

Heterotopic Ossification Causing Acute Vascular Compromise in a Patient with Paraplegia and Thermal Burns: A Case Report

Kevin Ozment, MD; Ki Kim, MD

¹McGaw/Northwestern University Feinberg School of Medicine/Shirley Ryan AbilityLab, Chicago, Illinois, Department of Physical Medicine and Rehabilitation

Case Diagnosis

19-year-old male with **traumatic spinal cord paraplegia** and **40% total body surface area (TBSA) burns**

Case Description

The patient presented to acute inpatient rehabilitation (AIR) 5 months after a motor vehicle accident resulting in **dual diagnosis of mid-thoracic paraplegia** and **40% TBSA burns** affecting proximal lower extremities, **requiring multiple skin grafts**.

Two months into AIR, he **developed rapid left lower extremity (LLE) swelling** with intact distal pulses (Fig 1). Prior to this acute change, his hip range of motion exercises had been amplified. Doppler **ultrasound (US) appeared negative for thrombosis**, but was limited due to extensive edema. Empiric enoxaparin was started. CT scan of LLE **revealed unknown, extensive heterotopic ossification (HO)** extending from the **iliac crest to distal anterior thigh** causing **significant iliac vein narrowing**. Indomethacin was started with **ensuing swelling and symptom resolution**.

Heterotopic ossification can be a rare cause of acute vascular compression and masquerade as a deep vein thrombosis in patients with dual burn and spinal cord injuries



SCAN ME

(for more clinical pearls & images from the CT scan)



Fig. 1- Scout XR image from his CT scan depicting LLE thigh swelling roughly double the size of the right

Discussion

Thrombosis induction by **HO** is **uncommon**, but has been noted. Once the swelling resolved, repeat doppler US showed **no thrombosis**. Due to having **reduced venous flow** and being theoretically higher risk, **prophylactic enoxaparin was continued**. **Reduced skin compliance** at the skin graft sites over the proximal anterior thigh and groin likely **contributed to the insult of vascular compression**. He is now functionally improving as an outpatient.

Conclusion

HO is not in of itself abnormal in patients with concomitant burn and spinal cord injuries. However, the **acuity** and **degree** to which his **leg swelling** developed, along with the significant **narrowing of the iliac vein** that ensued, was **noteworthy**. For those with this **dual diagnosis**, it is important to **closely monitor** for this **potential complication**.

References

- Orzel et al. Heterotopic bone formation (myositis ossificans) and lower-extremity swelling mimicking deep venous disease. *J Nucl Med*. 1984; 5: 1105-1107
- Ko, Weng. "Heterotopic Ossification with Femoral Vein Compression Mimicking Deep Vein Thrombosis." *Journal of vascular surgery cases and innovative techniques* 6.3 (2020): 479-482. Web.