

Rumpel-Leede Sign: Consider Underlying Vitamin C Deficiency



To the Editor: I read with interest the article by Mohammad et al.¹ The authors report the case of a man in his 60s, in whom a petechial rash appeared on his arm after measuring his blood pressure early in his hospitalization. In the context of normal laboratory results, this finding was interpreted as an example of the Rumpel-Leede phenomenon (intracutaneous hemorrhage produced by prolonged proximal pressure, signifying increased capillary fragility). Given the specifics of this case (the patient had a history of intravenous drug use, retained needles in the forearm give a picture of self-neglect), consideration should be given to underlying vitamin C deficiency (scurvy), which can also be manifested in this manner.² More than a century ago, Rumpel and Leede described the “stasis test” in patients with scarlet fever. Shortly thereafter, Hess made a similar observation in scorbutic children (Hess test).³ As stated in this classic report, “The test is not specific for scurvy, but is a method of demonstrating a weakness of the vessel walls, whatsoever may be its cause.”^{2,3} The more generic term *tourniquet test* is also found in the medical literature, for instance, in the diagnosis of dengue fever.

This is not mere nitpicking about historical eponyms but has important practical consequences. Vitamin C deficiency is widely regarded as a disease of former times but has not vanished and is still found in certain groups at risk, including persons

with low socioeconomic status, such as individuals who use intravenous drugs.⁴ Whereas frank scurvy is rare in affluent societies, a study from the United Kingdom found a significant percentage of vitamin C deficiency in a materially deprived population. In this study, smoking and male sex were independent predictors of poor vitamin C status.⁵ Features of scurvy entail characteristic dermatologic manifestations (perifollicular purpura, corkscrew hair), gingivitis, and hemorrhage, which can be fatal. Capillary fragility due to impaired collagen synthesis is the underlying mechanism. Once diagnosed, it is easily cured by vitamin C substitution. Therefore, an early diagnosis of scurvy is of great importance. Could the authors elaborate if the patient was a smoker, if a nutritional history was obtained, and if other signs of vitamin C deficiency were actively looked for?

Physicians should remain vigilant for vitamin C deficiency and liberally obtain blood for ascorbic acid level when compatible skin findings are found in an appropriate context.

POTENTIAL COMPETING INTERESTS

The author reports no competing interests.

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1. Mohammad KO, Hyman C, Gandhi S. Rumpel Leede sign. *Mayo Clin Proc.* 2022;97(7):1230-1231.
2. Yale SH, Tekiner H, Mazza JJ, Yale ES. A bedside technique and historical aspects of the cutaneous findings in scurvy. *Int J Surg Case Rep.* 2020;71:126-127.
3. Hess AF, Fish M. Infantile scurvy: the blood, the blood-vessels and the diet. *Am J Dis Child.* 1914;8:386-405.
4. Olmedo JM, Yiannias JA, Windgassen EB, Gornet MK. Scurvy: a disease almost forgotten. *Int J Dermatol.* 2006;45(8):909-913.
5. Mosdøl A, Erens B, Brunner EJ. Estimated prevalence and predictors of vitamin C deficiency within

UK's low-income population. *J Public Health (Oxf).* 2008;30(4):456-460.

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In Reply—Rumpel- Leede Sign: Consider Underlying Vitamin C Deficiency



To the Editor: We thank Dr Martin Windpessl for his interest in our case of Rumpel-Leede sign. As was pointed out, the cutaneous manifestation of a petechial rash should also suggest vitamin C deficiency. On discovery of the rash, our team did include vitamin C deficiency as part of the differential, consulted with the dermatology service, and sent a vitamin C level that returned within normal limits. We regret not being able to elaborate on this work-up in our initial manuscript because of the word limit associated with submissions of this nature. Whereas consideration of vitamin C deficiency is certainly warranted, previous reports of cutaneous manifestations of vitamin C deficiency describe a diffuse, bilateral pattern of the rash.¹⁻³ Thus, in the setting of a normal vitamin C level and a sharply demarcated, unilateral, petechial rash in a patient with known risk factors for vascular fragility, we determined that this presentation was likely to be an occurrence of the Rumpel-Leede sign.

POTENTIAL COMPETING INTERESTS

The authors report no competing interests.

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