

NOTES & COMMENTS

Response to “Severe scurvy in an adult male without clear risk factors for nutritional deficiency”

To the Editor: I read with great interest the article by Day et al¹ after having a similar experience during my residency. We had a patient with unexplained chronic pain, weakness, autonomic instability, anemia, and a purpuric rash that resulted in repeated admissions. Eventually, the dermatology department was consulted, and after the skin examination showed corkscrew hairs and perifollicular petechiae, the patient was given a diagnosis of scurvy. He improved dramatically within 48 hours after vitamin C supplementation.

During the consultation, I became interested in scurvy and, similar to Day et al,¹ was shocked to discover that the rates of vitamin C deficiency are startlingly higher in the general population than we expect and that scurvy can develop quickly within 3–6 months. During my reading, it became apparent that smokers are uniquely susceptible to vitamin C deficiency for a few reasons. Smokers are estimated to require 35 mg more (approximately 50% more!) ascorbic acid per day and have lower serum levels of ascorbic acid than nonsmokers when measured in cross-sectional studies.² Smokers have twice the metabolic turnover of ascorbic acid of nonsmokers, possibly due to increased catabolism or circulating products that oxidize ascorbic acid.^{3–5}

As such, it is hard to say that the case presented does not have obvious risk factors for vitamin C deficiency. A 20–pack-year history of smoking at age 39 years is not insignificant and amounts to 145,600 cigarettes. Whether this was done in 20 years

or 10 is not clear. Those who smoke more than 1 pack per day have been shown to have lower vitamin C levels than those who smoke 1 pack per day, which alone is sufficient to decrease vitamin C levels.⁵ Heavy smoking should therefore be considered a risk factor for scurvy.

Jason Mathis, MD

From the Department of Dermatology, University of Utah, Farmington, UT

Funding sources: None.

Conflicts of interest: None disclosed.

Correspondence to: Jason Mathis, MD, Department of Dermatology, University of Utah, 165 North University Ave, Farmington, UT 84025

REFERENCES

1. Day W, Gyurjyan-Bunch A, Van Voorhees A. Severe scurvy in an adult male without clear risk factors for nutritional deficiency. *JAAD Case Rep.* 2019;5(4):309-311.
2. Schleicher RL, Carroll MD, Ford ES, Lacher DA. Serum vitamin C and the prevalence of vitamin C deficiency in the United States: 2003-2004 National Health and Nutrition Examination Survey (NHANES). *Am J Clin Nutr.* 2009;90(5):1252-1263.
3. Levine M, Rumsey SC, Daruwala R, Park JB, Wang Y. Criteria and recommendations for vitamin C intake. *JAMA.* 1999;281(15):1415-1423.
4. Hirschmann JV, Raugi GJ. Adult scurvy. *J Am Acad Dermatol.* 1999;41(6):895-906; quiz 907-10.
5. Schectman G. Estimating ascorbic acid requirements for cigarette smokers. *Ann N Y Acad Sci.* 1993;686:335-345; discussion 345-6.

<https://doi.org/10.1016/j.jdc.2019.06.018>