Case Reports

Congenital Hypofibrinogenemia

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Congenital afibrinogenemia/hypofibrinogenemia is an extremely rare coagulation disorder. We describe a case of congenital hypofibrinogenemia in a 6-year female child, who presented with recurrent ecchymotic spots with no frank bleeding.

Key words: *Afibrinogenemia, Congenital hypofibrinogenemia.*

Congenital afibrinogenemia /hypofibrinogenemia is a rare inherited coagulation disorder and approximately 250 cases have been reported(1). The bleeding may vary from being mild to catastrophic(2). Hemarthrosis may develop in 20% of these patients when they may be confused with hemophilia(3). Though, the patients with congenital afibrinogenemia are symptomatic since early infancy but many of the patients who have hypofibrinogenemia (fibrinogen less than 100 mg /dL) present late and with trivial bleed.

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Case Report

A 6-year-old female child, born out of nonconsanguious marriage bond was admitted to our hospital with history of bluish spots around the eyes and thighs of one-month duration. No significant history of trauma, fever, jaundice or previous blood transfusions was recorded. Patient presented to a peripheral health center with similar complaints 1-year back but symptoms subsided within seven days and during that illness no investigation was done. No family history of similar illness was present. On examination, the child was well-nourished, pale with ecchymotic patches on the trunk and the lower limb and around both eyes with no evidence of haemarthrosis. Systemic examination was essentially normal with no organomegaly. Investigations revealed hemoglobin of 10.5g/dL, and white cell count of 5400 per cu mm, with normal differential counts. Platelets count was 2.5 lakhs per cu mm. Bleeding time (10 min, control 5 min), clotting time (>25 min, control 7 min) and prothrombin time (120 sec, control 14 sec), Activated partial thromboplastin time (480 sec, control 26 sec), thrombin time (180 sec, control 14 sec) were all abnormally prolonged. Strikingly, when the patient's blood was collected in a plain vial, there was no clot formation for 2 hours. Fibrinogen degradation product (FDP) was negative. Liver function (LFT) and Kidney function (KFT) tests were normal. Peripheral blood film did not reveal any evidence of microangiopathy, hemolysis, infection or thrombocytopenia. Absolute fibrinogen level was 35 mg / dL (normal 160-350 mg / dL). The patient was managed conservatively without blood transfusion. She was discharged with

instructions of avoiding aspirin containing compounds and for the measures to be taken in the future in the event of trauma, injuries or operations.

Discussion

These patients may present with bleed of varied severity. Our patient presented with recurrent, spontaneously occurring ecchymotic spots without major bleed. As CT, PT, APTT, TT were all prolonged, this suggested the possibility of low fibrinogen level. As absolute fibrinogen level was very low i.e. 35 mg% and acquired causes of hypofibrinogenemia were excluded by normal LFT, absence of malnutrition and exclusion of DIC (consumptive coagulopathy), a diagnosis of congenital hypofibrinogenemia was confirmed.

Congenital disorders of fibrinogen have been attributed to chromosome 4 (q26-q28) with hypofibrinogenemia commonly occurring in heterozygous and afibrinogenemia in the homozygous. Variable phenotypic expression of the unprotected heterozygous with levels of no more than 2.5 g/ L fibrinogen and protected heterozygous with normal fibrinogen levels is not clear(4). Higher rates are seen amongst the consanguineous married couples, with more incidence in males.

Though the patients may have lifelong hemorrhagic diathesis related to trauma or surgery, hemarthrosis is uncommon (20%)(3). A significant percentage may experience undue bleeding following birth trauma(2). Surprisingly, very few patients have spontaneous bleeding. This could be attributed to the von Willebrand factor (vWf) which binds to glycoprotein complex on platelets and provides a back up mechanism for platelet aggregation, particularly replacing fibrinogen. Besides, the small quantity of platelet fibrinogen may also be a facilitator leading to reduction of symptoms. There seems to be a peculiar susceptibility of these patients for spontaneous splenic rupture(5).

Acute hemorrhagic episode can be treated with either fresh frozen plasma or cryoprecipitate or fibrinogen concentrate (Cohn fraction l). The homeostatic level of fibrinogen is above 60 mg/dL. Therapy with 100 mg / kg of fibrinogen provides a hemostatic plasma level. Since the plasma half-life of fibrinogen is between 3 to 5 days, frequent infusions are not necessary(6). Treatment with either FFP [40 × body weight × (desired fibrinogen-patients fibrinogen)/l00] or cryoprecipitate (225-250 mg of fibrinogen / bag) is also effective(7). Although some authors have advocated regular prophylactic infusion of cryoprecipitate(8) but majority of them do not recommend it on account of potential dangers of blood product infusions and various thromboembolic complications (1,9,10). However, a prophylactic infusion of cryoprecipitate is mandatory in recurrent intracranial hemorrhage.

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Nomimmune Hydrops Fetalis due to Diamond-Blackfan Anemia

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We describe case report of a baby with Diamond Blackfan anemia, who presented as non-immune hydrops fetalis. The diagnosis was confirmed by measurement of red cell adenosine deaminase activity which is increased in Diamond-Blackfan anemia. At 2 years of age he is dependent on small dose of alternate day steroid to maintain his hemoglobin.

Key words: *Congenital pure red cell aplasia, Diamond-Blackfan anemia, Hydrops fetalis.*

A male baby was born at 39 weeks gestation by emergency caesarean section for fetal distress. Pregnancy was eventful till then. Parents were unrelated and the previous 3 children were healthy.

The baby was pale and floppy at birth, weighed 3.4 kg and required immediate institution of ventilatory support. He was also noted to have generalized edema, hydrocoele and ascitis but no pleural effusion. In the initial few hours the baby was stabilized by correction of severe metabolic acidosis (base excess of -18 mmo1/L), anemia (Hemoglobin 5.4 g/dL) and institution of ionotropic support. On the first day baby also developed convulsions, which necessitated phenobarbitone, phenytoin and clonazepam. CT scan showed hematoma in the temporal lobe and EEG showed burst suppression. He received prophylactic antibiotics and intravenous Aciclovir for possible herpes infection. However, maternal and baby's herpes serology was negative subsequently. On day 3 he developed persistent pulmonary

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