultaneous lateral or "superior/inferior pedicle" mammoplasty), irradiation, adjuvant chemohormono therapy. Group II - modified radical mastectomy, irradiation, chemohormonotherapy. In whole group of pts (n=301) premenopausal - 70.34 %, postmenopausal - 29.66 %; In whole group of pts (n=301) lymphnode-positive (l/n+) - 49.51% In group I (n=153) l/n+ - 39.84 % In group II (n=148) l/n+ - 62.34% Partial and complete tumours response after 2 cycles of neoadjuvant chemotherapy in whole group was - 18,03 %; local recurrences - 3.76 %, dissemination - 9.84 %, died - 3.21 %. In group I local recurrences - 4.56 %, dissemination - 10.23 %, died - 3.35 %. In group II - local recurrences - 4.16 %, dissemination - 10.03%, died - 3.28 %. 6 years overall survival for group I 84 % and for group II 75 %. The aesthetic results of plastic quadrantectomy were good in 80 % of pts. Conclusion: According to our preliminary data: 1. Plastic quadrantectomy after neoadjuvant chemotherapy improved aesthetic results and quality of life in combined treatment of stage II breast cancer pts 2. Neoadjuvant chemotherapy prologs disease-free and overall survival of stage II breast cancer pts.

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The use of ipsilateral pedicled TRAM flap for breast reconstruction

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**Purpose.** In breast reconstruction most surgeons prefer contralateral pedicled TRAM flap. According to a number of operations, some advantages of ipsilateral flap are described.
**Methods.** From 2000 to 2004 40 patients (all delayed after radical mastectomy) underwent pedicled ipsilateral TRAM flap breast reconstruction.
1. TRAM flap harvesting and donor wound closure are performed according to U-M abdominoplasty. Upper M incision of abdominoplasty allows enlarging zone I with best blood supply.
2. Zone I, III and a part of zone II of ipisilateral TRAM flap are used to create a breast.
3. Liposuction is performed in muscle pedicle rotation place to reduce bulging.
4. Harvesting the ipsilateral TRAM flap n.intercostale VIII is preserved.
5. After 180$^{o}$ rotation TRAM flap zone III is located in the medial breast part where the thickness of the flap

matches the thickness of the healthy breast. Paraumbilical tissues of TRAM flap are sutured together (according to the ptosis of healthy breast) and nipple-inframammary crease is formed. Zone II, where the possibility of necrosis is increased, locates in the lateral part of reconstructed breast.
**Results.** Complications (risk groups: tobacco use, obesity, prior abdominal surgery, diabetes):
1.Major flap necrosis (>15% of volume of the flap) - 3
2.Marginal or minor subcutaneous flap necrosis - 5
3.Partial umbilicus and abdominal flap necrosis- 3
4.Abdominal bulging - 2
**Conclusions**
1.Ipsilateral TRAM flap (according to U-M abdominoplasty) 180$^{o}$ rotation allows forming conical-shaped breast, reducing tension of the muscle pedicle and preserving n. intercostale VIII (the medial part of the flap remains sensitive).
2.In zone II the excess of the tissues enables to perform an immediate necrectomy when partial or marginal necrosis occurs.

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A different approach for a long lasting moulding in breast reduction

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Breast reduction remains a challenging surgery because of the difficulty in achieving long lasting and reproducible results. We tried to apply a new method popularized for the first time by Graf (1) which apparently satisfies these two main targets.
The method devised is aimed to give more fullness especially of the upper pole of the breast, for a longer span of time and is based on a superiorly based flap bearing the areola-nipple complex, the lower pole is spared and its thickness and wideness (no less than 4 cm) tailored according to the final cup size the patients desires. It is to pay attention not to impair the blood supply coming from the perforator running at the level of the intersection between the fourth intercostal space and the mid-clavicular line. This is best done by avoiding to reduce the thickness of the inferior flap at the very base of it. Then the pivotal step is to raise a bridge at least three to four cm wide in the lower half of the great pectoralis muscle. The moulded inferior flap is shifted under the muscular bridge and anchored at its extremes to the pectoralis fascia. A greater superior mobilisation of the inferior flap may be done by the superficial cutting at its base of the deepithelialized dermis till the subcutaneous tissue. No sutures are applied between the inferior flap and the muscular bridge.
We performed this surgery in just one patient with a follow-up of six month;
What could be said, though this short follow-up, is the fullness of the upper pole and no breast cone sagging. It remains our goal to further apply this technique and better wage its advantages.
(1) Graf,R., Biggs,T.M. In search of better shape in mastopexy and reduction mammoplasty. Plast. Reconstr. Surg. 110:309,2002

P203

Rare complication after breast augmentation: a case report

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In recent years breast surgery became one of the most popular aesthetic plastic surgery procedures. The increasing number of cases and the continuous perfection of the surgical technique and skills made it possible for a big number of surgeons. From theoretical point of view many of our patients suffer from psychological disorders and diseases. Even when we are faced to a problem which seems to be related to the mental health a cautious examination should be performed.
We present a case of 32 years old woman who came for mastopexy/augmentation and we performed breast lift combined in one stage with sub pectoral augmentation. Several days after surgery the patient complained of

palpitations and chest pain. Also she had a cough, related to the surgery. We made blood analysis, examinations of the heart function, x-rays of the chest and MRI of the breast. In a view of MRI it is clearly visible a depression of the intercostal muscles provoked by the pressure of the implant. We thought that this was the reason for the chest pain, but the patient developed panic disorder and she needed psychiatric treatment two years postoperatively.
In conclusion, we believe that the analysis of such cases helps us understand better the influence of the breast surgery on the somatic and psychological health of the patients.

P204

Indications for a new anatomical soft cohesive gel prosthesis for cosmetic and reconstructive surgery

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Introduction:
An anatomical breast implant filled with soft cohesive silicone gel was introduced onto the European market by Mentor Medical Systems in 2001. This study reports the four year experience of a single surgeon with this implant. All the patients who received a Contour Profile Gel (CPG) implant for cosmetic (18 patients, 36 breasts) and reconstructive (30 patients, 37 breasts) breast surgery from March 2001 to January 2005 were studied.
Results:
48 patients with a mean age of 45 years (range = 20-69) received a total of 73 implants. The first 31 patients were reviewed in specially organised clinics and their outcomes were recently reported by Fruhstorfer and Malata, *Ann Plast Surg* 2004;53: 536-542. They were evaluated On linear analogue scales most patients were satisfied with their breast shape (mean score = 8.3) and 85% of the breasts were rated as soft (score >6).
No serious aesthetic complications such as implant malposition, rotation or significant capsular contracture were observed.
Conclusion:
Anatomical soft cohesive gel implants are well accepted by patients and not associated with an increase rate of complications. They provided natural results in our group of selected patients and can start to be adopted for general use in both cosmetic and reconstructive breast surgery.

P205

The value of MRI for the diagnosis of the silicon implants damages after breast reconstruction or augmentation in Greece

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Aim: The silicon implants are used the last 20 years for reconstruction after mastectomy or for breast augmentation. They are usually checked for injuries with mammography, u/s or MRI of the silicon implants. The purpose of the present study is the evaluation of the methods to check the patients who were treated in our Department with problems of silicon implants after breast augmentation or reconstruction. The women were checked with mammography, u/s and MRI.
Material and methods: Over the last 10 years we treated 173 women: 15 of them underwent breast augmentation and 158 reconstruction after mastectomy. 9 of them or 5.2%, had problems with the silicon implants. The problems appeared with the older implants.
Results: MRI was the best method comparing with mammography and u/s in the control of the implants (position, capsule contraction, wrinkling extravasation, gel bleed, peri-implant fluid collections).
Over and above, MRI has an advantage in the check of the (in capsular or extra capsular) rupture of the silicon

implant.
Conclusion: MRI is a reliable and reproducible technique for diagnosing implant rupture in women after breast augmentation and reconstruction.
It, plays an important role in the diagnosis of breast implant complications. It is important for plastic surgeons to know the MRI findings, which suggest the correct diagnosis, avoiding unnecessary additional procedures.

P206

Full thickness skin graft from inner thigh lifting to correct rare and severe bilateral breast deformity of localized scleroderma

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**Background:** Localized scleroderma, known as morphea is characterized by involvement of the skin in association with a few or multiple circumscribed fibrotic plaques, pigmentation changes, and atrophy. Unlike systemic scleroderma, morphea has a favorable prognosis.
Despite its benign course, morpheas can result in significant deformity when it involves the cutaneous surface of the breast.
**Case Report:** A 40-year-old lady was seen for deformity of her bilateral breasts. She was diagnosed as having morphea 12 years ago. She had fibrotic and hypopigmentated lesion on the whole skin of both breasts. Severe asymmetria and tubular appearance were prominent in both breasts due to the tethering effect of large fibrotic plaques. She also complained the pain in her breasts. There were no lesions on nipple-aerola complex. Additionally, she also had multiple skin lesions on the abdominal skin similar to that on the breasts. To correct the deformity of the breasts, whole fibrotic skin of both breasts was resected and breast parenchyma was completely released from the contracture. Both nipple-aerola complexes were kept in place. A synthetic skin substitute (Epigard) was applied on both breasts. Two weeks after the first operation, bilateral thigh lifting was performed. Full thickness skin grafts obtained from the thigh lifting operation were replaced with the synthetic skin substitutes. Postoperative period was uneventful. There has been no recurrence leading to breast deformity during the five years follow-up.
**Conclusion:** Breast deformity caused by localized scleroderma is extremely rare. We could not find any case report regarding reconstruction of **bilatera**l breast deformity caused by localized scleroderma in the literature. In cases with localized scleroderma that bilaterally involves entire skin envelopment of breast; Full-thickness skin graft obtained from the inner thigh lifting operation can be safely and effectively used to correct the beast deformity and asymmetria with minimal donor site deformity.

P207

Breast reduction and mastopexy with a vertical scar

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Background: The classic reduction mammaplasty and mastopexy produce a conical breast shape and a vertical scar or small inverted T.
Objective: The technique described in the present study introduces a new esthetic pattern for the upper pole of the breast, providing more anatomical and natural breast configuration and avoiding ptosis and conical breast shape. It leaves a vertical scar.
Methods: A total of 1260 patients were submitted to surgery between 1987 and 2004; 820 underwent reduction mammaplasty (69 cases unilateral breast reconstruction) and 440 underwent mastopexy . The minimum follow up period was 6 months to 1062 patients; whose 278 were followed during 3 years. The upper pole projection was obtained with the suture of local flaps, using one or stitches into the first and second intercostals spaces. The medial pole projection was obtained through inferior pedicle flap. whereas the projection of nipple aerolar complex (NAC) was accomplished with stitches

positioned under the NAC.
Liposuction was only performed in the lateral chest wall. The skin was resected using two elliptical incisions; one periolar with an inferior border which will be more cranial the larger the ptósis to the NAC; and the other under the areola, which will be further away from the infra mammary crease the larger the breast ptosis.
Results: All followed patients showed persistence of the immediate result, projection of the upper and medial poles, as well as NAC projection. 28 patients opted for new breast reduction surgery.
Conclusion: The suture of local flaps into first and second intercostals spaces determines the maintenance of upper pole projection, avoiding a conical shape. Liposuction restricted to the lateral chest wall prevents complications associated with breast tissue.

P208

Randomised prospective controlled trial of donor site steroid injection after autologous latissimus dorsi breast reconstruction

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The incidence of donor site seromas after autologous latissimus dorsi breast reconstruction (ALD) is ~80%, unless quilting techniques are employed, although these may interfere with shoulder function. The effect of intracavity triamcinolone injection was therefore investigated.
All patients presenting for ALD-breast reconstruction were eligible; 37 immediate and 12 delayed cases consented to entry into the triple-blind prospective randomised controlled trial. At first post-operative visit, patients were randomised to receive either intracavity triamcinolone 80mg (Group A, n=28) or saline (Group B, n=24) after aspiration to dryness. Wound complications, the number and amount of subsequent aspirations, and total days to dryness were recorded.
The incidence of adjuvant chemotherapy (A=12/28, B=7/24) and radiotherapy (A=12/28, B=9/24) was similar, and no effect upon donor site complications (Group A=3/28, Group B=2/24) was found. However the need for any further aspiration (A=16/28, B=20/21), total number of aspirations (A: median=1.0, [0-1.5]; B: median=3.5, [2-4.5]; P<0.0001), total time to dryness (A: median=12days [7-12]; B: median=35, [18-54.5]; P<0.0001), and total volume aspirated (A: median=30ml [0-80], B: median=320ml [199-520]; P<0.0001) were significantly reduced. Steroid injections were well tolerated, and there were no infective complications.
We therefore conclude that after initial aspiration intracavity injection of triamcinolone improves seroma management after ALD-breast reconstruction.

P209

Complications of breast augmentation with fat injection

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In this paper two patients with long term complications of fat injection into the breasts were presented.
Case 1: 41 years old lady was seen in the year 2000, with complaint of pain and swelling in her left breast. One month earlier she had had bilateral breast augmentation with fat injection. Examination revealed marked swelling and erythema in left breast. Ultrasound and MRI examination demonstrated fluid accumulation in both breasts. 500 cc of pus was evacuated from left breast but nothing could be evacuated from right breast. Patient recovered uneventfully. In 2004 she came to us again with the complaint of swelling in her right breast. One month earlier she had diagnosed as breast abscess and drainage was done by a general surgeon. There was no bacteriological growth. Examination revealed 10X10 cm hard mass in upper quadrant of right breast. Surgical exploration demonstrated very hard calcified mass under right pectoralis major and odorless thick collection around this mass. After total excision patient healed rapidly and stayed asymptomatic till now.

Case 2: 42 years old lady was seen in the year 2004 with bilateral large hard masses in both upper quadrants of her breasts. She had bilateral breast augmentation by fat injection in the year 2000 by the same surgeon of case 1. Both masses were excised and augmentation with silicone gel implants was performed at the same time. In four months follow up no complication was occurred.
Results: In both patients pathological examination revealed calcified fat necrosis, excessive foreign body reaction and no malignancy.
Discussion and conclusion: Fat injection is frequently used and relatively safe procedure for many parts of the body. But massive fat injection into the breast may cause serious complications and deformities even years later. If this occurs the only diagnostic and therapeutic procedure is surgical excision.

P210

Chest wall contouring for female-to-male transsexuals : my personal techinique

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There are several techniques for treating female-to-male gender identity disorders of the patient's breasts. The authors' procedures are divided into two operations. In the first poeration, a lower half periareolar incision is placed in a position to remove the breast tissue to create a flat breast. This technique is preferred when the patient's breast is not ptotic, as long scars in Japanese breasts are visible in many cases.
In the second operation, reduction of the nipple is performed. As deformity to the areola due to the periareolar incision may be encountered, the new small nipple should be positioned in the center of the areola.
27 female-to-male gender identity disorder patients have been treated .Among these series, 18 cases have been treated by this technique. In these 18 cases, one hematoma was encountered, two cases showed smal burn scar due to hemostasis, and three cases showed partial skin necrosis of the new nipple. Hematoma was treated by re-operation and hemostasis.
Among the burn scar cases, one case healed spontaneously, and another case required excision of the scar. Flattening of the new nipple was treated by peforming the same techinique again. In many cases, minor revision of the breast was necessary to create smooth surface of the breasts at the second operation when the new small nipple was created.

P211

Inframammary approach in breast aumentation

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Introduction
We used the mammary augmentation for the following categories: persones with congenital diseases, as Polland Sindrome, congenital hipotrophy or amastia, reduced development of that area, persones who suffered mastectomy for a benign or malign disease, persones who want to improve the mammary volume.
Material and method
At the beginning we used inflatable prosthesis, filled with saline solution, with smooth surface, but today we use prefilled silicon gel or hydrogel implants, with rugged surface.
In the last period of time we used primarily anatomic shape implants.
We consider that the optimal approach is submammar, because it provides a better visibility and placement under the pectoral muscle, and the haemostasis can be done properly.
The implants were initially introduced prepectoral, but now we prefer the retropectoral approach.
The suture must be very minutely done, in 3-4 layers:
1 -suture the anterior part of the pectoral muscle to the serratus anterio muscle, creating a pocket
2 -suture the inferior pole of the mammary gland to the thoracic fascia
3 - suturing the pectoral fat tissue
4 - suturing the tegument
Results

The use of the saline filled implants caused us only a moment of infatuation, because we noticed that, in time, they deflate, need to be changed and induce a simptomatic capsular retraction. We observed that the anatomic shape implants have a more natural look, a consistence closer to the normal breast and induce a minimal capsular retraction.
The submammary scar, even if it is longer because of the prefilled implants, it has a very good appearance.
Conclusions
In our experience we find that is better to use silicon gel or hydrogel prefilled prosthesis, with rugged surface, anatomic profile, retropectorally introduced through a submammary approach, with a careful intradermic suture and a proper drainage.

P212

To prevent breast ptosis in reduction mammaplasty of inferior pedicle technique: Dermal suspension and suturing together the dermis of folded breast pramid

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The inferior pedicle technique, which gives opportunity of a well-vascularized dermal paranchymal pedicle for safe nipple-areola transpositon regardless of the size of glandular resection, is one of the most widely used techniques. But its main disadvantage is buttomming out deformity in longterm because of gravity. **The purpose** of this study is to evaluate the effects of these two combined procedure in preventing this deformity.
**Method:** One of them is dermal flap suspension to pectoral fascia (passing through pectoral fascia tunnel and suture on itself) and the other is insicing and suturing dermis of both sides of folded and suspended glandular pramid.
**Result:** This procedure was performed in 20 patients betweeen 18-45 year-old (mean 28). Resected tissue was ranging between 500 and 1250 grams (mean 850 gram) we have a mean follow up of 18 moths (ranging from 8 months to 3 years). A mean increase of 1.1 cm (from 0.5 to 2 cm) in distance fom NAC to suprasternal notch. This technique is applicable to both reduction mamoplasty and mastopexies with or without reduction.
**Conclusion:** Dermal flap suspension and incising and suturing the dermis of folded breast pramid provides a long-lasting, well-defined breast shape and a solution to the tendency to recurrent ptosis

P213

Various approaches in reconstructive-plastic and esthetic mammoplasty

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Study represents aesthetic mammoplasty (augmentation, reduction and lifting of breasts) and reconstructive mammoplasty (restoration of breast after radical subcutaneous mastectomy). 134 operations were performed including 54 augmentations with silicon implants, 21 with thoracodorsal flaps, 20 reduction mamoplasty, 25 breast lifting, 5 after radical mastectomy with TRAM flaps and 9 subcutaneous mastectomy with thoracodorsal muscle by single-stage reconstruction.
Reconstructions of breast after radical mastectomy with free transplantation of TRAM flap were performed in four cases with single-stage operation by two groups of surgeons and in one case after eight years of first surgery. In all cases mobilization of TRAM flap was performed on the both upright abdominal muscles with anastomosis between two VEI ensuring arterial blood flow within proprietary zones of both anterior interventricular arteries, on its turn giving maximally steady perfusion along the whole area of TRAM flap.
Elaboration and employment of rotary transplantation of musculocutaneous flap from the broadest spinal muscle and part of a fibril of external abdominal oblique with inclusion of depithelized skin islet (broadened thoracodorsal flap) in case of augmented mammoplasty enabled to increase the breast by two sizes and correct ptosis of second degree.
In case of patients wishing to increase the size of their breasts by more than two sizes without having any obvious scars, we used silicon implants ensuring more predictable forms and sizes by using three known

methods: periareolar, axillary and submummary operations.
For patients with asthenic figures and poorly developed hypodermic-adipose cellular tissue, in order to prevent complications with simple implantation we used combined method: rotary transplantation of muscular thoracodorsal flap on the area of front thorax with following submuscular implantation of silicone implants.

P214

Tissue expansion and mamary implants for treatment of amastia in Poland syndrome

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Amastia in Poland syndrome is characterized by the complex asymmetry resulted from the summation of the absence of both pectoralis muscle and mammary gland resulting in a deficit of the skin envelope. Breast reconstruction is best achieved through several stages. Skin expansion is needed first throughout the whole pectoral region. The next step consists in replacing the expanders with final implants sustained by a latissimus dorsi flap. The last stage is breast symmetrisation.
Over a 10 year period I have treated 44 Poland syndromes: 7 with amastia, 13 with severe hypoplasia (breast volume less than 50% of the controlateral one) and 24 minor hypoplasia (volume difference less than 50%). The pectoralis major muscle was absent in all cases while the minor was missing in 6 cases. The nipple-areola complex was lateral to the medioclavicular line in 2 cases and too low in one case. Thoracic malformations were also present: 5 pectus excavatum, 7 pectus carrinatum and 4 costal arch deformities. Associated malformations of the upper limb included 7 brahidactilies, 6 sindactilies and 2 short forearm bones.
The cases with amastia were treated with skin expanders and mammary implants. The paper highlights the operative particularities of amastia in rapport with the simple mammary hypotrophy and presents the clinical results obtained.

P215

Internal titanium bra

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Since the aesthetic breast reduction surgery performed, an increasing demand for better results with minimal scars and improved anterior projection in breast reduction and augmentation surgery has lead to numerous techniques. These new techniques are; short vertical scar, periareolar procedures and recently Mastopexy with mesh support. An internal bra made out of non-resorbable materials such as ePTFE (Gore-Tex®) and polyester (polypropylene) has been tried several times by the surgeons mostly in Brazil but the results have not always been satisfactory[1]. Recently publications on resorbable internal bras with Vicryl meshes have been reported also from Brazil. In Europe the surgeons were trying an internal support technique by means of strong absorbable or non absorbable suturing materials which has the effect of creating an internal bra. The most common problems were inadequate anterior projection, hardening, foreign body reactions, persisting postoperative large breast sizes and unsatisfactory density of the breast tissue.
Since almost 2 years the author inserts a titanium mesh as an internal BRA out of titanized polypropylene- a mixed mesh which is called TiMesh® (GfE- Gesellschaft für Elektro-metallurgie in Nürnberg, Germany) and used in Germany mainly in inguinal and abdominal hernia repair which shows no foreign body reactions in compare to other mesh grafts. This so called internal titanium bra will be suspended to the pectoralis muscle, sternal bone and to the ripcage. The surgery is performed in semi-sitting position. Today's mammaplasty techniques have greatly reduced scarring but positive long term results are still missing. In our opinion the internal titanium bra mammaplasty has proven itself to be a valued benefit to patients suffering from mild forms of ptosis.

P216

A personal mastopexy technique

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Purpose: Mastopexy surgery has been modified in the past few years, as Plastic Surgeons worked to improve and maintain the breast shape and especially the “bottoming out” of the gland in the late postoperative period. A reasonable solution to the upper pole deficiency is to relocate and secure tissue from the caudal breast into the upper chest.
Material and Methods: From December 1995 to December 2004, 100 patients underwent mastopexy using our technique. Our technique modifies the Pitaguy’s one for breast reduction, design by creating a mobile, inferior, thoracic-based flap of breast tissue. We transpose the inferior breast tissue flap, up and beneath the upper breast and behind the nipple areola complex with sutures anchoring to the pectoralis fascia.
Results: With this technique we increase the projection of nipple areola complex and we achieve a good aesthetic result with minimal descent and good upper pole fullness. Experience with this technique, indicates that permanence of breast ptosis correction.
Conclusion: The concept of internal suspension to support the breast is not new, however in our technique the suspension achieves true permanent lifting in the mammary tissues from the inferior breast pole itself. It is a safe and versatile technique that offers an aesthetic and long lasting result for all sized breasts.

P217

Somatosensory function after bilateral prophylactic mastectomy

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Bilateral prophylactic mastectomy (PM) with immediate breast reconstruction is an option to reduce the risk of developing breast cancer in women with inherited high increased risk.
The purpose of this retrospective study was to evaluate the somatosensory function in the breasts at least two years after PM with immediate reconstruction with implants.
24 patients operated in 1993-2001 participated. Somatosensory examinations to study the sensation of touch, warmth, cold and pain were performed using quantitative techniques. The nipple was examined for touch sensibility only. The patients also completed a questionnaire regarding subjective sensibility. An age-matched group of 16 healthy women without previous breast surgery was used as control group.
The results from the somatosensory examinations in the patient group showed that sensibility to touch, warmth and cold, exists in the majority of the breasts but is statistically significant decreased compared with the control group ($p<0,001$). The majority of patients did not register pain stimuli under 50 ° C and this is statistically significant from the control group ($p<0,001$). Sensibility was registered in 17% of the nipples in the patient group compared to 100% of the nipples in the control group.
The majority, 2/3, of patients reported that they didn’t feel any discomfort or pain in the reconstructed breasts. 2 of 3 patients reported that the reconstructed breasts felt like breasts. The majority of the patients did not have any sexual feelings in the reconstructed breasts.
In conclusion, patients undergoing PM with immediate breast reconstruction have sensibility in the breasts after surgery but it is significantly decreased. The majority loose the sensibility in the nipples. Some patients feel discomfort in the reconstructed breasts as long as two years after surgery.

P218

Long-term satisfaction after immediate breast reconstruction is independent on surgical method

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The aim of this study was to evaluate late satisfaction of patients after immediate breast reconstruction (IBR) performed with three different surgical procedures.
Material: Eighty patients had undergone IBR during the years 1998- 2001 in our hospital. Five patients were excluded for disease progression and death. A questionnaire was sent to 75 patients with follow-up of 3-6 years. It had five items assessing general satisfaction with reconstruction and two items for aesthetic satisfaction as separate subscales (Alderman 2000). Patients were asked to respond to each item using a continuous score from

0 (very high satisfaction) to 10 (very low satisfaction).
Results: The response rate was 83%. The answers of three patients were excluded from further analysis: the only patient with implant reconstruction (who was very satisfied) and two unhappy patients who had lost their flaps for immediate surgical complications (one TRAM flap and one LD-miniflap). The final analysis was based on 21 patients with quadrantectomy and LD-miniflap, 18 patients with skin sparing or subcutaneous mastectomy (SSM/SCM) and TRAM-flap and 20 patients with SSM or SCM and extended LD-flap. The patients were very satisfied according the four items about general satisfaction (all mean values fewer than 2). However, the fifth item measuring the sufficiency of preoperative information about surgical option showed only moderate satisfaction (mean 3.5, SD 3.6). The aesthetic satisfaction was moderate: volume and shape of the breasts 3.8, SD 3.5 and natural feeling of the breasts 3.1, SD 2.9. There was no statistical difference between the results from the procedure types.
Conclusion: The patients reported high long-term general satisfaction after IBR with autologous tissue but moderate aesthetic satisfaction, independent of the surgical procedure.
Ref.: Alderman AK, Wilkins EG, Lowery JC, Kim M, Davis JA. Determinants of patient satisfaction in postmastectomy breast reconstruction. Plast Reconstr Surg 2000;106:769-76.

P219

Autologous fibrin glue in vertical mammoplasty - our experience

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Introduction: Vertical mammoplasty (acc. Lajoure) for ptotic breasts is a method that we use in our practice. During this procedure, the autologous fibrin glue (acc. Georgievski) was used, which made the operation easier and safer both for the patient and for the surgeon.
M&M: This last year (2004) we treated 5 patients (female), averige age 37,8 years old. These were patients with ptotic breasts and we performed vertical mammoplasty (acc. Lajoure) as an operative method. At the end of the operation we used the autologous fibrin glue. The fibrin glue has been already well known and broadly applied in surgical practice, but the news is that the one we used was autologous, made of FFP (fresh frozen plasma) from the patient's own blood. The FFP could be taken 6 months previously, but we took it one week before the operation and it was prepared 1-4 hours preoperatively by the transfusiologist.
Results: The patients left the hospital next day without drainage and they could join their ordinary life very soon. There was no swelling, only at one case with light redness during the wound healing that end without complication. We took out the stitches 12 day.
Conclusion: Using the autologous fibrin glue during the vertical mammoplasty technique is a very easy and safe in this era of risky blood transfusion (AIDS, hepatitis etc).
The procedure of making this autologous fibrin glue is very safe method for the patient, using her own blood. We use this autologous fibrin glue also in other operative procedures that make our work easier and safer.

P220

A rare case of asimmetry: a giant breast lipoma

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Lipoma is one of the most common benign soft-tissue tumor of the fat cells. It is a mesenchymal tumor, that arises in all parts of the body and it occupies the subcutaneous compartment. They can be sub classified according to their etiologies, localizations and dimensions: Sanchez et al. defined the giant lipoma as a lesion that is in one dimention at least 10 cm.
In this study, the authors present a rare case of breast giant lipoma .

A 27 years old caucasian woman was referred to our Breast Unit because of a severe breast asymmetry.
Five years earlier, she has noticed a mobile mass in the inferior quadrants of the right breast. This mass have been grown up trought the five mentioned years and it ended to produce a progressive breast asymmetry.
Pre-operative staging studies, including ultrasonographyc examinations and magnetic resonance images, were suggestive of a formation with characteristics of a lipomatous lesion. However, a diagnosis of these masses can be difficult because of the normal fatty breast composition. The patient was operated under general anesthesia; the whole mass was totally excised and a first morphological examination showed a wide uniform mass weighed 257 g and measured **15,5 × 9,3 ×4,5** cm. In these cases, a different diagnosis must be made with liposarcomas which are usually closely related to the dimensions of the tumor. In that case, the histopathological analysis has revealed a tumor composed by benign adipocytes.
After the resection to correct the lack of dimention and the cutaneous ptosys, the deformed breast was reshaped by mastopexy with L shape incision a similar mastopexy of the left breast was performed to obtain a symmetric result. The patient was discharged without any problem from our Breast Unit. The patient was satisfied for the good aestethic result.

P221

Single stage reconstruction of breast, choice of the source of revasculization of free autografts and specification of prevalence of tumor process

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Purpouse: Single stage reconstruction of a breast after mastectomy is an important point of women's psychological rehabilitation.
Material and methods: We offer a new method of mastectomy with axillary-subscapular-subclavian lymphadenectomy by parasternal lymph nodes removing via transcostal approach with a single stage microsurgical plasty and revasculization of TRAM-flap with internal thoracic vessels.
Parasternal lymph nodes were removed at the 2-5 intercostal level.
11 breast cancer patients have undergone a course of treatment. In 6 observations the patients had operations on account of T2NoMo stage IIa and in 5 cases on account of T2N1M0 IIb. 3 patients had tumors localized in internal quadrants of the breast. MR-imaging of chest and mediastinum was made to all of the patients for detection of metastases in parasternal lymph nodes.
Resalts: Scheduled histological study detected that 2 of 8 patients had metastases in the lymph nodes of mediastinal that had not been detected by MRI before the operation. 1 patient had early postoperative thrombosis of arterial microvascular anastomosis. Thrombectomy and reanastomosis was performed. There were no other complications.
Conclusion: Revasculization of the autograft with internal vessels together with removal of parasternal lymph nodes is an effective combination of reliable source selection and specification of prevalence of tumor process.

P222

Breast reconstruction with the use of tissue complexes with axial blood supply

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**Purpose:** to compare the results of breast reconstruction by TRAM-flap and latissimus dorsi musculocutaneous flap.
**Methods:** 66 breast reconstructions after mastectomy were made. In 24 women TRAM-flap was used and in 42 - latissimus dorsi musculocutaneous flap. For statistical treatment we used analysis of contingency tables and comparison of observed vs. expected data ($\chi^2$). At that, critical significance level was recognized as $p < 0.05$.
**Results:** Aesthetic results in these groups are comparable. But they are reached by different efforts. The lowest

operating time 330 min ($Q_{25}$-$Q_{75}$ 310-360 min), the lowest loss of blood during operation 450 ml ($Q_{25}$-$Q_{75}$ 300-550) and minimal duration of confinement to bed 1 day ($Q_{25}$-$Q_{75}$ 1-2) was marked at using the techniques with application of latissimus dorsi musculocutaneous flap. Comparing two types of breast reconstruction fewer postoperative complications are met at application of latissimus dorsi flap and they are less severe than at application of TRAM-flap.

**Conclusions:**

1. The use of latissimus dorsi musculocutaneous flap for breast reconstruction allows to reduce time of operation, volume of loss of blood, duration of postoperative rehabilitation and to lower the quantity of complications comparing with TRAM-flap technique.
2. At single-stage reconstruction of breast of small and medium size the method of choice is using latissimus dorsi musculocutaneous flap technique.
3. The main reason limiting application of latissimus dorsi musculocutaneous flap technique is its insufficient volume for reconstruction of large size breast.
4. The use of TRAM-flap is indicated at reconstruction of large size breast at single-stage and, in majority of cases, at delayed reconstruction.

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## Enlargement of volume of latissimus dorsi myocutaneous flap by distal fragment of trapezius muscle

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The main disadvantage of latissimus dorsi flap (LD flap) for breast reconstruction is insufficient volume of soft tissues to create a medium or large size breast.

**Purpose.** To find possibility of supplementary enlargement volume of LD flap by distal fragment of trapezius muscle.

**Methods.** Injection studies were carried out in 10 fresh female cadavers, died at age 35- 73, included injection of natural latex “Revultex” through thoracodorsal artery on left and right side with further dissection and measuring of vessels in the zone of interest. For statistical treatment variance analysis was applied. The accurate localization of the intramuscular distribution of the thoracodorsal artery permitted the design of LD flap for the breast reconstruction in 31 cases.

**Results.** There are arterial connections between vascular systems of the latissimus dorsi muscle and trapezius muscle in quantity of from 4 to 9 (medium 5), which are formed at the expense of anastomosises between muscular branches from 5$^{th}$ to 9$^{th}$ intercostal arteries. The largest anasomosises (0,7-0,9 mm) localize at the lower angle of the scapula and at the level of 6-7$^{th}$ thoracic vertebras, they are formed by branches of 5-7$^{th}$ intercostal arteries. Thus, arterial systems of thoracodorsal artery and descending branch of transverse artery of the neck are connected. All cases of the breast reconstruction with enlarged LD flap were successful.

**Conclusions.** Performed researches prove the possibility to form enlarged LD flap including fragment of trapezius muscle at the level of 5-7$^{th}$ thoracic vertebras.

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## DERMABOND skin closures for bilateral reduction mammaplasties: A review of 240 consecutive cases

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PURPOSE: DERMABOND has been available as a skin closure alternative since 1997. The purpose of this study is to review a large series of 240 breast reduction patients to evaluate DERMABOND closures. MATERIALS AND METHODS: A retrospective review was undertaken of 240 patients undergoing breast reduction by a single surgeon from 1999-2004. An inferior pedicle, "inverted T" technique using a Wise pattern was used for all patients. Wounds were closed with intradermal sutures of Monocryl followed by application of DERMABOND. Information from the patients' charts included age, bra cup size (pre and post op), resection weights, operative

times, and postoperative results ( relief of symptoms and satisfaction with results). Complications including delayed wound healing, hypertrophic scar revisions, and wound dehiscence were noted. Comparisons were made to an earlier series by the same surgeon using a sutured skin closure. RESULTS: The average age of partients was 40 years. The most common preoperative bra cup size was "DD" (53%) and postoperatively a "C" cup (59%). The average resection per breast was 610 grams. The average operative time (incision to closure) was 93 minutes. The overall complication rate was 16%; including delayed wound healing, 15 patients (6%); revisions for hypertrophic scars, 13 patients (5%); and wound dehiscences, 5 patients (2.4%). The majority of patients (98%) reported relief of their symptoms and satisfaction with their results. In the authors' previous review, the rate of minor wound complications was 20 %. The previous operative time averaged 116 minutes. CONCLUSIONS: The use of DERMABOND for skin closure in breast reduction is safe and effective. Complication rates are comparable to sutured skin closures. The ease and speed of application contributes to shortened operative times (23 minutes or 20% less). Patient postoperative discomfort is minimized and showering or bathing may be resumed the first week after surgery.

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Molding the latissimus dorsi flap for breast reconstruction after mastectomy

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Female breasts are considered as a symbol of motherhood, sexuality and femininity. Today many women desire breast reconstructive procedures after surgical amputation of breast due to a carcinoma.
Missing breast after surgical amputation is possible to reconstruct in several ways: using autologous tissue, synthetic materials or combination of autologous tissue and synthetic materials. Timing of the reconstruction can be immediate or delayed.
Autologus tissue provides softness and elasticity and it is very convenient due to its quality to blend in the surrounding tissue and in time it gets all of the characteristics of surrounding chest wall skin with mammary implants providing shape and size of breast.
The purpose of this paper is to display the possibilities for breast reconstruction using autologous tissue and/or silicone implants. We wish to demonstrate through five cases the possibilities for breast reconstruction with combination of autologous tissue/synthetic material, and only synthetic material. Through these reports we will show breast reconstruction with combination of latissimus dorsi flap/mammary implant and also skin-sparing mastectomy and breast reconstruction with silicone implant. These techniques are basic reconstructive procedures for breast reconstruction after mastectomy.
Also this paper should imply the need for closer cooperation between general surgeon and plastic and reconstructive surgeon and the fact that all women with amputated breasts due to a carcinoma can undergo successful breast reconstructive procedures whether using autologous tissue, combination of autologous tissue and synthetic materials or synthetic materials alone.

P226

The ballooning manoeuvre in breast augmentation

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**Purpose**
Breast augmentation is one of the most frequently performed cosmetic operations today. During the procedure often we need to check the margins of our dissection in order to complete the pocket avoiding under or over dissection. We describe a technique that could be proved quite effective in order to visualize the extent of the pocket dissection during the operation.
**Methods**
Firstly we mark the margins of our dissection on the surface of the breast. This is a useful mark for the pocket dissection during the operation. After we have dissected almost to the edges of our premarked pocket but before

we have completed the dissection we performed the ballooning manoeuvre: we insert the index and middle finger into the pocket with the tips of the fingers facing the upper surface of the pocket and we lift the breast tissue up. Thus we allow air to pass into the pocket. Immediately after that, we pull down the breast tissue and we seal with our fingers the site of the incision. The air which remained trapped into the pocket has as an effect to ballooning of breast. With this manoeuvre is much easier to visualize the margins of our dissection transferred on the surface of the breast.

**Results**

With this manoeuvre is easy to visualize the progress of the pocket dissection and to avoid over dissection, especially medially and laterally to the breast or even under dissection.

**Conclusion**

We describe a technique which we founded very useful during breast augmentation in order to assess the extension of our dissection.

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The Asplund- Davies vertical-scar breast reduction technique preserves the sub-areolar skin in the long-term: a matched comparative study with the inverted-T technique

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**Purpose**

Inferior-pole bottoming out is common following inverted-T (IT) breast reduction. This occurs because by closing the skin flaps under tension projection is created, but the skin stretches. Vertical scar (VS) mammoplasty does not rely on skin tension; projection is created by glanduloplasty, around which the skin shrinks. By wrinkling suture the distance from the lower border of the areola to the sub-mammary fold is shortened by 50%.We investigated skin thickness in patients undergoing IT and VS reduction mammoplasty.

**Materials and Methods**

Skin thickness was measured from breast and control sites using high-resolution ultrasound 18 months post-surgery. Student's t-test and Analysis of Variance were used for comparison.

**Results**

Patients were comparable for variables as tissue excision ($p>0.1$) and skin thickness at control points ($p>0.3$) Within the VS group, skin thickness did not significantly differ between the control and the operated breast sites ($p>0.1$), while in the IT group, operated dermis was thinner than non-operated skin ($p<0.05$). Comparing corresponding points, IT breast skin was significantly thinner than VS ($p<0. 05$).

**Conclusion**

This is the first report proving VS technique maintains the breast skin thickness. The deleterious effects of tissue expansion on skin thickness are well documented, but this study proves the reverse effect. VS technique maintains the quality of breast skin, which may explain the long-term preservation of breast shape.

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Breast asymmetry - the most common dilemmas

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Introduction: The assessment of results in aesthetic breast surgery often differs from the personal point of view, although anthropomorphic breast measurement for "the aesthetically perfect breast" were already determined, especially in patients with congenital breast asymmetry. Therefore the opinion about the aesthetic outcome often differs between the surgeon and the patient. So long we still have many dilemmas about the most appropriate surgical treatment for breast asymmetry correction.

Material and method: We selected patients in groups according the preoperative view and choice of surgical treatment. We presenting 5 patients with hypoplasia of one breast in comparing with another, what were corrected using Mentor silicon implants. Another 5 patients with hypertrophy of one breast, needed to perform a

reduction or suspension mammaplasty. In four cases we performed combination of augmentation and reduction mammaplasty. Those 14 female patients with an age range of 18 to 35 were operated in our Clinic in last four years. All of them had normal mammary ultrasonography and normal endocrinology status. Considering the preoperative view and expectations of the patients we did the selection of the proper technique.
Results: We achieved : enlarged, full, lifted, balanced and even breasts with nice size areolas and more even nipples, very natural result that just get better in time and high patient's satisfaction rate, relief rates of the physical and psychosocial symptoms. In two cases hypertrophic scar appeared after reduction mammaplasty and vertical skin closure produced wrinkles in one case.
Conclusion: Many dilemmas about surgical correction of breast asymmetry still persisting with every new patient but the best results achieved when patient has objective desires and expectations and accept surgeon's opinion about the procedure.

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Vertical mammaplasty and mastopexy using a horizontal mediolateral dermogladular flap. An evolution of Strombeck technique

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Purpose: Vertical mammaplasty technique although has the advantage of the absence of the horizontal scar, is related to long learning curve, high complication rate and need for scar revision. The aim of the presented method, is to improve the classic vertical mammaplasty by providing safer nipple areola transfer, good nipple sensation and reduced complication rate.
Materials and methods: We used the horizontal mediolateral dermogladular flap (as described by Strombeck), for tranfering the nipple areola complex and remodeling breast in vertical scarring mammaplasty. The above described method was used in 35 cases and a total number of 65 breasts, either for mastopexy or for breast reduction.
The sternal notch to nipple distance was 25-33 cm and the breast reduction 200-750gr. With this technique the nipple areola complex remains on the center of the mediolateral flap and resection is performed superiorly and inferiorly.
Results: In the 5-30 months follow up, no major complications were noticed, the aesthetic result is satisfactory and there were no need for scar revision in any case.
Conclusion:
The above-described technique improves the advantages of the classic vertical mammaplasty, providing safety of the nipple areola complex transfer, good nipple sensation and reduced complication rate. It also produces a nice round breast shape, preserving the vertical scar always above the inframammary fold.

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Second (repeat) reduction mammaplasty

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A lot of patients undergoing reduction mammaplasty are satisfied with their aesthetic outcome and resolution of preoperative symptoms. Inadequate excision and recurrent hypermastia are more complex and rare concerns, which require careful evaluation and treatment. A second reduction mammaplasty is an uncommonly required procedure but may occasionally be necessary in those patients who had an inadequate initial reduction. Currently, no ideal operative guidelines and publication of management exist. The **purpose** of this study to evaluate our experience on patients undergone repeated reduction mamoplasty. **Material & method:** Twenty-two patients (42 breasts) with a mean age of 26 years underwent repeat breast reduction over an 10-year period. Before the first reduction, the mean notch to nipple distance was 28.6 cm and mean nipple to inframammary crease distance was 16 cm. The mean mass of tissue excised was 650 g per breast. A number of different

pedicles were used (14 inferior, 26 superior, 2 McKissock). The nipple to inframammary crease distance was a mean of 11.2 cm before the second procedure. **Results** At the second operation, 14 patients (24 breasts) the same pedicle was used to move the NAC, and in 2 patients developed vascular compromise of the nipple-areola complex (1 partial necrosis of NAC). Where their initial pedicles transected in the second operation (10 patients, 16 breasts), 2 patients developed vascular compromise of the NAC and one partial necrosis. Recurrent reduction was performed without nipple-areola complex fails, irrespective of the initial pedicle. The mean mass of tissue excised in the second operation was 420 g per breast. We have a mean of 3 years of follow-up following the repeat reduction mammaplasty.
**Conclusion:** In the repeat breast reduction, NAC can be transferred on the same pedicle or on a thick pedicle irrespective of the initial pedicle,neovascularized breast tissue can supply new pedicle