CASE REPORT

Acquired Platelet Dysfunction with Eosinophilia (APDE) Syndrome: A Case Report

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Abstract Acquired platelet dysfunction with eosinophilia (APDE) is a syndrome which has transient state of platelet dysfunction in the presence of marked eosinophilia. This bleeding disorder, otherwise known as “non-thrombocytopenic purpura with eosinophilia”, occurs commonly in children from South-East Asia. We report an 11 years old male child, who presented with ecchymotic patches over lower limbs, of recent onset. His hemogram revealed increased eosinophils with a normal platelet count. Coagulation screen revealed normal parameters except increase in bleeding time. Platelet aggregation studies showed normal platelet aggregation with ristocetin, reduced aggregation with ADP and no aggregation was seen with collagen.

Keywords Collagen · Ecchymosis · Platelet aggregation

Introduction

The syndrome of acquired platelet dysfunction with eosinophilia (APDE) was first recognized by Suvatte et al. in 1974. This is a syndrome which has transient state of platelet dysfunction in the presence of marked eosinophilia. This bleeding disorder, otherwise known as “non-thrombocytopenic purpura with eosinophilia”, occurs commonly in children from South-East Asia. The importance of recognizing this benign condition, which usually doesn’t require any specific therapy, is to avoid pitfalls of diagnosing more serious bleeding disorder in children with ecchymosis [1].

Case Summary

An 11 year old male child was referred to us for complaint of bluish green colored patches on lower limbs since 4 months. These patches were spontaneous in onset, seen intermittently and were self resolving. There was no significant past history of bleeding tendency. Family history of bleeding disorder was negative.

His hemogram done outside, a month before presenting to our hospital, revealed Hb-13.6 g/dl, TLC-19,000/cumm., Platelet Count-1, 60,000/cumm., DLC-P27/L28/E41/M04, Absolute Eosinophil Count-7700/cumm. and another hemogram (a week later) showed Hb-13.8 g/dl, TLC-22,000/cumm., Platelet Count- 2, 64,000/cumm., DLC-P35/L25/E36/M04. In view of eosinophilia he had received a course of Hetrazan. No other drug history (i.e. NSAIDS etc.) was present.

On examination, multiple ecchymotic patches were seen on the lower limbs of the child, 1–2 cm in size, bluish green in color. Systemic examination was normal.

At our institute, his hemogram had Hb-14.1 g/dl, TLC-10,500/cumm., DLC-N24/L60/M04/E12, Platelet Count-2,00,000/cumm., Absolute eosinophil count-850/cumm. His peripheral blood smear showed normocytic normochromic red cells and increased eosinophils. His platelets were adequate on smear, seen in clumps with normal morphology. Prolonged bleeding time of 09 min 30 s (by Ivy’s method) was noted. Normal whole blood clotting time of 11 min (by lee and white method), prothrombin time of 15 s (control-13 s), activated partial thromboplastin time of 31 s (control-30 s), thrombin time of 10 s (control-10 s), were observed. A good clot retraction and normal factor XIII screening test was seen.

Thus, platelet function tests were performed on platelet rich plasma, using dual channel optical platelet aggregometer. No aggregation with collagen (0 %), reduced aggregation with ADP (32 %), normal aggregation with ristocetin (83 %) was noted.

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i 1. CONTROL – IN BLUE

2. TEST - IN BLACK

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NORMAL PLATELET RICH PLASMA USED AS CONTROL

The diagnosis of APDE was made. Stool examination for parasites was advised and a broad spectrum antihelminthic was started. The patient was asked to come for review after 3 months. On follow up, the ecchymotic patches had resolved and his eosinophil count (AEC: 250/cumm.) had returned to normal.

Discussion

Acquired platelet dysfunction with eosinophilia (APDE) is a unique disease that has been mainly reported in the region of Thailand, Malaysia and Singapore. It has rarely been reported elsewhere, however, travelers returning from an endemic area may present with a diagnostic challenge [2]. Majority of these cases are seen in the pediatric age group, as reported previously [2–5] but few adult cases have also been reported [6]. It is slightly more common in males with a male to female ratio of 1.15:1 [3]. The usual presentation is widespread spontaneous bruising on the extremities, body and face. Severe bleeding symptoms can be detected in 8 % of these patients. Eosinophilia can be detected in 86 % of these children [3]. An absolute eosinophil count ranging from 1.9 to $7.8 \times 10^9/l$ has been seen [4]. Eosinophilia and mild leukocytosis can be observed transiently during the early onset which may be due to some immune mediated response [7]. Prolonged bleeding time has been reported in 53 % of these patients [3]. Lucas found abnormal platelet aggregation with collagen and ADP in all the cases and with ristocetin in one-fourth of the cases [4]. Parasitic infection has been reported in 56 % of the cases [3]. The parasites most commonly identified with this syndrome are *Ascaris*, *Enterobius*, and *Ancylostoma* [8], *Filaria* [4], *S. stercoralis* [6], *Toxocara* [9]. Usually the patients have a normal platelet count [3], but occasionally thrombocytopenia may be seen [10]. Abnormal platelet aggregation induced by collagen is the most common abnormality reported in these patients [3, 5, 10, 11]. Abnormal ADP release from the platelets has been detected in these patients by the absence of a second wave of aggregation during stimulation of PRP by ADP or epinephrine. Abnormal or no ATP secretion from the platelets during stimulation by ADP, epinephrine or collagen with normal ristocetin-induced platelet aggregation has also been noted [3].

We report an 11 years old male child, who presented with ecchymotic patches over lower limbs, of recent onset. His hemogram revealed increased eosinophils with a normal platelet count. Coagulation screen revealed normal parameters except increase in bleeding time. Platelet aggregation studies showed normal platelet aggregation with ristocetin, reduced aggregation with ADP and no aggregation was seen with collagen. After excluding other possible differentials, diagnosis of APDE syndrome was

made. The patient was given a course of antihelminthic therapy and asked to come for review. On follow up, the patient's bleeding tendency was resolved and absolute eosinophil count (AEC-250/cumm.) had returned to normal.

The hallmark of this disorder includes recurrent spontaneous bruising, normal hematocrit, and normal number of platelets, normal coagulogram, eosinophilia, prolonged bleeding time, abnormal platelet adhesiveness, and associated parasitic infection [1]. This syndrome runs a benign course and resolves spontaneously within 6 months to a year [1, 3]. No specific treatment has been found to be useful except, in some instances, empirical use of anthelmintics is beneficial [1, 4]. Reassurance of the patient and their parents is instrumental in this syndrome [1].

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Conflict of interest There are no conflicts of interests. During the entire process of this publication, the identity of the patient has been kept confidential and the privacy of patient has not been violated.

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