

Modern-day scurvy

Michael Colacci MD, Wayne L. Gold MD, Rupal Shah MD MHPE

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A 37-year-old woman with a history of opioid use disorder and posttraumatic stress disorder presented with lower-extremity purpura, gingivitis and arthralgia. She had resided at a homeless shelter for 3 months and had been skipping meals because of financial insecurity. Dietary history showed predominant intake of fast foods with minimal intake of fruits or vegetables. Examination showed gingival inflammation (Appendix 1, available at www.cmaj.ca/lookup/suppl/doi:10.1503/cmaj.190934/-/DC1) and diffuse lower-extremity nonpalpable purpura in a perifollicular distribution (Figure 1). Laboratory investigations showed microcytic anemia, with normal platelet count and coagulation studies. Serologic testing for vasculitides, hepatitis B and C viruses, HIV and cryocrit were negative. A skin biopsy showed erythrocyte extravasation, hemosiderin deposition, and fibrin thrombi within small blood vessels; there was no evidence of dermatitis or vasculitis.

The dietary history, dermatologic examination and skin biopsy findings suggested a diagnosis of hypovitaminosis C (scurvy), confirmed with an undetectable vitamin C level. Within 3 weeks of the patient starting ascorbic acid supplementation, her condition completely resolved.

Hypovitaminosis C is rarely seen in high-income countries in the present day. At-risk populations include those with low socioeconomic status, alcohol use disorder, gastrointestinal malabsorption and poor nutrition, including those with food insecurity.¹ It can be difficult to differentiate early signs and symptoms of hypovitaminosis C from vasculitis and disorders of coagulation.

Hypovitaminosis C can develop after 1–3 months of inadequate citrus fruit or vegetable intake.¹ Vitamin C is integral for collagen formation, and deficiency can lead to vascular and tissue fragility, which caused the purpura, gingivitis and arthralgia observed in this patient.¹ Vitamin C is also important for iron absorption, and deficiency can contribute to the development of anemia. Early symptoms include dermatologic manifestations, anemia, arthralgia, fatigue and mood changes. Late-onset symptoms may include hemolysis, neuropathy and seizures.² Recent population studies have estimated a 40% prevalence of hypovitaminosis C among people with low income, although most are clinically asymptomatic.³ This case serves as a reminder to obtain a detailed nutritional history in at-risk patients who present with gingival inflammation, purpura or classic corkscrew hairs.



Figure 1: Lower-extremity perifollicular hemorrhages and purpura in a 37-year-old woman with a history of homelessness and food insecurity.

References

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Affiliations: Department of Medicine (Colacci, Gold, Shah), University of Toronto; Divisions of Infectious Diseases (Gold) and General Internal Medicine (Gold, Shah), University Health Network, Toronto, Ont.

Correspondence to: Michael Colacci, michael.colacci@utoronto.ca