

A unique case of post-traumatic heterotopic ossification in the adductor longus muscle following open reduction and internal fixation of the pubic symphysis

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Introduction

- Heterotopic ossification (HO) is a common complication seen in physical medicine and rehabilitation practices from in patient rehab, musculoskeletal complaints in the clinic to pain concerns seen in pain clinic.
- The following case is a patient with numerous risk factors for HO that presented with a unique and extensive growth in the adductor longus muscle.

Case Presentation

- The patient is a 37 y/o African American male that presented to the emergency department after a motorcycle accident in 9/2018.
- He was not wearing a helmet, was GCS3 and intubated on arrival.
- Injuries included: a compound open book pelvic fracture, sacral fracture, sacroiliac diastasis (Figure 1), multiple facial fractures, traumatic brain injury with SAH and SDH, grade IV liver laceration, blunt aortic injury, rib fractures and scrotal hematoma.
- Found to be hypotensive with a positive FAST and pubic diastasis on XR in the trauma bay, who was then rushed to the OR for ex-lap on massive transfusion protocol
- Diagnosed with APC III pelvic injury, L zone 2 sacral fracture and taken to the OR 4 days after arrival for ORIF.
- He was three months status post pubic symphysis ORIF and percutaneous SI joint fixation when he was found to have developed clinically painful and ultimately restrictive heterotopic ossification (Figure 2 and 3) of the right proximal thigh/pubis region.
- He expressed discomfort in intimate positions and on exam he was found to be unable to flex his hip past 90 degrees.
- The decision was eventually made to surgically remove the HO which was scheduled 16 months after his initial injury.
- A 12.5cm x 5.5cm osseous mass (Figure 3) was found to originate from the inferior pubic body and was successfully dissected out of the adductor longus muscle.
- The patient was prescribed indomethacin post-operatively for prophylaxis against further HO.
- To date the patient has had no recurrence or continued pain and no signs of neurovascular injury



Fig. 1: Xray from original injury and ORIF on 9/2018

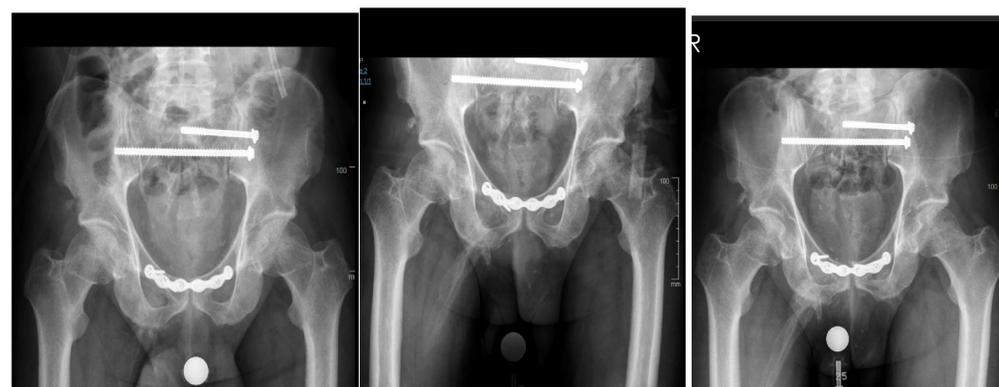


Fig. 2: Xray progress of HO from left to right, 10/2018, 12/2018 to 7/2019

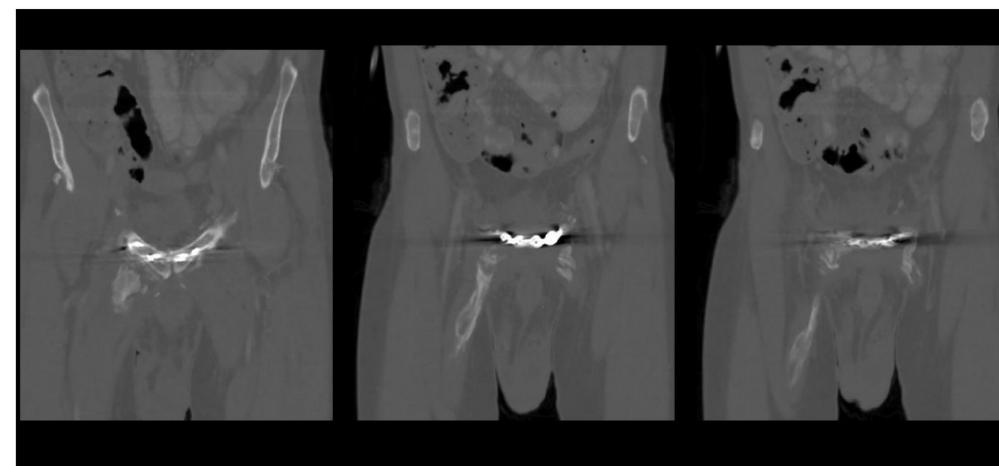


Fig. 3: CT Coronals 11/2018

Discussion

- Heterotopic ossification is the pathological formation of bone in soft tissues.
- The formation of HO after orthopaedic trauma is relatively common and can be seen following ORIF as well as joint replacement.
- It typically occurs 3 to 12 weeks after inciting injury, but can take up to 6 months to present
- It is most commonly seen during specific extensile approaches to the acetabulum. If a fracture is associated with brain injury, the incidence of HO rises significantly.
- The exact cause of HO is not fully understood but there does appear to be a genetic association.

In this case, the HO formed in the adductor compartment of the thigh and the cause likely multifactorial, related to direct trauma to the area, the patient's TBI and his surgical pelvic fixation.



Fig. 4: Pathology specimen

Conclusion

- Heterotopic ossification can be severely impacting on a patient's life and function causing pain, nerve entrapment, restrictions in movement and skin breakdown.
- It is necessary to choose the most appropriate treatment in a patient-centered way considering the cause, location and patient's function and proceed with an individualized care plan.

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