



## INTRODUCTION

Hypovitaminosis C, or scurvy, classically presents with bone pain, myalgia (due to reduced carnitine production), joint effusions, poor wound healing, bleeding diathesis, and failure to thrive. This condition is rarely seen in developed countries except for cases involving caregiver neglect and can result in significant acute-to-subacute functional decline. Treatment classically consists of aggressive vitamin C replenishment. Scurvy can co-occur with other vitamin deficiencies, in which case a thorough workup of malabsorptive disorders is indicated.

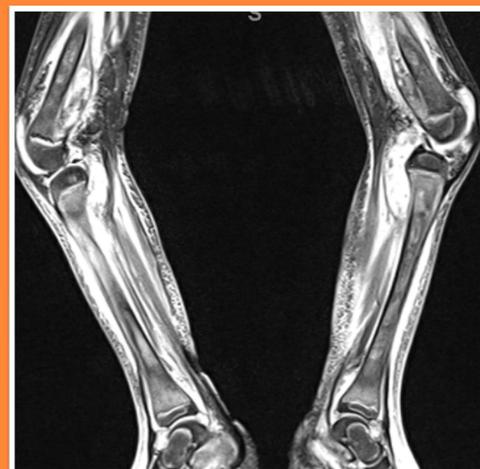
## CASE DESCRIPTION

A 3-year-old unvaccinated boy with no pertinent birth/medical history presented to the ED for inability to move his legs for one month. He was reportedly delivered vaginally at 37-weeks at home with prenatal care and met all age-appropriate developmental milestones. He was breastfed until 30-months to presentation with minimal PO intake since. Review of systems was negative for fevers, diarrhea, seizures, cough, nausea, ill contacts, and recent travel. Examination revealed diffuse muscle wasting, severe lower extremity allodynia, bilateral knee effusions, and a Stage-2 sacral pressure wound. Labs showed an extremely low Vitamin C level at 0.1 and severe iron/folate deficiency anemia (hemoglobin 3.6). MRI C/T/L-spine was unremarkable other than low T1 signal consistent with chronic anemia. X-ray/MRI of the pelvis and lower extremities revealed diffuse cortical thinning and subperiosteal hemorrhages consistent with hypovitaminosis C (see adjacent figures). GI workup was not consistent with any organic malabsorptive disorder.

## IMAGES



Findings on clinical exam suggestive of diffuse muscle wasting and knee effusions (left). Also noted as a stage 2 sacral pressure wound (above)



X-rays of the lower extremities illustrated above (from left to right) right femur, left femur, right tib/fib, left tib/fib) show diffuse osseous mineralization, cortical thinning, & periosteal reaction from subperiosteal hemorrhage. MRI of the bilateral distal femur + tib/fib (to the left) shows abnormal metaphyseal marrow signals, subperiosteal hematomas, muscle atrophy/edema, & knee effusions – suggestive of hypovitaminosis C

## CASE DESCRIPTION CONTD.

Patient was treated with PRBC transfusions, TPN, IV fluids, and vitamin supplementation. He was transitioned to ND-tube feeds and transferred to inpatient rehabilitation at a max-to-total assist level. With ST/dietician assistance, his oral caloric intake was progressively increased. By 4 weeks, he had gained 10lbs, his allodynia and joint effusions significantly improved, and he was ambulating with a posterior walker. He was discharged home with family and close follow up with DCF, at a minimal assist to supervision level.

## DISCUSSION

Allodynia and neuropathic pain have a wide range of etiologies, included spinal, peripheral nerve, and even hematological diseases. Often, it can be iatrogenic in response to medical intervention. For example, complex regional pain syndrome, for which Vitamin C is a commonly prescribed prophylactic agent, can result in allodynia associated with sudomotor, vasomotor, and trophic changes. While scurvy is a well-documented phenomenon in response to hypovitaminosis C, allodynia caused by scurvy has yet to be formally described. This case also illustrates that multidisciplinary inpatient rehabilitation program with a nutritional emphasis can lead to significant symptom resolution and maximization of function within 3 weeks in patients with scurvy. It also subtly adds to a growing evidence-based discussion of Vitamin C in the management of chronic pain.

## REFERENCES

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2. Jensen TS, Finnerup NB. Allodynia and hyperalgesia in neuropathic pain: clinical manifestations and mechanisms. *Lancet Neurol.* 2014 Sep;13(9):924-35.
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