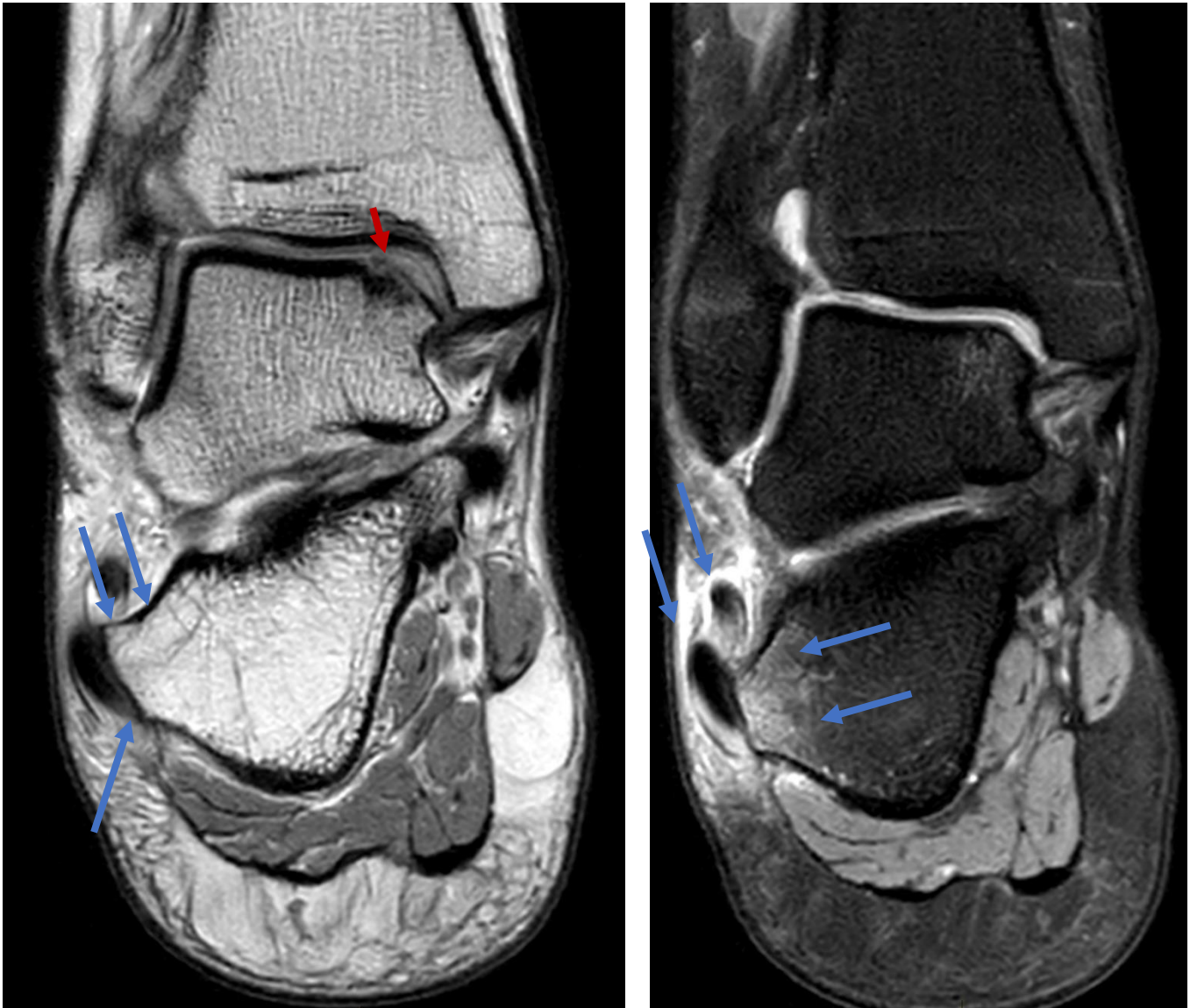


**18yo M with a history of left sided cerebral palsy, presents with left sided clinical peroneal symptoms**

MRI Findings:

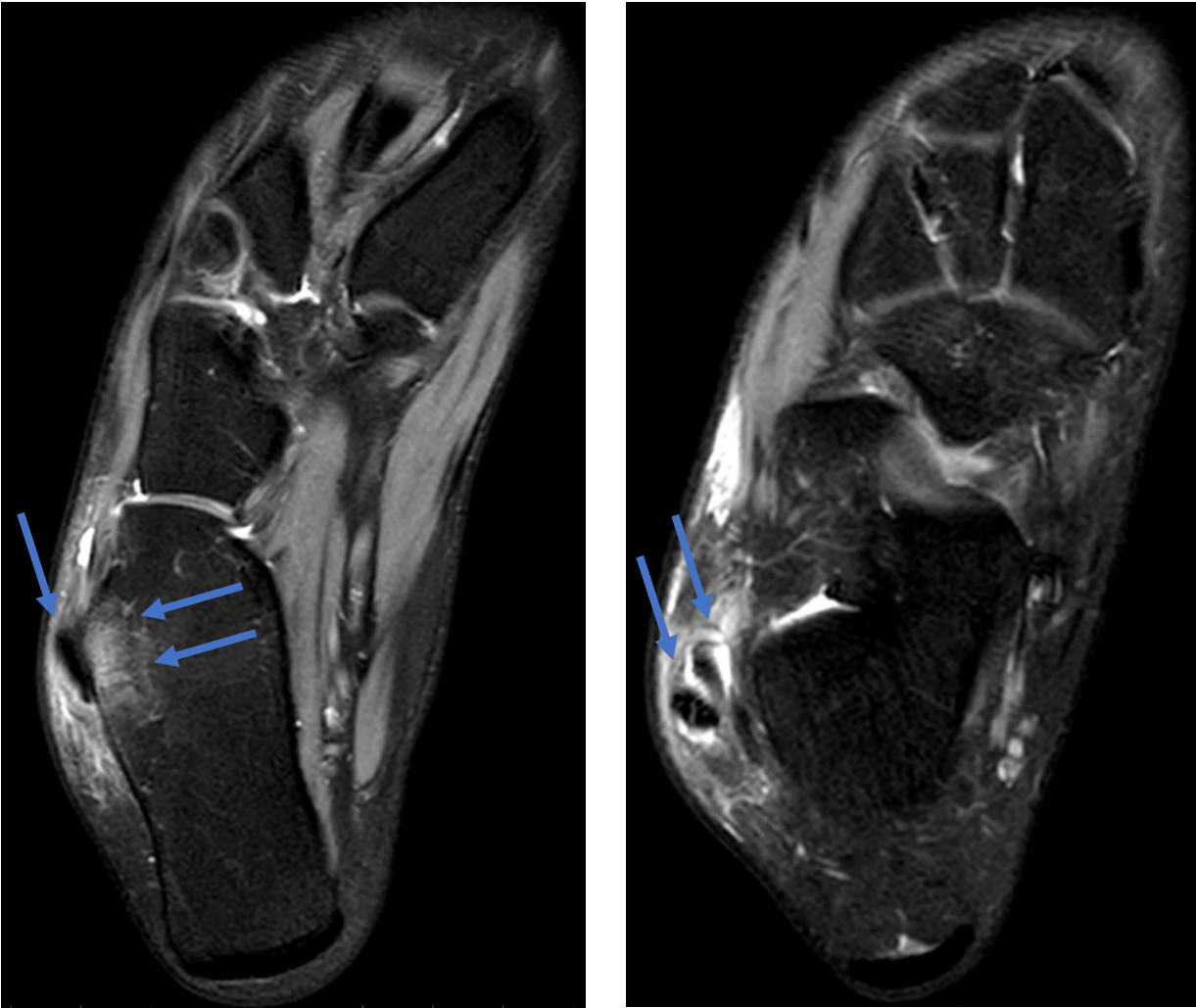
- Hypertrophic peroneal tubercle of the calcaneus
- Bone marrow oedema through the enlarged peroneal tubercle
- The adjacent peroneal tendons show early tendinopathic change
- Significant peroneal tenosynovitis from attritional tearing



**Coronal PD (left)** - note the abnormally large peroneal peroneal tubercle, a 'knuckle' excrescence which in this patient can interfere with the normal gliding of the peroneal tendons adjacent.

**Coronal T2 (right)** - The T2 weighted imaging on the right emphasises the tenosynovial oedema and fluid, as well as the subcortical bone marrow oedema through the culprit peroneal tubercle.

A careful observer would will also note a coexistent osteochondral injury in this patient of the medial aspect of the talar dome (small red arrow)



**Axial T2 imaging** – Again, shows the subcortical bone marrow oedema through the culprit tubercle. The adjacent peroneals show abnormal amounts of tenosynovial fluid, tenosynovial thickening, and surrounding oedema.

### Discussion

- A normal peroneal tubercle acts as the insertion of the inferior peroneal retinaculum, and acts as a second fulcrum for the peroneal tendons while also separating the common peroneal sheath into separate sheaths for longus and brevis
- In cases of hypertrophic peroneal tubercle, causes can be congenital or acquired
  - Acquired form is most commonly seen in partially paralyzed feet – note that our patient has a history of cerebral palsy on the affected side
    - While truly a radiographic assessment, careful interpretation of this patient’s foot alignment on multiple slices reveals a likely cavovarus alignment
      - Cavovarus foot “places the peroneus longus tendon at a mechanical disadvantage, reducing its moment arm and increasing frictional forces on the tendon at the level of the lateral malleolus, peroneal tubercle, and cuboid notch” (Palmanovich et al, full reference below)
- Hypertrophic peroneal tubercle associations
  - Peroneal tenosynovitis
  - Peroneal stenosing tenosynovitis
  - Peroneal tendinopathy
- Suspected causation mechanism a combination of altered biomechanical stressors and attritional tearing of the adjacent gliding peroneal tendons

### Further Reading:

Palmanovich E, Laver L., Brin Y, Kotz E, Hetsroni, Mann G, Nyska M, *Peroneus longus tear and its relation to the peroneal tubercle: a review of the literature*, *Muscles Ligaments Tendons J*, 1(4), 153-160, 2011

Desimpel J, Posadzy M, Vanhoenacker F, *Imaging features of symptomatic hypertrophic tuberculum peroneum*, *J Belg Soc Radiol*, 101 (Suppl 2): 7, 2017, DOI: [10.5334/jbr-btr.1376](https://doi.org/10.5334/jbr-btr.1376)

Sugimoto K et al, *Enlarged peroneal tubercle with peroneus longus tenosynovitis*, *Journal of Orthopaedic Science*, Vol 14:3, 330-335, 2009