

Rumple – Leede Phenomenon Associated with Leg Massager

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To the Editor:

Dear Sir,

The Rumple-Leede (RL) phenomenon/sign (also known as Acute capillary rupture syndrome) is the distal shower of petechiae that occurs immediately after the release of pressure from a tourniquet or sphygmomanometer due to rupture of the small dermal capillaries of an extremity [1,2]. It was described in 1909 by Dr Theodor Rumple and again in 1911 by Dr Carl Stockbridge Leede while treating patients with scarlet fever [1]. Historically, the Rumple-Leede Capillary-Fragility test also known as the Hess or tourniquet test has been used to assess patients for thrombocytopenia and capillary fragility. Histopathological findings consist of focal haemorrhage in the upper dermis and a perivascular lymphocytic infiltrate with focal areas of lymphocytic epidermal invasion [2]. A positive RL sign has been associated with conditions predisposing to capillary fragility such as old age, hypertension, diabetic microangiopathy, thrombocytopenia, poor platelet function, bleeding diathesis and various infectious diseases (meningococemia, rickettsial pox etc.). This sign is now part of the new WHO case definition of

dengue. While medications such as long term steroids, anti-platelets, anticoagulants and calcium channel blockers have been implicated in a positive RL phenomenon, it has also been reported in various iatrogenic settings [3-6]. Literature cites RL phenomenon due to tourniquet like effect of straps of baby carriers [7]. In this communication we report a case of RL phenomenon due to a leg massager.

A 72 year old male presented with a sudden symmetric non-progressive asymptomatic red eruption over both his lower legs of one day duration. He neither had any constitutional symptoms nor any co-morbidity. The patient was normotensive and did not have any history of easy bruising and bleeding disorders. He was not on any antiplatelet, anti-coagulant or other medications at the time of presentation.

Clinical examination revealed a bilaterally symmetrical non-blanching fine petechial eruption with sharp cut-off over the legs with linear circumferential pattern (Fig. 1). The BP was 136/84 mm of Hg with normal peripheral pulses and absent oedema. His systemic examination did not reveal any significant finding. The patient's work-up included a normal white blood cell count ($7.40 \times 10^9/L$) and platelet count ($412 \times 10^9/L$), with coagulation parameters being within the reference range (bleeding time 2 min, clotting time 5 min 30 sec, prothrombin time 16 sec, activated partial thromboplastin time 32 sec) and a random blood sugar of 92 mg/dl. The patient refused to undergo a skin biopsy. The cutaneous eruption however exhibited a configuration and distribution that lead the clinician to believe patient behaviour pattern could be the likely culprit.

Further direct questioning revealed that the patient had used a leg massager extending up to the calves just a day

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Fig. 1. Clinical photograph of lower limb of the patient showing non-blanching fine petechial eruption with sharp cut-off over the legs with linear circumferential pattern.

prior to appearance of the rash (Fig. 2). The leg massager with inbuilt rubber kneading pads, fitted around the calves, ankle and the feet, which made us think that the mechanical pressure of these pads might have resulted in traumatic acute dermal capillary rupture just distal to the kneading pads. This insult to the capillaries eventually presented as a linearly patterned petechial rash along the circumference of the calves after the pressure from the massaging pads was released; i.e. the RL phenomenon.

Its occurrence in the complete absence of any predisposing or iatrogenic factors (as in the present case) has been rarely reported so far. The probable cause of increased vascular fragility in this case was the old age related thinning of dermal connective tissue and vessel walls itself. Hence the increased venous pressure caused by the massager possibly resulted in their rupture and in the appearance of petechiae [7]. Management includes treatment of underlying cause if any, reassurance, topical Vitamin K or heparinoids. In our case, the lesions resolved spontaneously over several days without any active treatment.

A growing culture of lifestyle choices, with luxuries becoming necessities, has translated into the rampant use of popular self-rejuvenating equipments like body massage chairs to enhance the domestic comfort. We report this case to highlight the importance of careful history taking regarding lifestyle choices which may offer clues to an otherwise curious clinical presentation. Although a high index of sus-



Fig. 2. Leg massager with kneading pads around the lower limb.

picion ought to be entertained to rule out potential medical associations, the awareness regarding this alarming petechial lesion presenting without any concomitant morbidity will alleviate the anxiety of both the patient and health care provider and avoid unwarranted investigations.

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