

## Petechiae Over Face: A Case of Rumpel-Leede Phenomenon

Sir,

Rumpel-Leede (R-L) phenomenon is the sudden appearance of petechiae distal to the site of application of a tourniquet and is often associated with diabetes and thrombocytopenia.<sup>[1]</sup> Herein, we report R-L phenomenon on the face following the application of a tight band over the forehead.

A 30-year-old female presented with multiple petechiae over the bilateral periorbital area and cheeks [Figure 1] and small subconjunctival hemorrhages [Figure 2] noticed since morning. She was a known case of migraine for the last one year and was on daily oral amitriptyline 25 mg and took oral indomethacin 75 mg when needed. There was no history of similar skin lesions in the past. She had an episode of severe headache the preceding day, which did not subside by medication. She tied a scarf band tightly around her forehead and slept. She untied the band around midnight and resumed sleep. She was found to have the blood pressure (BP) of 120/84 mm Hg. The rest of the systemic and cutaneous examination were normal. Complete blood count (CBC), renal and liver function tests, bleeding and clotting time, and prothrombin time were within normal limits. She was diagnosed with the R-L phenomenon. The purpura resolved spontaneously when she visited for follow-up after 7 days.



Figure 1: Petechiae over the eyelids and periorbital region

Theodore Rumpel and Carl Stockbridge Leede first described the occurrence of purpura on the arms of patients suffering from scarlet fever distal to the site of a tourniquet. Since then, the phenomenon has been reported in several infections; diabetes mellitus (DM); nutritional deficiencies, such as scurvy; liver disease; leukemia; and in patients with radial artery catheterization, hand surgery, and noninvasive BP monitoring.<sup>[2,3]</sup>

Microvascular abnormalities seen in diabetes and other vascular diseases combined with thrombocytopenia and increased vascular pressure have been proposed to cause capillary rupture leading to petechiae and purpura.<sup>[1]</sup> This forms the basis of the capillary fragility test to assess patients with thrombocytopenia and capillary fragility. However, the phenomenon has been also seen in the absence of overt capillary fragility and thrombocytopenia in elderly or sick patients distal to the site of a tourniquet such as prolonged sphygmomanometer cuff inflation.<sup>[4]</sup> There was no cause of microangiopathy or thrombocytopenia in our patient except that she was on oral indomethacin. Indomethacin can cause leukocytoclastic vasculitis and thrombocytopenia resulting in purpura. However, there was no history of similar lesions in the past, and the patient's platelet count and coagulation profile were normal. Nonsteroidal anti-inflammatory drugs (NSAIDs), such as indomethacin inhibit platelet aggregation reversibly and may produce a small and transient prolongation of the bleeding time, such that bleeding time measurements may not exceed the normal value. The antiaggregatory effect on platelets starts within 2 h and lasts for less than 24 h.<sup>[5]</sup> We propose that our patient developed R-L phenomenon because of the combination of sustained pressure from a tourniquet and subtle platelet dysfunction produced by indomethacin.

Migraine has itself been reported to produce skin lesions such as red dot over forehead or eyelid ecchymosis.<sup>[6,7]</sup>



Figure 2: Subconjunctival hemorrhage

This is referred to as the red forehead dot syndrome and only a few cases have been reported in literature. These lesions are believed to be produced due to activation of trigeminovascular system and the release of vasoactive peptides.<sup>[8]</sup> However, red forehead dot syndrome presents with erythema over the distribution of the trigeminal nerve, and history of similar episodes bearing a temporal association with headache is present.<sup>[6-8]</sup> There was no erythema over the trigeminal nerve distribution in our patient and there was no history of similar episodes in the past, making this diagnosis less likely.

Petechiae over the eyelids can also develop due to straining such as after vigorous vomiting, coughing, sneezing, strenuous exercise, or parturition. They may also occur due to several infections, certain medications, vasculitis, and deficiency of vitamin C and K.

R-L phenomenon is usually seen over the limbs. Ours is probably the first case report of the R-L phenomenon over the face. This is also one of the few case reports where the R-L phenomenon occurred in the absence of an overt capillary fragility or thrombocytopenia. This case also highlights the importance of taking detailed history in making a diagnosis.

### Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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### Conflicts of interest

There are no conflicts of interest.

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