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Case Report

Parahemophilia in an Indian child

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Abstract

Owren's disease or Parahemophilia is an extremely rare bleeding disorder with an estimated incidence of 1 in 1 million. An 8 year old boy presented with three days history of prolonged, spontaneous bleeding from the gums. Children present with pallor and bleeding manifestations range from minor such as bleeding gums and mucosal sites without petechiae, ecchymoses or conjunctival bleeds to rarely major bleeds such as intracranial hemorrhages. Factor V assay confirmed deficiency of factor five as < 1% of normal pooled plasma.

Keywords: *Owren's Disease; Parahemophilia; Factor V*

Introduction

Owren's disease is an extremely rare autosomal recessive bleeding disorder caused due to factor V deficiency. Not more than 60 cases were reported since 1947 when Owren described it for the first time with only 3 other Indian case reported so far [1-5]. It is associated with a variable spectrum of bleeding manifestations ranging from mucosa and soft tissue bleeds to life threatening hemorrhages. The active form of Factor V (FV) is an essential cofactor in the prothrombinase complex and interacts with several coagulation factors to promote clot formation [6,7].

Case Report

An 8 year old tribal boy born of non-consanguineous marriage presented with history of spontaneous mucosal bleeding from buccal mucosa for 3 days which was present throughout the day, in small quantity. A year ago he had a minor fall but it was not followed by prolonged bleed from scalp and there was history of joint pains or throat infections. He had no history of fever, nose bleeds, melena, prolonged umbilical cord bleeding or hematoma during immunization. No siblings or family members were affected.

On general examination, he had severe pallor, no icterus or lymphadenopathy. He weighed 19 kg; height was 120 cm, BMI being 13.2 kg/m^2. There was localized gum bleeds on both the upper and lower jaws. There were no petechiae, bruises or purpura anywhere on the body. Systemic examination revealed no other abnormalities like jaundice, organomegaly or hemarthrosis. Investigations revealed ane-

mia (Hemoglobin- 6.9 g/dL). Platelet counts were normal (4,10,000/cumm). The bleeding time was 4 minutes and clotting time was 9 minutes. The Prothrombin Time [PT] was prolonged (65.5 sec) along with INR of 5.5. The activated Partial Thromboplastin Time [aPTT] was also prolonged (115 sec).

Suspecting a common pathway defect, coagulation factor assay was asked for. While all other factors were in the normal range, his Factor V levels were less than 1% of normal pooled plasma. Factor V deficiency was thus diagnosed and the parents were counseled regarding the nature of the disease along with higher risk of bleeding.

The bleeding manifestations were only limited to mucosal bleeds from buccal mucosa and gums for which the boy was treated with local application of tranexamic acid. As there was never history of major bleeds, he did not receive any fresh frozen plasma or platelet transfusion. Family was counseled regarding prevention in the form of contact sports restriction, injury prevention and tooth care. In order to find out if they were carriers, the parents were recommended a screening for Factor V levels, which they however refused.

Discussion

Spontaneous, painless bleeding diathesis without any preceding infection and with normal platelet counts may be suggestive of a common pathway defect such as parahemophilia.

FV deficiency was first described by Owren in Norway in 1947 when investigating a woman with suspected hemophilia [1,3]. It is inherited as an autosomal recessive disease and is usually inherited through two heterozygous parents passing the defective gene to their offspring [4,7]. The congenital origin of this disorder has been noted in a study reporting parahemophilia in three siblings [8]. Different mutations including missense, nonsense and frame shift mutations have been reported throughout the FV gene. The gene for FV is located on chromosome 1 at q21-25 and contains 24 introns [9].

FV also known as Proaccelerin or labile factor is a glycoprotein synthesized by the hepatocytes and megakaryocytes. It accentuated the conversion of prothrombin to thrombin. It has a anticoagulant function in inactivating factor VIII through activated protein C [6].

The clinical features of FV deficiency usually start by 6 years of age however numerous case reports have documented manifestations at neonatal period. The clinical manifestations are usually mild mucosal bleeds however rare systemic bleeds, hemarthrosis and recurrent miscarriages have been reported [10]. The most common symptoms include oral cavity bleed, nose bleeds, post-surgery or post circumcision [11]. Epistaxis is a frequent finding along with menorrhagia in women of child bearing age. Unusual sites of bleeding like nipple bleeds have also been reported.

The diagnosis is made by the concomitant increase in PT and aPTT. Further tests include clotting factor assays to assess the factor levels. Factor VIII deficiency should also be kept in mind due to likelihood of combined deficiency. A rare variety of FV deficiency is acquired due to antibodies against FV. These cases have history of prior exposure to fresh frozen plasma, Anti-Thymocyte globulin, malignancies or auto-immune disorders [12].

The management is mainly based on Fresh frozen Plasma infusions. Alternative treatment includes platelet transfusions as they are a rich source of activated FV. The aim is to maintain FV levels above 20%. The added advantage of platelet therapy is the ability of platelets to accumulate at the site of injury [12,13]. Fresh frozen plasma has also been given as a therapy but has the disadvantage of probable development of neutralizing antibodies against it. A novel plasma-derived FV concentrate has been developed but widespread use has not started as yet [12].

Conclusion

Spontaneous, painless mucosal bleeds are uncommon in children without any history of preceding infection or platelet derangements. An early evaluation for specific coagulation factor assay clinches the diagnosis.

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Conflict of Interest

None declared.

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