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Case Report

Parental Anxiety to Unexplained Bruising: A Case Report of Acquired Platelet Dysfunction with Eosinophilia

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Abstract

Bruising in the form of ecchymosis and purpura in a healthy child, should be taken into serious consideration when it occurs spontaneously with no logical explanation. Baseline blood investigations including blood film are mandatory to rule out malignancy. Thrombocytopenia is very common in pediatric population however platelet dysfunction is a challenging diagnosis that require extensive laboratory investigations. Acquired platelet dysfunction with eosinophilia is a syndrome that requires more awareness among pediatricians especially in Southeast Asia region to avoid parental anxiety. We report a three years old boy with a long history of spontaneous bruising that was eventually treated with anti-helminthic agent. The patient was seen by many clinicians over a period of time but unable to justify parental expectation and relieve their anxiety.

Keywords: Acquired Platelet Dysfunction with Eosinophilia; Ecchymosis; Bruises; Parental Anxiety; Parasites Infestation; Non-accidental Injury

Abbreviations

SCAN: Suspected Child Abuse and Neglect; Hb: Hemaglobin; WBC: White Blood Cells; INR: International Normalized Ratio; APDE: Acquired Platelet Dysfunction with Eosinophilia; AST: Aspartate Transaminase; ALT: Alanine Transaminase; PT: Prothrombin Time; APTT: Activated Partial Thromboplastin Time

Introduction

Acquired platelet dysfunction with eosinophilia is an acquired, transient bleeding disorder characterized by normal platelet count with raised eosinophil counts. It was previously known as nonthrombocytopenic purpura with eosinophilia. It is predominantly been reported in Southeast Asia regions. It potentially leads to diagnostic dilemma among clinicians who are less aware of the condition and in resource limited setting possibly prompts parental anxiety due to lack of reassurance. We present a case of a 3-year-old boy with prolonged history of spontaneous bruising that was investigated under as non-accidental injury by Suspected Child Abuse and Neglect (SCAN) team.

Case Report

A three-year-old boy referred to pediatric clinic with four month history of recurrent bruising. He was previously well with no medical illness, developmentally normal and up-to-date with vaccination. He had no recent trauma, invasive procedures or bleeding tendency. No family history of bleeding or malignant disorders. Parents were unsure of preceded illness and personal hygiene was fair. The bruises occurred spontaneously, seen intermittently and recurrently appearing.

He was initially seen by SCAN team after 2 weeks of symptom appeared and baseline investigation done. The blood test revealed hemoglobin (Hb) 13.1 g/dl, white blood cells (WBC) 16 x 10^9/L and platelets 200 x 10^9/L (as per Table 1). There were police report lodged in view of suspected non-accidental injury as per advice by SCAN team. He was then taken off from childminder and been looked after by grandparents.

Components	Normal range	At 2 weeks of symptoms	At 4 months of symptoms
White blood cells, x10^9/L	6-16	16.0	14.8
Hemoglobin, g/dL	11.1-14.1	13.1	13.4
Hematocrit, %	30-38	39.7	40
Red blood cells, x10^{12}/L	3.9-5.1	5.3	5.6
Platelets, x10^9/L	200-550	200	290
Actual eosinophil counts, x10^9/L	0.1-1.0	2.6	2.2
Eosinophils, %	-	16.3	14.9
Total protein, g/L	57-80	-	70
Albumin, g/L	32-47	-	43
Globulin, g/L	23-35	-	27
AST, U/L	<56	-	41
ALT, U/L	5-30	-	13
Alkaline phosphatase, U/L	104-345	-	251
Total bilirubin, umol/L	5-21	-	4
Calcium, mmol/L	2.19-2.64	-	2.28
PT, secs	11.9-15.6	-	12.3
INR	-	-	0.94
APTT, secs	26.6-38.6	-	39.8

Table 1: Blood investigations that were performed during the course of illness.

Despite under supervision of grandparents for 2 months, bruises still appearing despite no significant trauma. This has caused more anxiety to both parents and grandparents that led them to seek multiple consultations from various general practitioners as they are worried about hematological malignancies but were reassured since the child appears well and previous blood result was normal. They eventually attended our pediatric outpatient clinic for further opinion.

On examination, he was a well and active child. There were multiple patches of bruises over lower limbs, arms and left shoulder of the child in variable sizes of 1-3 cm in size and non-tender. The color were bluish green in color indication difference ages. Other systemic examination was unremarkable.

We sent routine blood tests which showed Hb 13.4 g/dL, WBC 14.8 x 10^9/L, and platelets 290 x 10^9/L and eosinophils 2.2 x 10^9/L (normal range 0.1 -1.0 x 10^9/L). He has normal renal and liver function tests with prothrombin time 12.3, INR 0.94 with prolonged activated partial thromboplastin time 39.8 seconds as illustrated in table 1. His blood film revealed occasional reactive lymphocyte, no blast cells or platelet clumps seen with significant eosinophilia (approximately 15% of total white blood cells).

Parents were reassured that this is unlikely due to hematological malignancy however we were not able to rule out other bleeding disorders. A working diagnosis of acquired platelet dysfunction with eosinophilia (APDE) was explained to parents but other diagnoses need to be excluded. There were discussion to exclude other causes that include platelet function and von Willebrand tests however our resources are limited and require to be referred to other center with high cost. Parents could not afford those tests hence we decided to treat the child with anti-helminthic agent for possible parasitic infestation. He has had 3 days course of albendazole, and no further bruises appeared after 5 days completed treatment. Ova and parasite were not seen in his stool microscopy examination.

Discussion

Bruising over prominent bony areas in children especially toddler is common to a certain extent. However, unexplained bruises are significantly concerning due to that fact it can be due to sinister causes. Idiopathic or immune thrombocytopenic purpura is the most common hemostatic disorder of childhood to present

with easy bruising [1]. It is a diagnosis of exclusion made on the basis in an otherwise well child with no symptoms and signs of malignancy, with normal blood film and coagulation profile and isolated thrombocytopenia.

APDE has been described in children as 'transient, spontaneous bruising with long bleeding times and normal platelet counts' by Mitrakul in 1975 [2]. This condition was then described in detail by Suvatte., *et al*. in their large case series involving 62 patients looking at platelet function [3]. In this study, the age ranged from 19 months to 11 years old with a mean age of 6.5 years [3]. This condition has been reported predominantly in Southeast Asian countries including Thailand, Malaysia and Singapore. There were case series in Venezuela and Sri Lanka to show the distribution of cases are along the tropical climate and equatorial regions. There has been a report of Caucasian child diagnosed with the same condition upon returning from Southeast Asia [4].

The majority of cases have a parasitic infection, such as hookworm, Trichuris, Ascaris, Enterobius or Giardia lamblia [5-7]. However, up to a quarter of patients with parasite infection might have false negative ova and parasite on multiple stool microscopy examinations. Therefore, empirical treatment with anti-helminthic agents is still been practiced even without any parasite ova in stool examinations [5].

In this case, the child has considerably a long period of unexplained ecchymosis with relatively normal blood film but raised eosinophils counts. Despite the eosinophilia was evident in the first routine full blood count, the awareness of APDE was lacking probably ~~die~~ due to distinctiveness of the disorder among the clinicians. Unfortunately, his stool microscopy examination was negative for ova and parasite. We are aware of persistent eosinophilia in APDE for few months after the onset of ecchymosis [8], and to reassure parents for further course of treatment, he was commenced on anti-helminthic agent as per Chotsampancharoen., *et al.* [5]. There is no guideline on the dose of anti-helminthic agent for APDE however Chai., *et al*. suggested for multiple dosages for heavy infestation [9].

This case is an example of how lack of verification cause a prolonged parental anxiety that lead to snowballing in chain of medical consultations. It also likely to cause breakdown of trust towards childminder as most of unexplained bruise involve medico-legal pathway and police authority. Regrettably, this case has adverse social chained reaction in term of trust between parents and childminder despite the diagnosis has been concluded.

Conclusion

Unexplained bruises are significant in children due to sinister causes. However, in view of prolonged history and meticulous family care, differential diagnoses could reveal the pathological causes. The course of APDE is benign and no treatment required. Although, further investigations are costly, treatment with anti-helminthic agent is seen as non-detrimental for parental reassurance.

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Conflict of Interest

No financial interest or any conflict of interest exists.

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