

Symmetrical Posterior Lower Limb Bruising in A Qatar 2022 FIFA World Cup Fan – A Case Report

Faizan Ahmad Awan ¹, Saqib Talat Bhatti ²

(1) MBChB MRCGP MBA, Consultant in Family Medicine, Primary Healthcare Corporation, Doha, Qatar

(2) MBChB MRCGP, Consultant in Family Medicine, Primary Healthcare Corporation, Doha, Qatar

Corresponding Author

Dr. Faizan Ahmad Awan

Email: faawan@phcc.gov.qa

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Abstract

Suspected spontaneous ecchymoses may indicate rare but serious underlying bleeding disorders. By undertaking a thorough clinical assessment and appropriately safety-netting patients, clinicians can reduce the need for unnecessary investigations and follow-up.

Objective: To report a case of symmetrical posterior lower limb bruising in a Qatari male football fan twelve-hours following his attendance at a Qatar 2022 FIFA World Cup match in Doha, Qatar.

Background: A 36-year-old previously fit and well Qatari male presented routinely to a primary health-care centre in Doha, Qatar, after waking with painless bruising to the posterior aspects of both thighs and calves. He attended a Qatar 2022 World Cup football match as a fan the evening before, and reported being completely well prior to this. He scored 0 on both the Bleeding Assessment Score and Wells' Criteria for DVT. Following a thorough history, examination and laboratory studies to exclude possible bleeding disorders, a diagnosis of simple purpura was made. The patient was reviewed a week later, and confirmed complete resolution.

Conclusions: Fit and well football fans presenting with bruising to the dorsum of the legs in a similar pattern can, following a thorough assessment, be diagnosed with simple purpura.

Key Words: Bruising, ecchymosis, football fan, soccer fan, Fan Seat Bruising

Introduction

The Qatar 2022 FIFA World Cup was an event watched by over three billion people worldwide and by over one and a half million fans in Qatar alone (3). The infrastructure and systems adopted in Qatar were state-of-the-art to enable fans to enjoy a seamlessly connected and safe footballing experience. The organisers of the FIFA World Cup worked with the World Health Organisation and Qatar Ministry of Public Health to create a legacy for sport and health (4). For the majority of Qatar's resident population, this was their first experience of attending a football World Cup. The excitement caused by the drama on the field of play was enough to cause many to jump from their seats. We report on one case of a male fan developing spontaneous excessive bruising of the lower limbs twelve hours after attending a match.

In males, spontaneous bruising may indicate serious underlying X-linked bleeding disorders such as Haemophilia A (factor VIII deficiency) or Haemophilia B (factor IX deficiency) and requires further investigation. Though these conditions can occur in females, the incidence is six times rarer and less severe than in males. 90% of people with severe disease have been diagnosed by the age of one year old, so it is unusual to develop new symptoms as an adult. Features of mild disease include delayed clotting following injury or surgery and muscle haematomas.

Von Willebrand Disease (VWD) is the most common inherited coagulation disorder, with an incidence of 1%. It is autosomal dominant, so occurs in males and females equally, and does not show complete penetrance in families. It typically presents with mild mucocutaneous bleeding, including epistaxis, menorrhagia and prolonged bleeding and has a minimal impact upon quality of life.

A Bleeding Assessment Score (1) can also be used to determine the likelihood of an underlying inherited bleeding disorder, with normal scores being <4 in adult males, <6 in adult females, and <3 in children. It differentiates the location of bleeding and gives a ranking of the type of bleeding, from trivial all the way to where a surgical intervention or blood transfusion is required to stem spontaneous bleeding. If a patient scores higher than normal, further investigations may be indicated to determine the type of bleeding disorder they have. The causes of non-traumatic bruising and their commonly used investigations are listed in Table 1.

Here, we report a 36-year-old previously fit and well Qatari male who presented routinely to a primary healthcare centre in Doha, Qatar, after waking with painless bruising to the posterior aspects of both thighs and calves. We believe that the pattern presented by the case has not been previously reported in the medical literature.

Table 1: Non-traumatic causes of bruising and their commonly used investigations

Classification of Disorder	Specific Diagnosis	Investigation
Vascular	Senile Purpura Simple Purpura Hereditary Haemorrhagic Telangiectasia Ehlers-Danlos Syndrome Osteogenesis Imperfecta Vitamin C Deficiency	Complete Blood Count (CBC) Genetic Testing Genetic Testing Genetic Testing Fasting Vitamin C, CBC
Platelet	Idiopathic Thrombocytopenic Purpura Henoch-Schoenlein Purpura Aplastic Anaemia Leukaemia or Myeloproliferative Disease Liver Disease Chronic Kidney Disease	CBC Urine dipstick Blood Film Blood Film Liver Function Tests Renal Function Tests
Coagulation	Haemophilia A or B Vitamin K Deficiency Von Willebrand Disease Amyloidosis	Clotting Screen tTg IgA, Faecal Calprotectin Thyroid Function Tests Biopsy
Drugs	<u>Promote Collagen Degradation:</u> Corticosteroids (endogenous, oral or topical) <u>Inhibit Platelet Function:</u> Aspirin, NSAIDs, Clopidogrel and SSRIs <u>Promote Thrombocytopenia:</u> Alcohol, Antibiotics, Carbamazepine and Quinine <u>Prevent Coagulation:</u> Warfarin, Heparin, Apixaban, Rivaroxaban	AM Cortisol, ACTH CBC CBC Clotting Screen

Case Report

In November, 2022, a 36-year-old previously fit and well Qatari male reported waking in the morning to find bruising on the backs of both his legs that he had never had before. He booked an appointment and came directly to the health centre in Doha, Qatar. He felt well in himself and reported no pain, neither on pressing the bruising nor on bending his knees. He did not recall ever being injured on the backs of his legs and had been told by a family member that spontaneous bruising could be from a bleeding disorder.

He gave a history of walking ten kilometres yesterday to attend a FIFA World Cup match, as reported on his smart watch. This distance included the walk from the metro station to the stadium, and back again after the final whistle. He denied having taken any medications or being injured during the match. He reported wearing his usual thobe and sandals at the match. He denied taking any medications over the last few months. He said his health was good, and he had no previous medical or surgical history, which was confirmed by his primary healthcare record.

He denied any previous bruising or epistaxis. He denied a family history of bleeding disorders or bruising, including G6PD. He reported being a non-smoker and teetotal, and working in a sedentary office job. He exercised at the gym three times a week, including two days before attending the match as a spectator. His exercise routine involved running for five kilometres and using weights to do strength conditioning. He denied ever having taken anabolic steroids, protein supplements, fat-shredders or other exercise-related medications. He had had no recent foreign travel. A systems review was normal, with no indications of sepsis or malignancy. On further questioning, he stated he had been boisterously supporting his football team by frequently jumping up from a seated position from his stadium seat.

He appeared well with neither sweating, pallor nor jaundice. His height was 175 cm and his weight was 82 kg. His pulse rate (66/min), respiratory rate (15/min), temperature (36.6°C), oxygen saturations on air (99%) and blood pressure (123/73 mmHg) were normal. Oral examination revealed neither ulceration nor bleeding gums. There was no evidence of epistaxis intra-nasally or in the pharynx. Auscultation of his chest revealed no additional heart sounds. Visual inspection of his skin surface revealed no other bruising and did not display any laxity. Palpation of his abdomen revealed no hepatosplenomegaly. There was a full range of movement of both knees, without pain and no evidence of hemarthrosis. Visual examination of the bruising indicated a linear purple pattern of superficial dermal changes in keeping with recent rubbing trauma, and was demarcated superficially in the dermis along the lower border of the long head of the biceps femoris, overlying the popliteal fossa and superior border of the gastrocnemius (Figure 1). The bruising was non-tender and of the same

temperature as the surrounding skin. There was neither calf-swelling, oedema nor evidence of thrombophlebitis. There was no calf-tenderness. Pulses in the lower limbs were all palpable and of normal character.

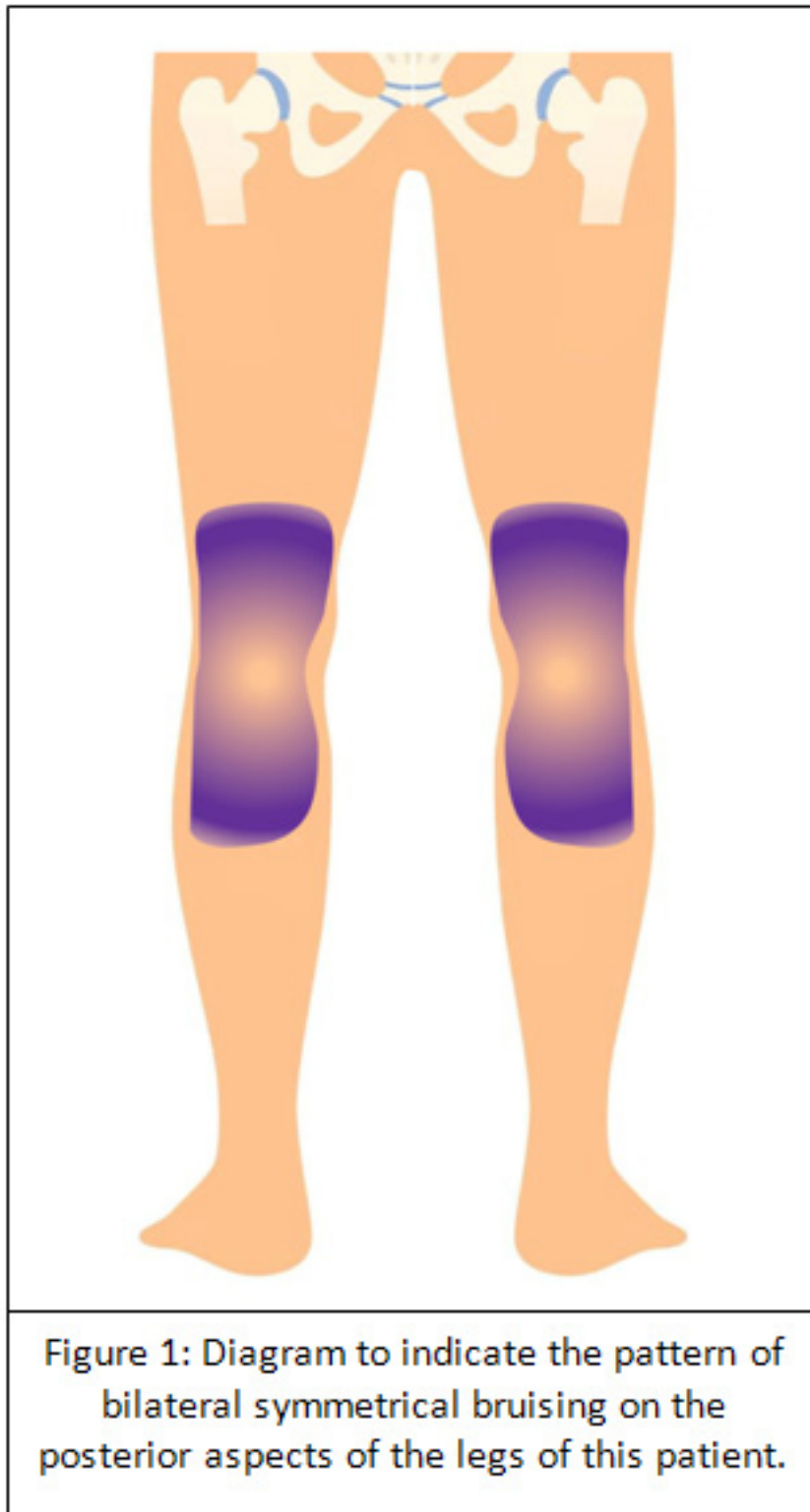
A Wells' Criteria for Deep vein thrombosis (4) was undertaken and a score of 0 was recorded. A Bleeding Assessment Score was also 0. A urine dipstick test to investigate for non-visible haematuria showed no abnormality. The patient's complete blood count and clotting screen were normal.

The patient was reassured that the pattern of bruising was in keeping with repeated excited standing and jumping whilst rubbing against the lip of a retractable plastic seat, a condition called simple purpura. The patient agreed and was reassured. He was advised to apply ice to the area twice a day, avoid strenuous exercise until the bruising had cleared and to return to the clinic if the bruising enlarged, spread elsewhere, became painful or recurred. A follow-up telephone consultation was arranged a week later. The patient confirmed that the bruising had fully resolved and that no further bruising had appeared following his attendance at another match, where he had been more careful during celebrations.

Discussion

The bruising pattern for this patient showed sequential colour changes and was painless, in keeping with simple purpura. Simple purpura is a common condition that results in recurrent bruising caused by the rupture of fragile capillaries following minor injury – it requires no investigations or treatments. After excluding bleeding disorders, there are a number of other diagnoses to consider as causes of spontaneous bruising. Exercise induced purpura occurs following strenuous exercise in the lower limbs in susceptible individuals and spares the area under socks (5). Exercise induced vasculitis tends to occur in older individuals, and presents with itching, pain or burning sensations overlying the purpuric lesions. Morel-Lavallee lesions occur following shearing force injuries, and show a persistent swelling and bruising overlying the area of bruising.

A Pubmed Search was undertaken to review similar patterns of injury using the search terms "soccer or football" and "spectator, spectators, fan or fans" and "injury, bruising or ecchymosis". Of 44 results, none of the titles or abstracts were relevant to the case study. The presentation of this injury is novel and therefore may assist other clinicians when presented with a similar pattern of fan seat bruising.



Conclusions

This case reiterates the importance of taking a detailed history of presenting complaint to determine the cause of bruising which a patient reports to be spontaneous. Spontaneous bruising can be caused by non-traumatic conditions, including haemophilia and Von Willebrand Disease, and investigations can be useful to exclude these. Fan seat bruising has not been reported in the literature and this may be a novel pattern of injury. If other cases are discovered, consideration should be made to redesigning seats at stadiums to reduce the risk to fans with bleeding disorders.

Declaration

The authors declare that they have no conflicts of interest in publishing this paper and have not received any funding to do so.

Consent

The patient provided explicit written consent for the publishing of his case.

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