



Scurvy Caused by Financial Difficulty in the COVID-19 Pandemic

● Hirotake Ikeda¹, ● Hirohisa Fujikawa^{1,2}, ● Satoshi Mizuma¹

¹Department of Internal Medicine, Suwa Central Hospital, Nagano, Japan

²Center for General Medicine Education, School of Medicine, Keio University, Tokyo, Japan

A healthy 49-year-old male with no major illnesses, mental disorders, or history of drug or alcohol abuse presented with difficulty walking. One month earlier, he observed purpura and subcutaneous hemorrhages in the lower extremities and progressively developed arthralgia, walking difficulty, and new-onset epistaxis two weeks prior to consultation. The lower extremity examination revealed subcutaneous and perifollicular hemorrhages as well as the presence of corkscrew hairs (Figure 1). Laboratory examination revealed no abnormalities in platelet count, coagulation tests, or bleeding time. Based on the presence of corkscrew hairs and spontaneous hemorrhages alongside normal coagulation studies, scurvy was suspected, which was corroborated by a comprehensive history-taking. The patient disclosed that he had lost his job more than a year earlier due to the COVID-19 pandemic, resulting in financial constraints. Consequently, for six months, he consumed only natto, which is fermented soybeans, and eggs on rice, which are popular foods in Japan but provide low-ascorbic acid nutrition. Ascorbic acid assessment revealed levels of less than 0.2 µg/ml (reference range: 4.7-17.8 µg/ml), confirming the diagnosis of scurvy. Additional nutritional investigations demonstrated deficiencies in vitamin B1, vitamin B12, folate, and zinc. He was subsequently advised on ascorbic acid, vitamin B1, vitamin B12, folate, and zinc supplementation and dietary adjustments, leading to the improvement of symptoms

without recurrence. Written informed consent was obtained from the patient.

Scurvy is caused by ascorbic acid or vitamin C deficiency. Vitamin C is required for collagen formation; hence, its deficiency results in impaired collagen synthesis and vascular disruption.¹ This condition can manifest with a variety of clinical symptoms, such as anemia, myalgia, and easy bruising, within a few months of consuming an ascorbic acid-deficient diet.² In most patients, routine laboratory examination results appear normal. Corkscrew hairs and perifollicular hemorrhages are characteristic physical findings in scurvy.³ However, skin lesions are often misdiagnosed as resulting from hematological diseases such as deficiency of coagulation factors. Failure to measure vitamin C can result in the delayed diagnosis of scurvy, which can be fatal.⁴

While scurvy is quite uncommon in developed countries, it is by no means a disease of the past.^{1,5} This condition has been reported in severely malnourished individuals due to chronic illnesses or an unbalanced diet.^{4,5} In the present case, the patient had been eating only natto and eggs on rice due to the poverty caused by the COVID-19 pandemic. Although the food he consumed was rich in protein, carbohydrate, fat, and many kinds of essential vitamins, it had relatively little vitamin C. This case demonstrates that scurvy is a “modern disease,” which may result from financial constraints and the dietary culture in Japan, which is nutritionally adequate but lacking in vitamin C.

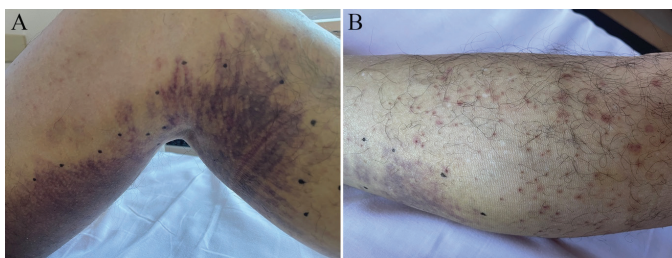


FIG. 1. (a) Subcutaneous hemorrhages in a 49-year-old man. (b) Perifollicular hemorrhages and corkscrew hairs.

Informed Consent: Written informed consent was obtained from the patient.

Authorship Contributions: Concept- H.I., H.F., S.M.; Design- H.I., H.F., S.M.; Supervision- H.F., S.M.; Materials- H.I., S.M.; Data Collection or Processing- H.I., S.M.; Analysis or Interpretation- H.I., H.F., S.M.; Literature Search- H.I., H.F., S.M.; Writing- H.I., H.F.; Critical Review- H.I., H.F., S.M.

Conflict of Interest: No conflict of interest was declared by the authors.

Corresponding author: Hirohisa Fujikawa, Center for General Medicine Education, School of Medicine, Keio University, Tokyo, Japan

e-mail: hirohisa.fujikawa@gmail.com

Received: April 17, 2024 **Accepted:** May 30, 2024 **Available Online Date:** xxxxx • **DOI:** 10.4274/balkanmedj.galenos.2024.2024-3-113

Available at www.balkanmedicaljournal.org

ORCID iDs of the authors: H.I. 0009-0002-1327-5196; H.F. 0000-0002-8195-1267; S.M. 0009-0001-3948-2495..

Cite this article as: Ikeda H, Fujikawa H, Mizuma S. Scurvy Caused by Financial Difficulty in the COVID-19 Pandemic. *Balkan Med J*;

Copyright@Author(s) - Available online at <http://balkanmedicaljournal.org/>

REFERENCES

1. Souza PRM, Dupont L, Rodrigues FE. Scurvy: hard to remember, easy to diagnose and treat. *An Bras Dermatol*. 2021;96:257-258. [\[CrossRef\]](#)
2. Doseděl M, Jirkovský E, Macáková K, et al. Vitamin C-sources, physiological role, kinetics, deficiency, use, toxicity, and determination. *Nutrients*. 2021;13:615. [\[CrossRef\]](#)
3. Gandhi M, Elfeky O, Ertugrul H, Chela HK, Daglilar E. Scurvy: Rediscovering a Forgotten Disease. *Diseases*. 2023;11:78. [\[CrossRef\]](#)
4. Léger D. Scurvy: reemergence of nutritional deficiencies. *Can Fam Physician*. 2008;54:1403-1406. [\[CrossRef\]](#)
5. Colacci M, Gold WL, Shah R. Modern-day scurvy. *CMAJ*. 2020;192:E96. [\[CrossRef\]](#)