

Almost gone but never forgotten: Scurvy with an initial presentation of hemarthrosis

Aleena Kazmi, MD¹, Donnell White, III, PhD², R. Austin Clark, BS², Bradford Calvit, MD¹, Guido DeJesus, MD¹, and Vince Cataldo, MD³

¹ Department of Internal Medicine, Louisiana State University Health Sciences Center, Baton Rouge, LA

² School of Medicine, Louisiana State University Health Sciences Center, New Orleans, LA

³ Department of Hematology and Oncology, Louisiana State University Health Sciences Center, Baton Rouge, LA

BACKGROUND

- Hemarthrosis is defined as bleeding in joint spaces and is typically associated with acquired or congenital clotting abnormalities.
- Patients typically affected include those on anticoagulants, hemophiliacs, or clotting factor inhibitors (1).
- In contrast, petechiae are commonly seen in thrombocytopenia, platelet function disorders, or vasculitis (2).



Figure 1. Hemarthroses of bilateral knees status post arthrocentesis

- Collagen provides structural integrity and elasticity to blood vessels, allowing them to withstand the pressures exerted by circulating blood.
- Improperly formed vessel walls can lead to hemarthrosis, especially if exacerbated by concurrent NSAID use.
- Individuals with poor diet, excessive alcohol use, and malabsorptive disorders are at risk of developing a vitamin C deficiency, colloquially known as scurvy.
- Scurvy classically manifests as gingival bleeding, bruising, hemorrhage, petechiae, arthralgia, and impaired wound healing (2).
- After initiation of vitamin C repletion, symptoms typically disappear within 3–5 days, and most physical findings will resolve in 1–2 weeks (4).

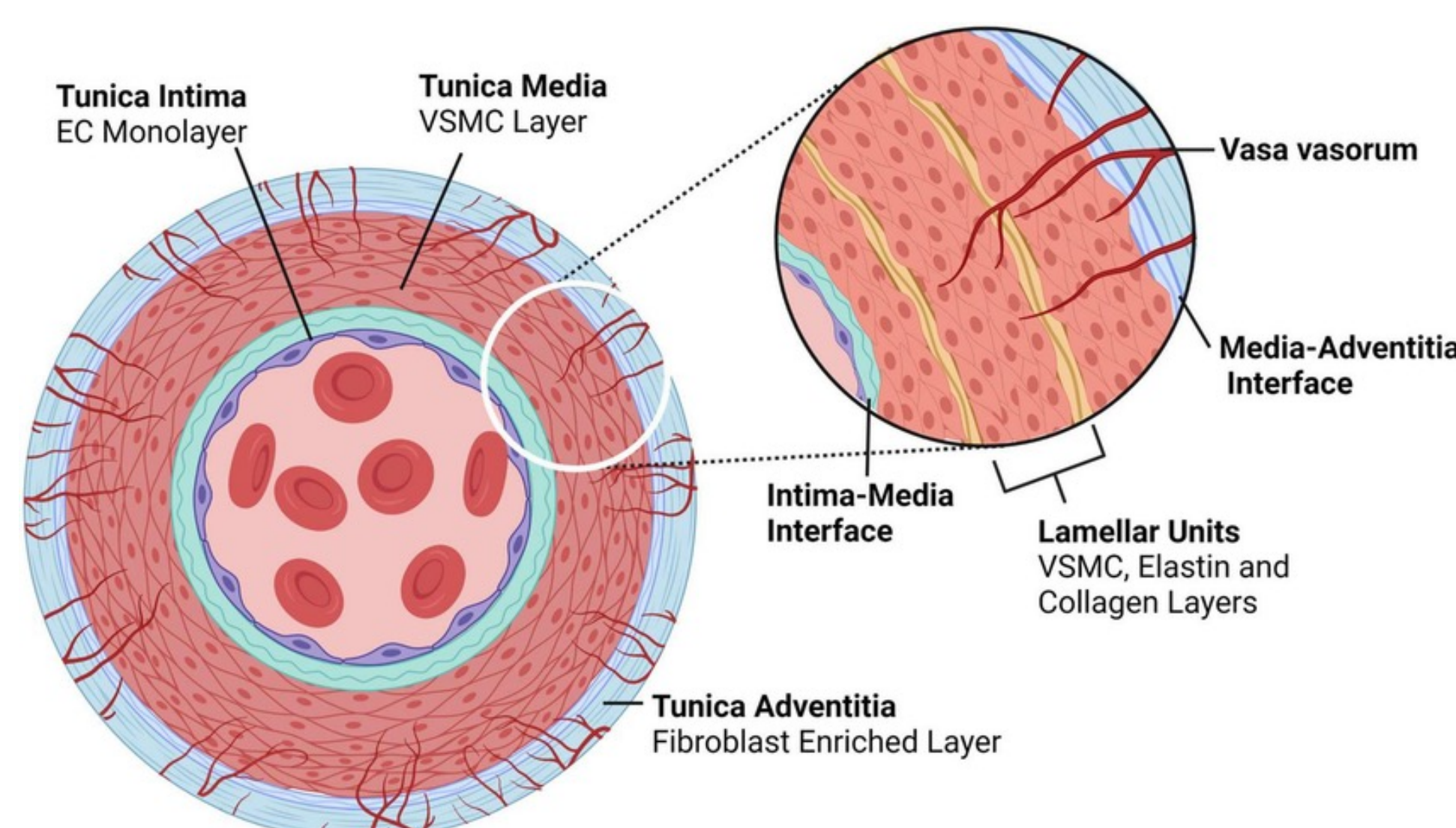


Figure 2. Vitamin C is crucial for synthesizing collagen, an essential component of blood vessels (3).

CASE REPORT

- This patient is 48-year-old female with a history of squamous cell carcinoma of the oropharynx who underwent mandibulectomy and maxillectomy with flap reconstruction 4 years ago, resulting in chronic dysphagia and PEG tube dependence.
- Her diet consisted of primarily soft foods such as mashed potatoes, grits, and oatmeal.
- She initially presented to urgent care with an abrupt onset of left-sided knee pain with significant swelling and was prescribed NSAIDs.
- 3 months later, she presented to the ED with increased bilateral knee pain and swelling. MRI of the left knee showed a large, complicated joint effusion.
- Arthrocentesis yielded 80ccs of bloody aseptic joint fluid, and she was discharged.
- One week later, she presented to the ED again with renewed swelling, pain, and significant debility. She also reported a rash on her legs.
- She denied any previous history of hemarthrosis, trauma, or similar rash in the past, and she denied any prolonged bleeding following surgical procedures, including her prior pharyngeal resection.



Figure 3. A) Blue-ish sclera and B) Petechial rash of the patient's bilateral lower extremities

- On physical exam, the patient was noted to have bluish discoloration of her sclera, thin appearance, bilateral knee swelling without erythema, and a fine perifollicular petechial rash on her anterior shins (Figures 1 and 3).
- Labs showed a slightly elevated PTT and average platelet count.
- Collagen/ADP and collagen/epinephrine platelet function analyses were prolonged.
- PT, von Willebrand factor antigen and activity, peripheral blood smear, platelet count, ANA, and ANCA levels were within normal limits.
- She was discovered later to have an undetectably low vitamin C.
- Vitamin C was replaced with ascorbic acid 1000 mg daily in the inpatient setting with improvement in hemarthrosis.
- She was discharged with 250 mg of vitamin C daily per her PEG tube and was counseled to avoid NSAIDs of any kind indefinitely.

DISCUSSION

- This patient was diagnosed with scurvy presenting as recurrent spontaneous bilateral hemarthrosis secondary to vitamin C deficiency from poor nutritional intake.
- The initial presentation of hemarthrosis likely occurred due to the weakened state of her blood vessels and was further exacerbated by concurrent NSAID usage.
- Although rare, similar cases have been described with hemarthrosis as the initial presentation for scurvy (2,5-7).

CONCLUSION

- Maintaining adequate nutrition is important.
- Patients should be educated about their dietary requirements, especially when they rely on alternative nutrition modes.
- NSAID usage can further exacerbate weakened vascular states, leading to a compound clinical presentation of bleeding.
- Scurvy should be included in the differential diagnoses for patients with hemarthrosis, petechiae, and nutritional deficits.
- Other differentials with similar presenting symptoms should include gingivitis, periodontitis, ITP, Henoch-Schonlein purpura, DIC, Rocky Mountain Spotted Fever, meningococemia, and hypersensitivity vasculitis.
- The standard recommended dosage for adults is 300mg to 1000mg daily for one month.
- After initiation of vitamin C repletion, symptoms typically disappear within 3–5 days, and most physical findings will resolve in 1–2 weeks (6).

REFERENCES

1. D.G. Baker, H. R. Schumacher. Acute Monoarthritis. *New England Journal of Medicine* **329**, (14):1013-1020 (1993).
2. P. G. Brodeur *et al.*, Vitamin C Deficiency as a Mimicker of Vasculitis: A Case. *Annals of Internal Medicine: Clinical Cases* **2** (2023).
4. M. Moser, O. Chun, Vitamin C and Heart Health: A Review Based on Findings from Epidemiologic Studies. *International Journal of Molecular Sciences* **17**, 1328 (2016).
5. R. H. De Luna *et al.*, Scurvy: An often forgotten cause of bleeding. *American Journal of Hematology* **74**, 85-87 (2003).
6. P. Marquardt, G. Raman, Y. M. Shen, D. H. Wang, Scurvy: a rare cause of haemarthrosis. *BMJ Case Rep* **15** (2022).
7. A. L. Pangan, D. Robinson, Hemarthrosis as initial presentation of scurvy. *J Rheumatol* **28**, 1923-1925 (2001).
8. F. A. Bevelacqua, P. Hasselbacher, H. R. Schumacher, Scurvy and Hemarthrosis. *JAMA* **235**, 1874-1876 (1976).