

Exercise-induced petechiae (EIP) of the forearm after intense, railing-assisted squat exercise

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DESCRIPTION

Petechiae (small 1–3 mm) and purpuric rashes (slightly larger) are red, non-blanching macular lesions that appear due to bleeding into the skin from torn blood vessels. Purpureal rashes are essentially patches of petechiae. They are commonly described and seen together though petechiae are caused by intradermal capillary bleeding while purpuric lesions result from bleeding within the skin or coalescence of smaller petechiae. A spectrum of pathologies can lead to the appearance of these rashes.¹ Traditionally purpureal and petechial rashes are due to underlying thrombocytopaenic clotting disorders for instance autoimmune conditions, anticoagulant medications or due to non-thrombocytopaenic factors such as cutaneous blood vessel damage following strenuous exercise, muscular activity such as in marathon runners or after long walks.^{2,3} The former conditions require effective clinical management while resting, reassurance is all that is required for activity-induced purpureal and petechial rashes. A high index of suspicion, awareness, focused history, clinical examination and complementary investigations can assist in differentiating between the two scenarios.

Here we present a man in his 60s who developed spontaneous onset exercise-induced petechiae (EIP) of his forearm following railing-assisted squat exercise at a gymnasium.

A man in his sixth decade developed diffuse erythematous, petechial rashes predominantly over the volar aspect of both forearms (figure 1A,B), and to a lesser extent on the thighs on three successive occasions, after recently starting railing-assisted squats at his gymnasium (figure 2). He took a 40 mg angiotensin II receptor blocker tablet for hypertension and a lipid-lowering medication once daily.

For the first time these appeared after 150 squats and subsequently after 200 and 250 squats. The petechial rashes (1–3 mm) were itchy and of non-blanching nature. Apart from local discomfort, these did not result in any restriction of joint movements and the rashes disappeared spontaneously after an hour, without any residual effect.

Precautionary laboratory investigations for bleeding and clotting disorders (platelet count, bleeding and clotting time, prothrombin time and activated partial thromboplastin clotting time), and the capillary fragility test were normal.

The patient was managed with reassurance and suggested activity modification to prevent a further such episode in the future.

This is the first reported case of EIP on the forearms, after gym exercise. Such lesions have been described before as ‘purpura’ and ‘vasculitis’, which is a misnomer for our case, as the skin lesions were smaller.^{2,3} Palpability (ie, the lesion is raised) is an important diagnostic clue for inflammatory

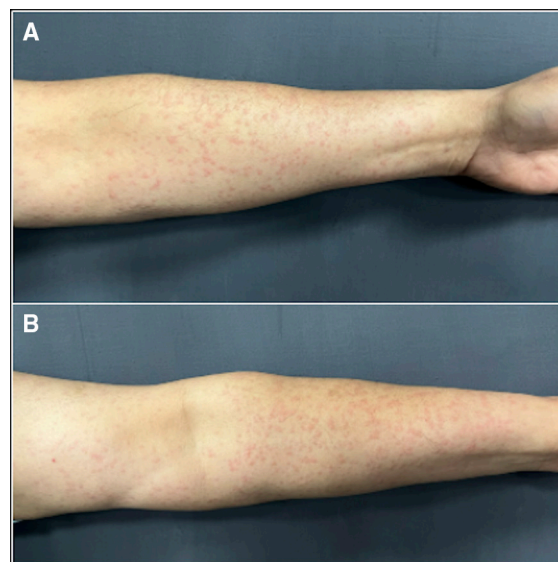


Figure 1 (A,B) Exercise-induced petechiae with diffuse erythematous, petechial, non-blanching rash present predominantly located on the volar aspect of the left forearm (A) and right forearm (B) after squatting exercise at the gymnasium.



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Figure 2 Clinical photograph showing railing-assisted squat manoeuvre being undertaken at a gymnasium by a man in his 60s. Note the position of both upper limbs.

conditions such as vasculitis, hence the term ‘palpable purpura’ is used to describe vasculitis. EIP is reported to occur on the lower legs after intense muscular activity, especially in hot weather. It is thought to develop due to venous stasis that is induced by the acute failure of the muscle pump and thermoregulation decompensation, after prolonged and unusual exercise.¹ These lesions are known to relapse after precipitating exercises. It can also probably represent the fragility of cutaneous blood vessels. EIP is a self-limiting condition which can improve with modification of the exercise regime and does not require any specific management. However, awareness of this entity is crucial to avoid unnecessary anxiety, investigations and treatment.

Patient’s perspective

‘When I noticed the rash suddenly develop following my gym visit, I was worried. I initially thought it to be due to allergies or due to some insect bite. When it reappeared 2nd and 3rd time after the same exercise, I consulted my doctor. He listened to my story, organised some basic blood tests and suggested modifying how I do my exercises’. This reassured me and has not reoccurred again.

Learning points

- ▶ Purpural and petechial rashes can appear due to a variety of acute, chronic medical or benign conditions.
- ▶ A focused history, clinical examination, awareness of aetiological causes and prompt recognition of the underlying condition are necessary to either investigate or provide reassurance to the patient.
- ▶ Exercise-induced purpura or petechiae is a self-limiting condition managed with observation and activity modification.

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Case reports provide a valuable learning resource for the scientific community and can indicate areas of interest for future research. They should not be used in isolation to guide treatment choices or public health policy.

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