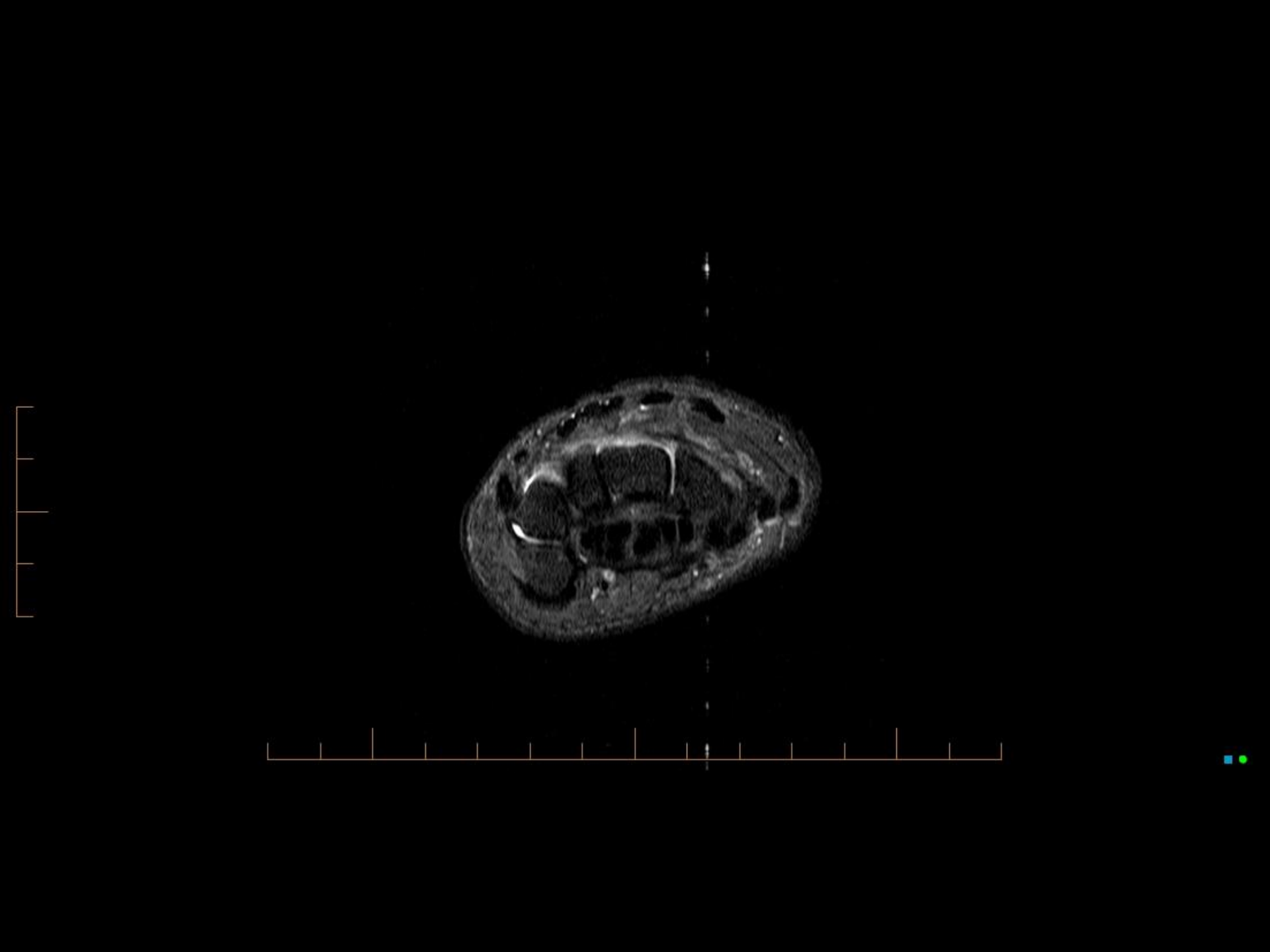
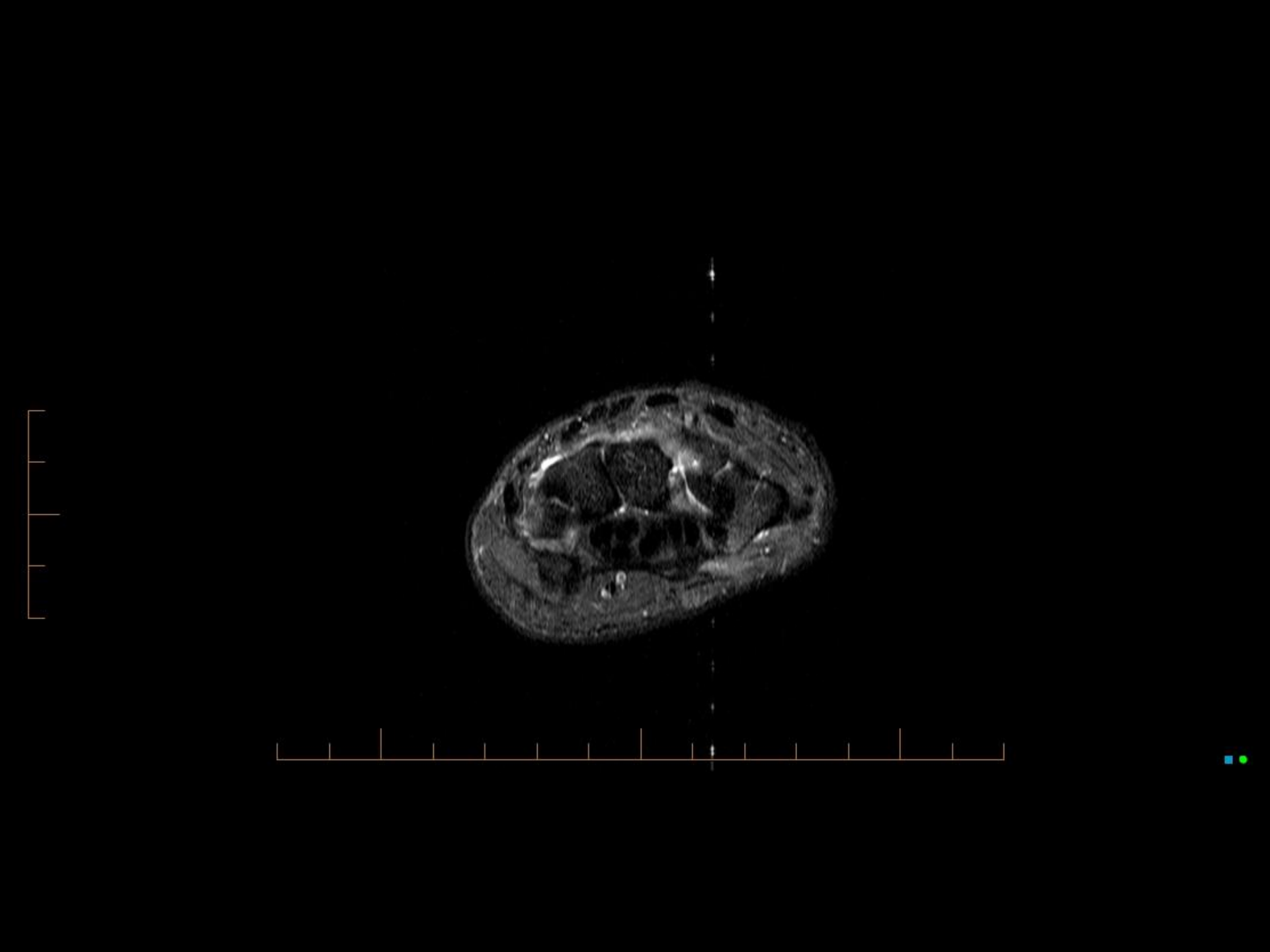
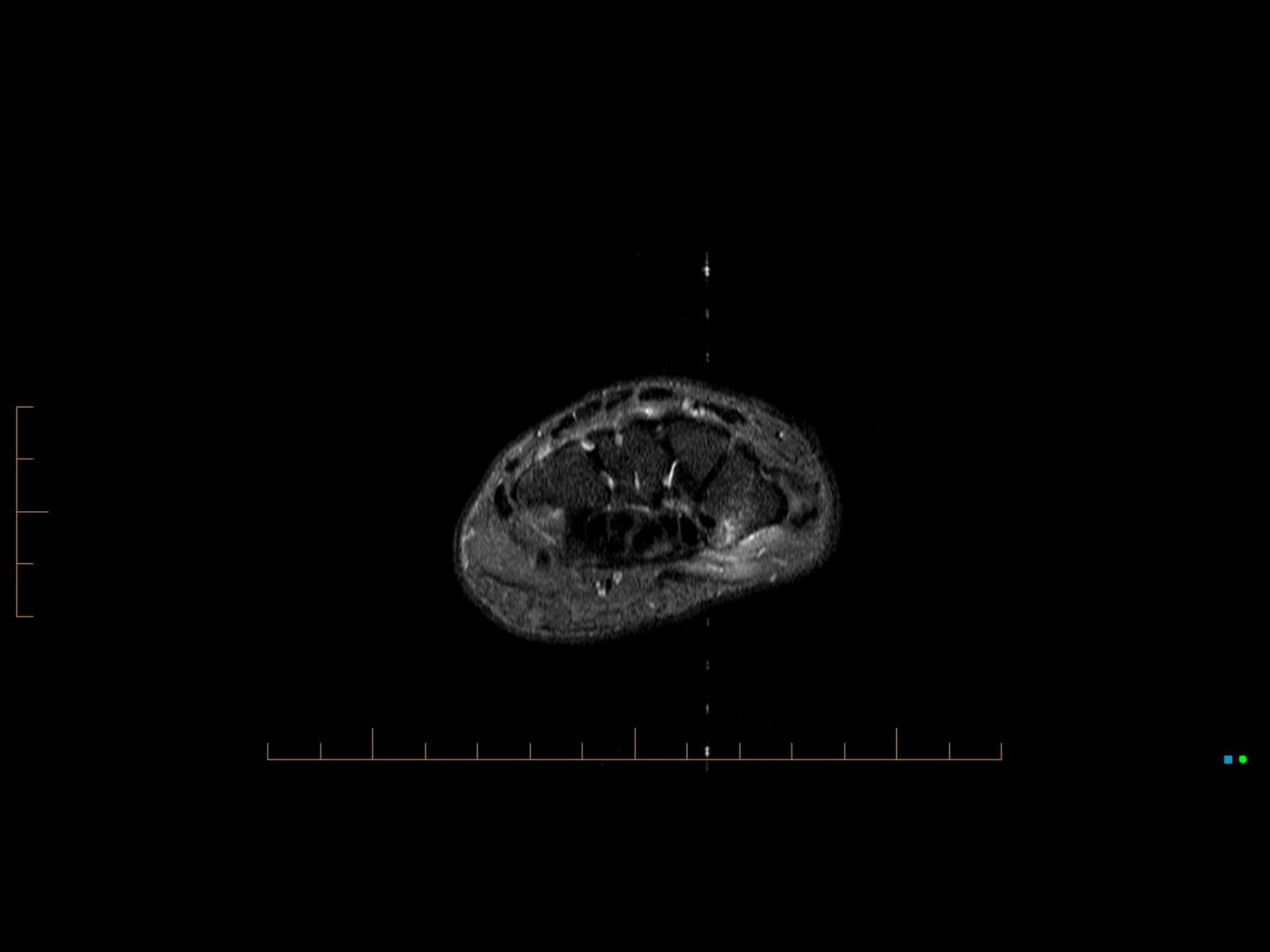
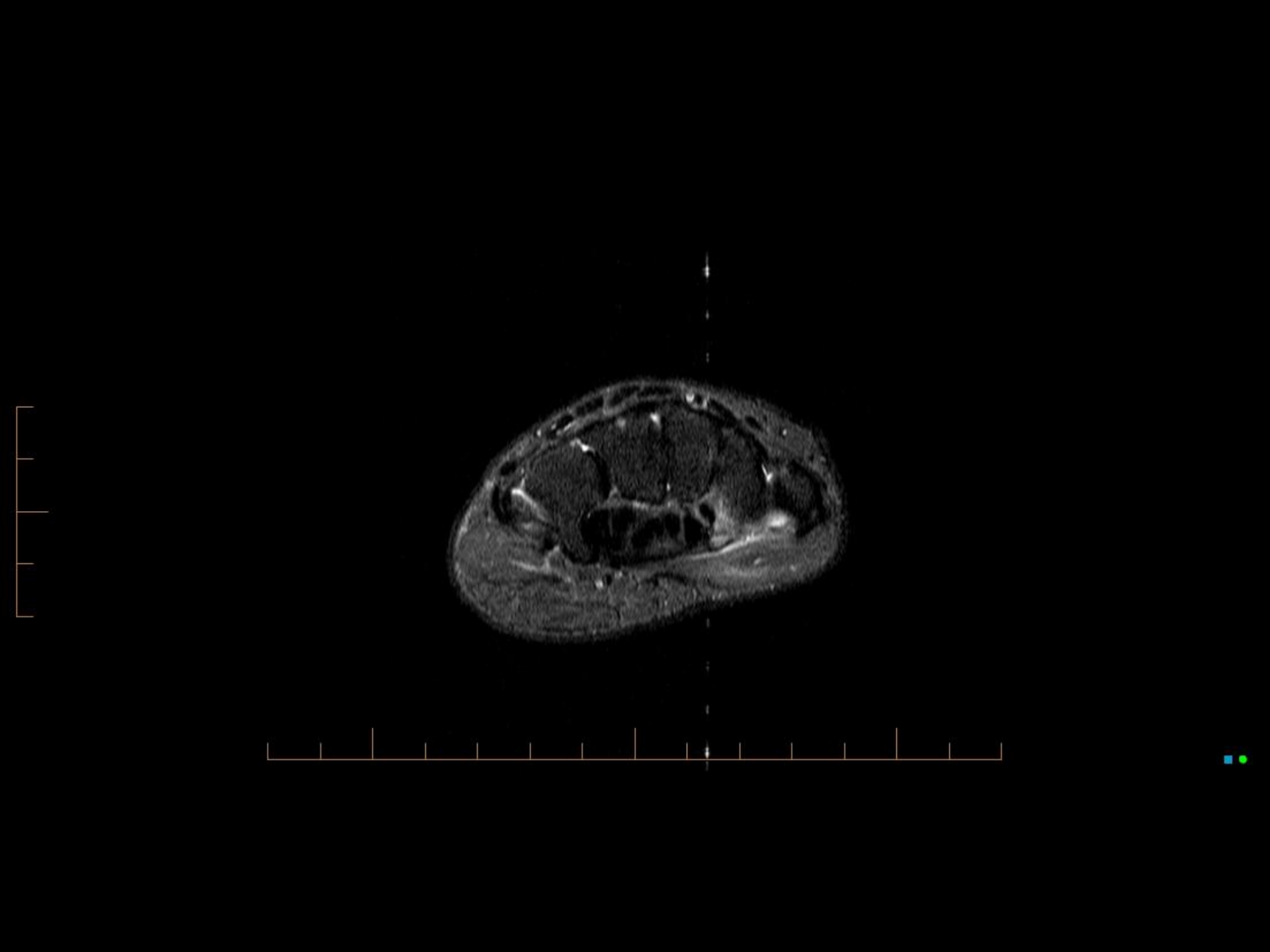
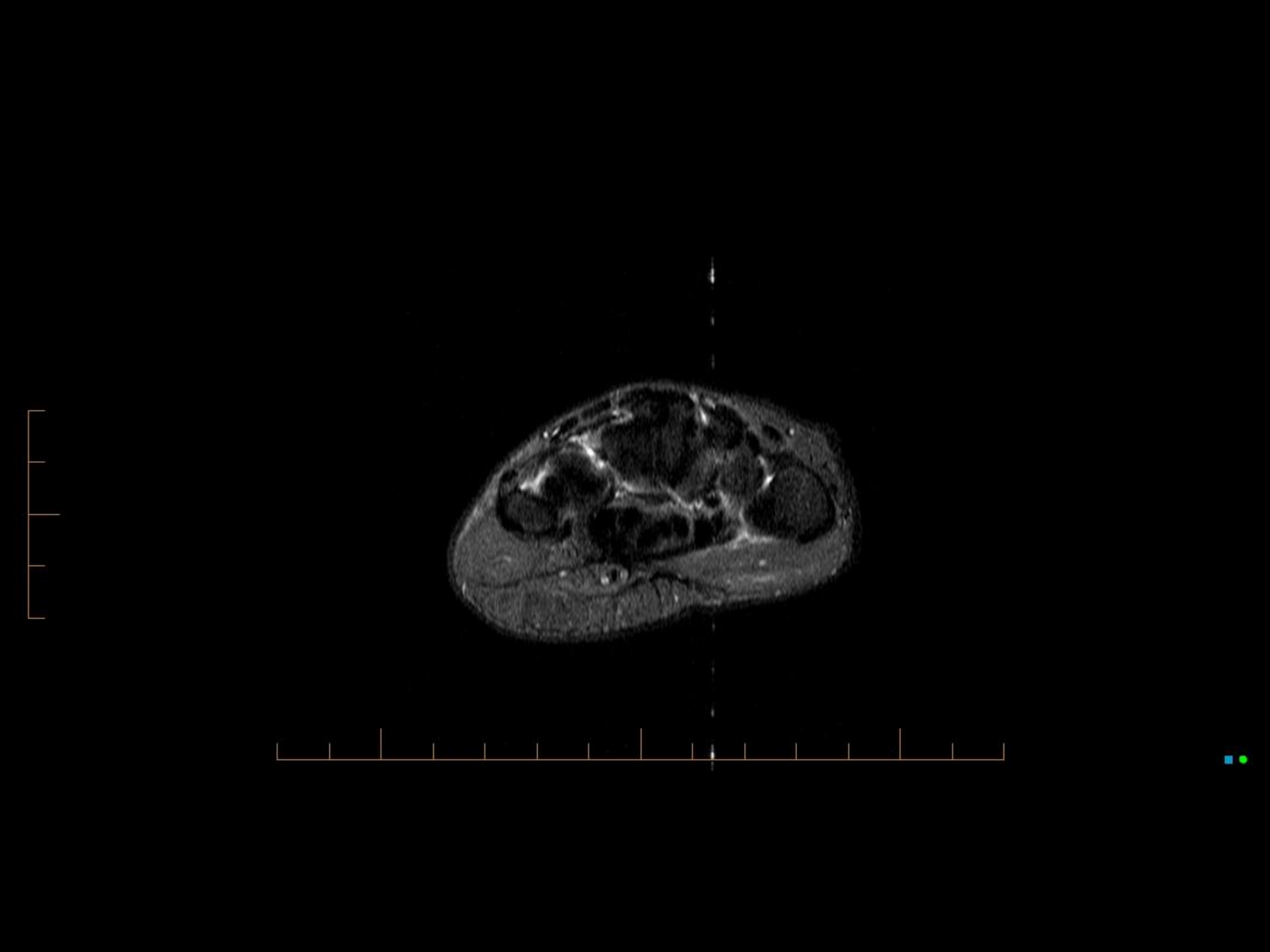
48 year old female s/p fall with 5 weeks of persistent radial-sided wrist pain despite negative radiographs

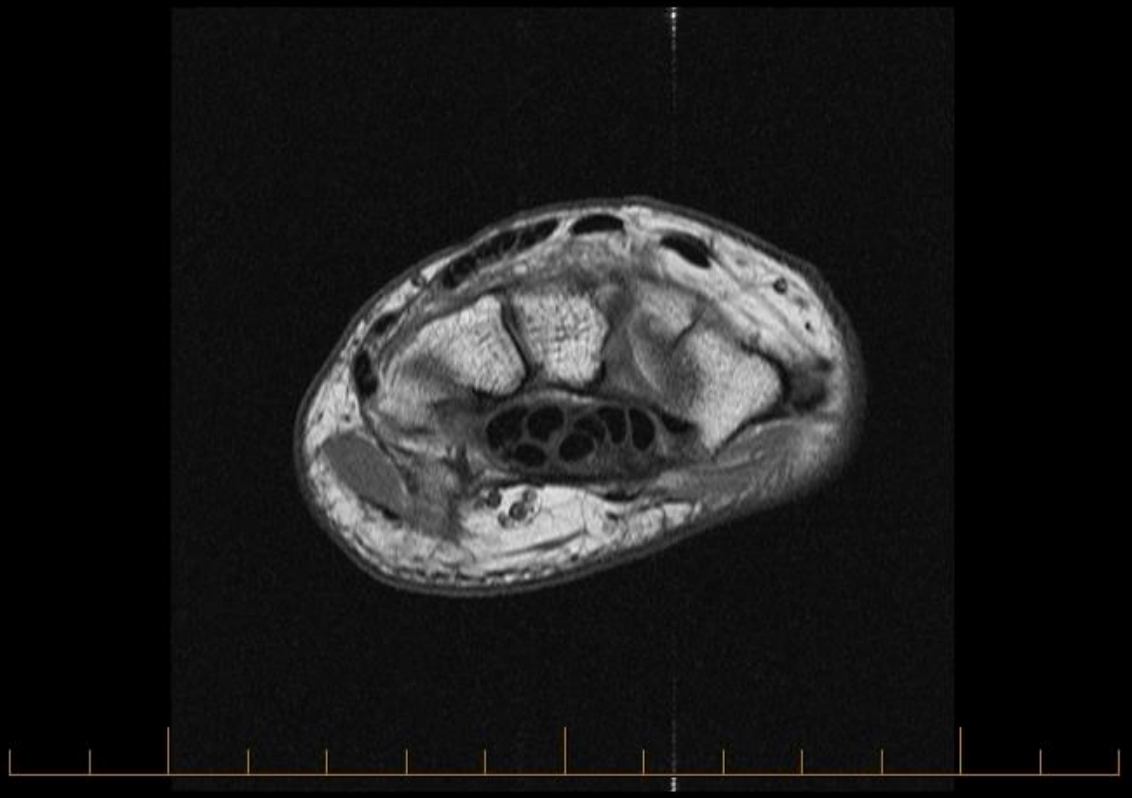


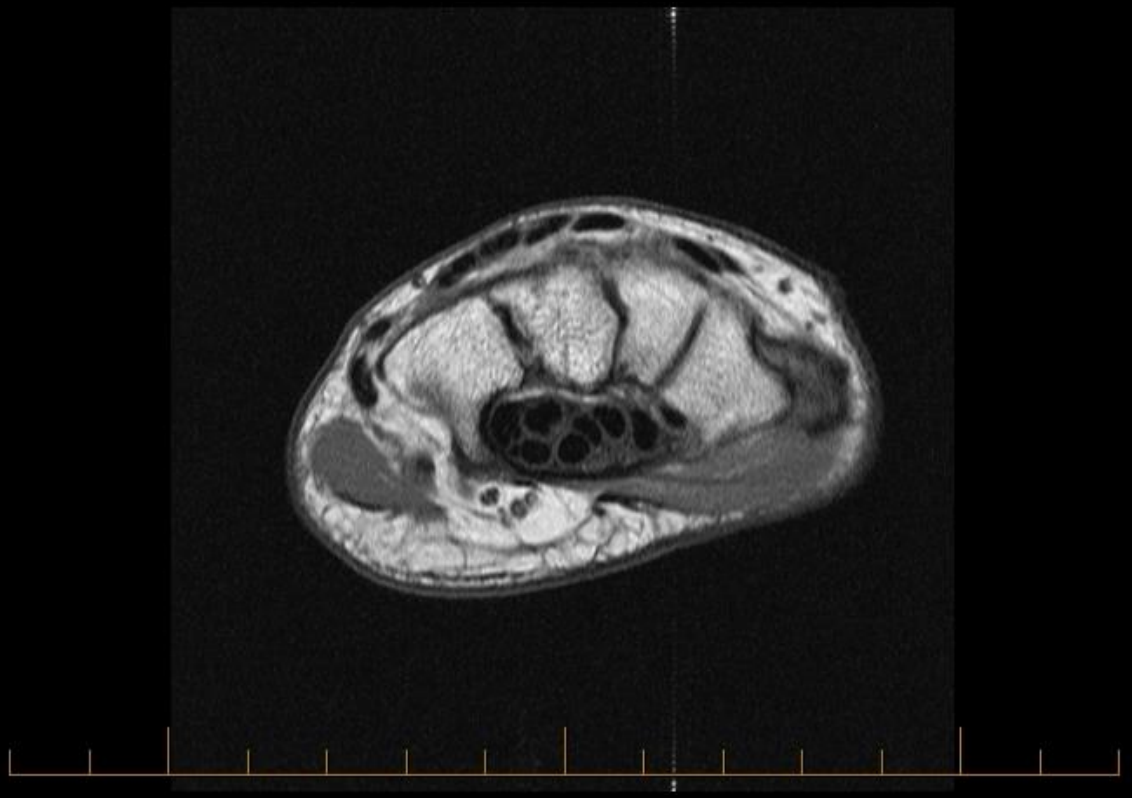


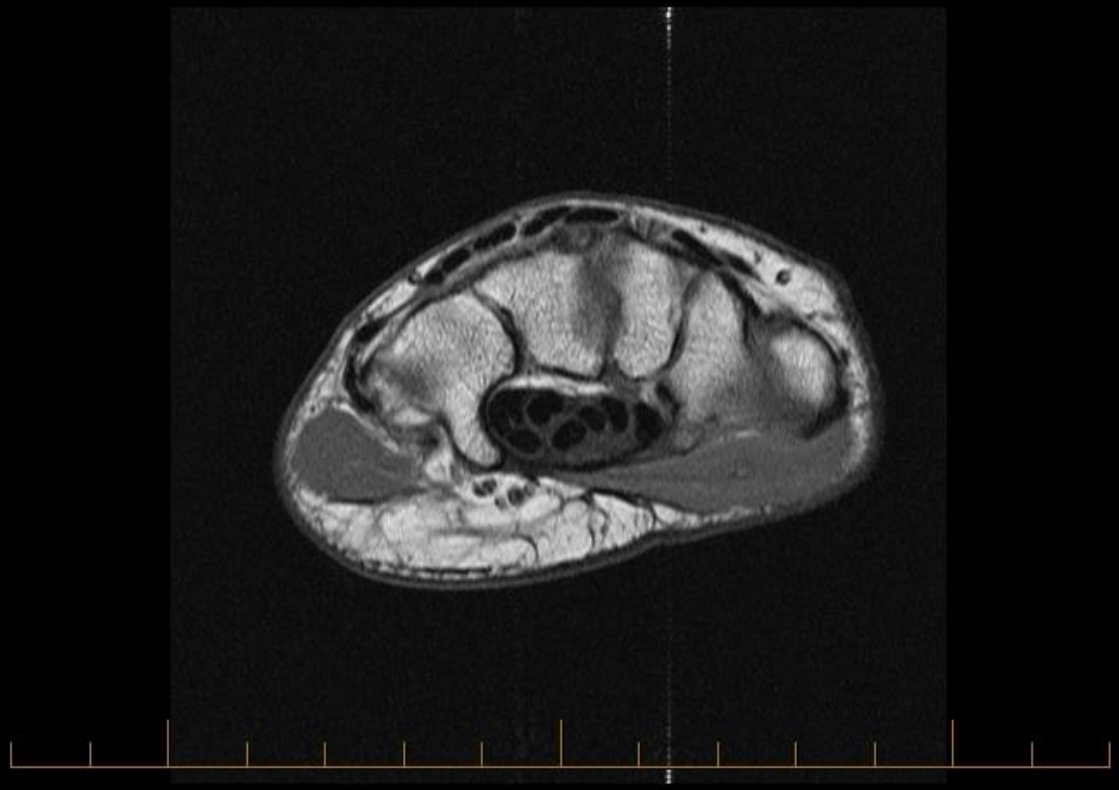


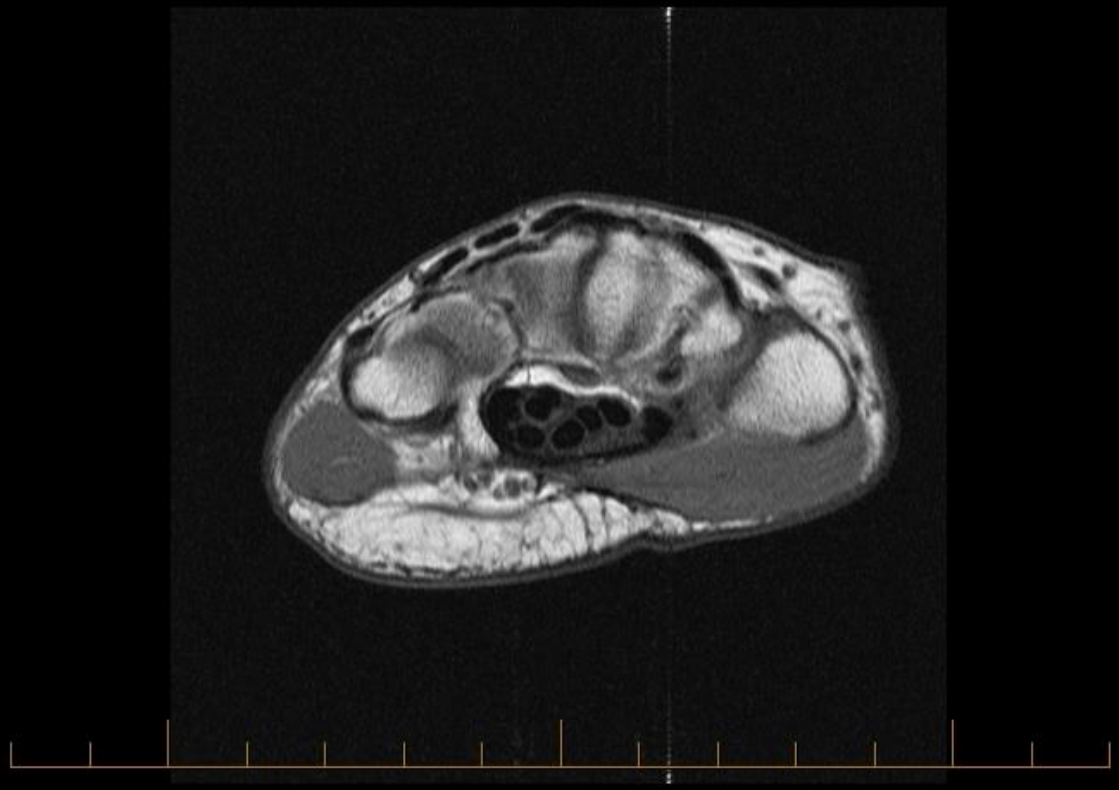


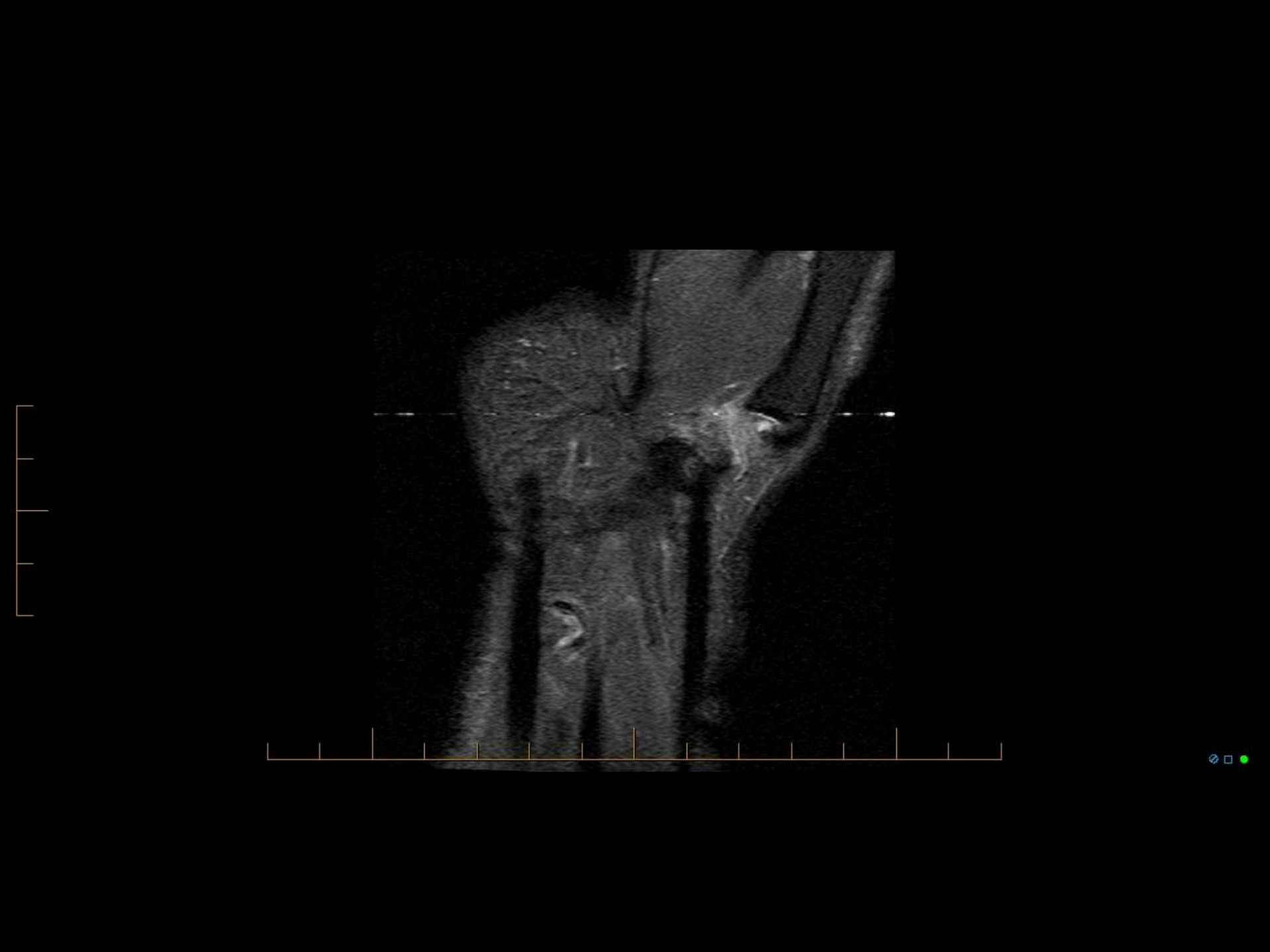






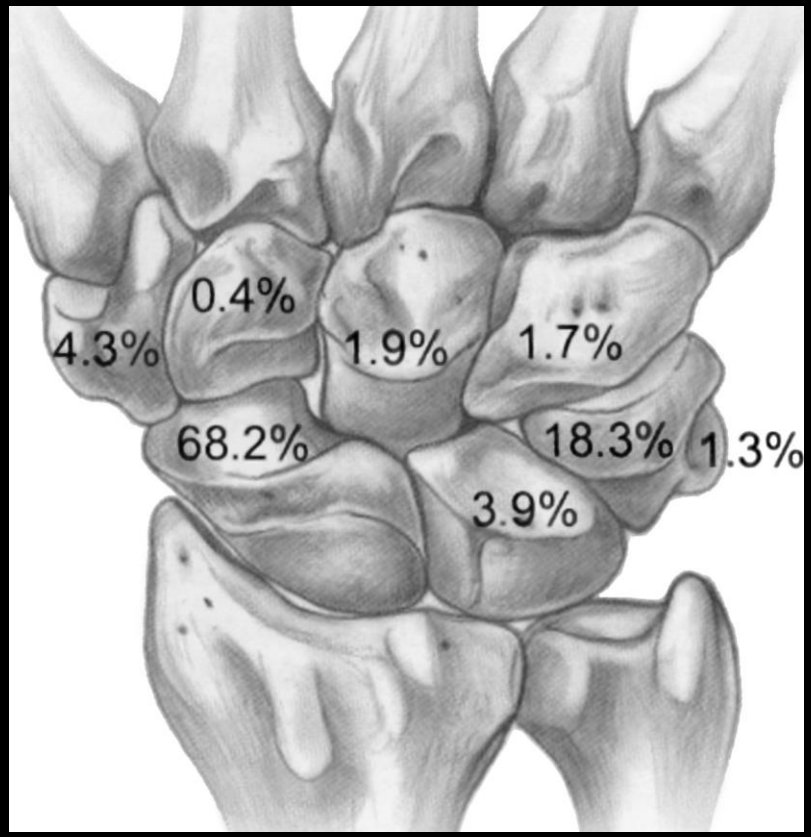






Trapezial Fractures

- Rare fracture of the wrist
  - Only 4% of carpal fractures



Orthopedic Clinics of North America, Volume 38, Issue 2

Trapezial Fractures

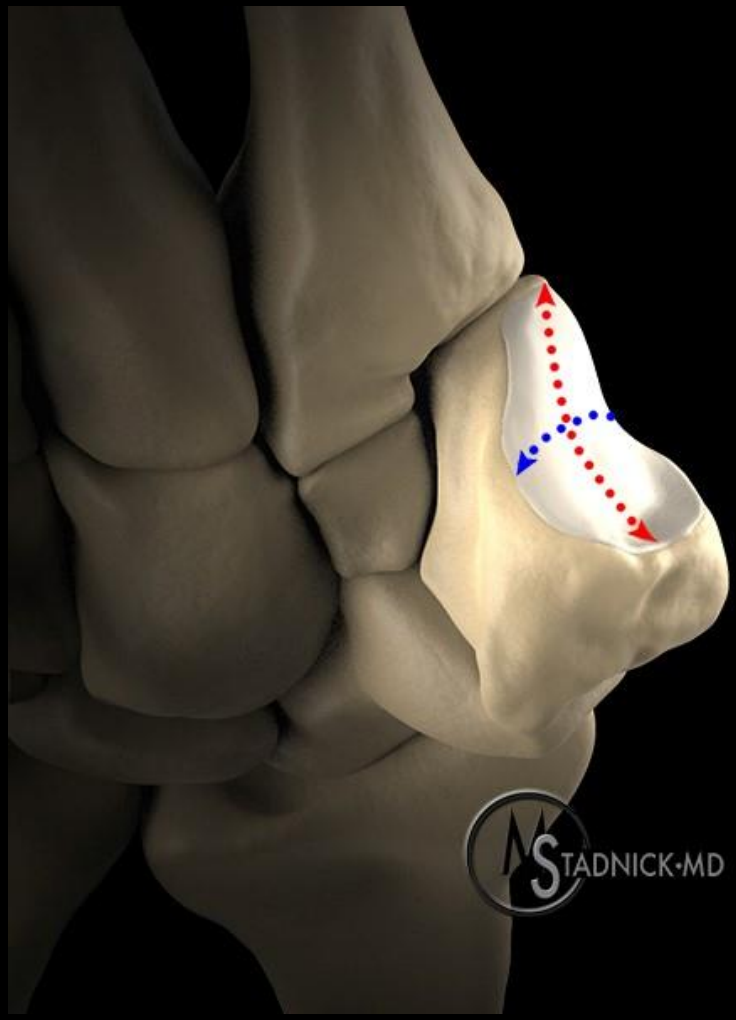
- Important to detect because the trapezium is key in grip and pinch
- Two main types:
  - Body fractures (more common)
  - Volar ridge
    - Avulsion fractures
    - Direct blow

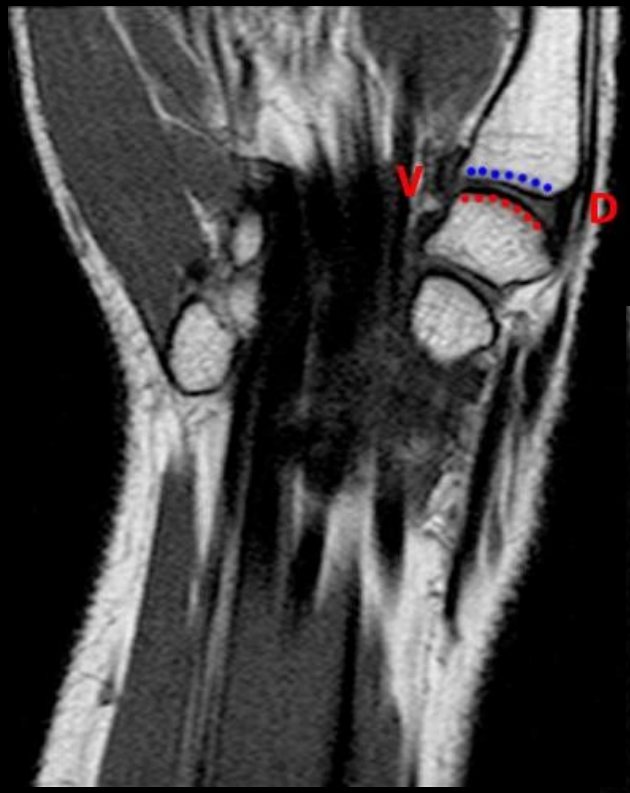
Pertinent Anatomy

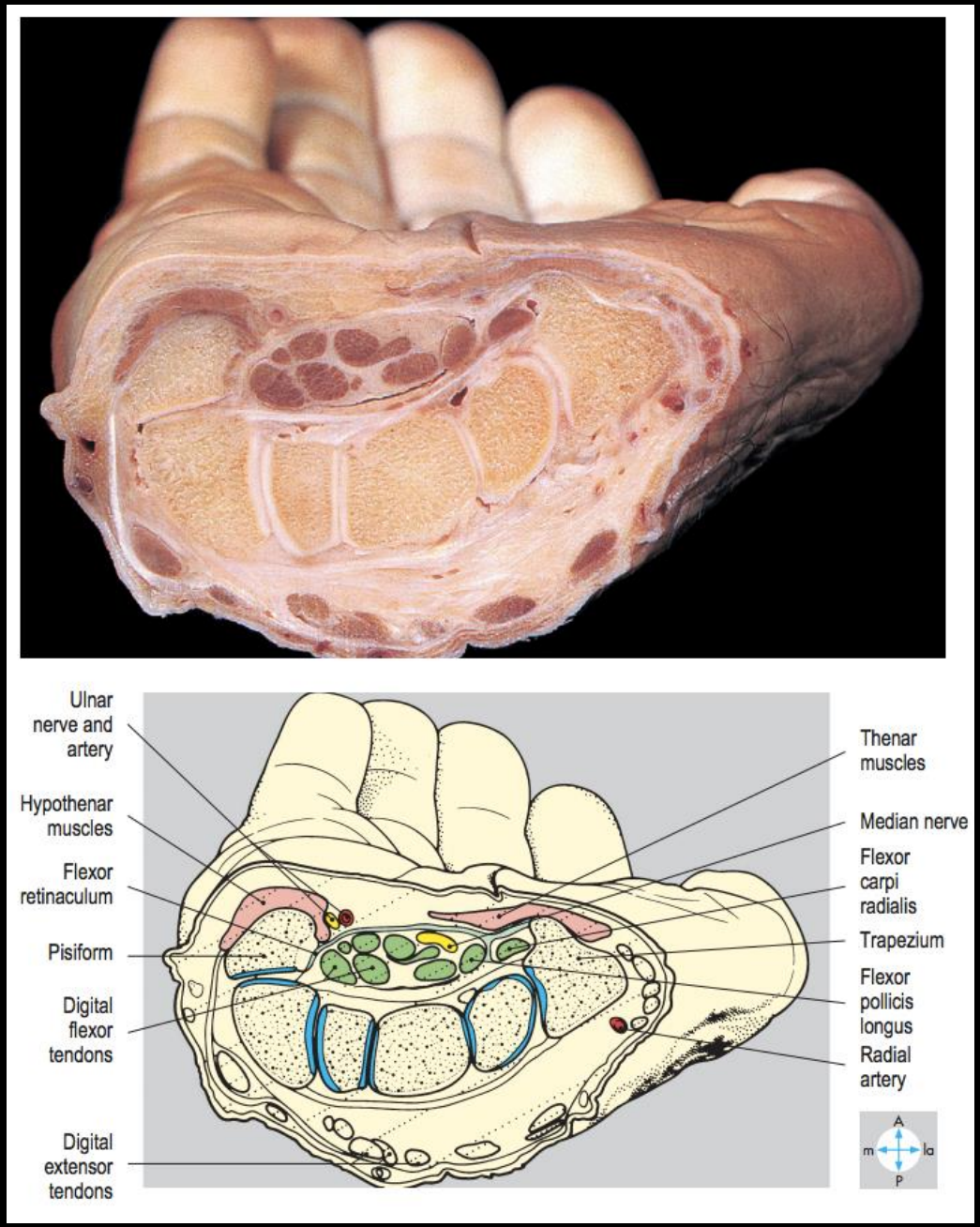
- Three articulations
  - Biconcave with 1st metacarpal
    - “Double saddle”
    - Allow flexion/extension and abduction/adduction
  - Slightly concave with scaphoid
  - Flat facet with the trapezoid
- Volar ridge
  - Attachment site of the transverse carpal ligament (flexor retinaculum)

Pertinent Anatomy

- Vascular supply
  - Via the distal branches of the radial artery, greater dorsally
  - Rich intraosseous anastomosis
    - Osteonecrosis uncommon
  - Radial artery courses immediately dorsal



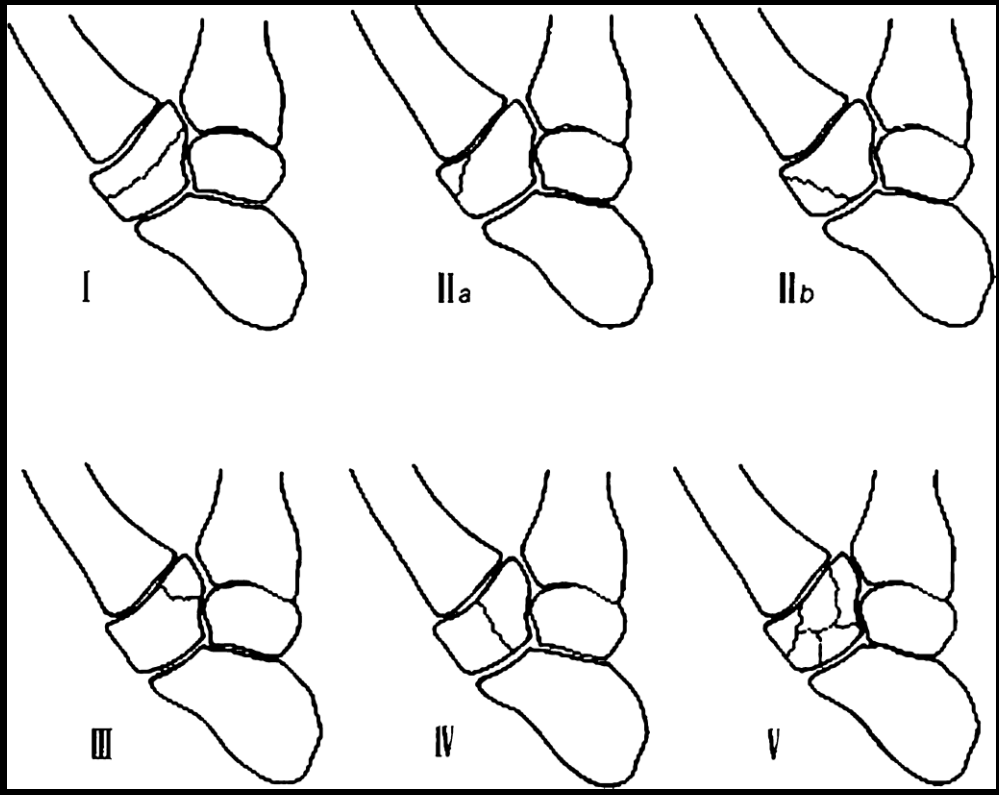




Applied anatomy of the wrist, thumb, and hand, Elsevier, 2013

Body Fractures

- Mechanism: Axially loading or shearing mechanisms across the first CMC joint
- Walker classified 5 types
- Most common: IV



Papp, S. Orthopedic Clinics of North America.

Volar Ridge Fractures

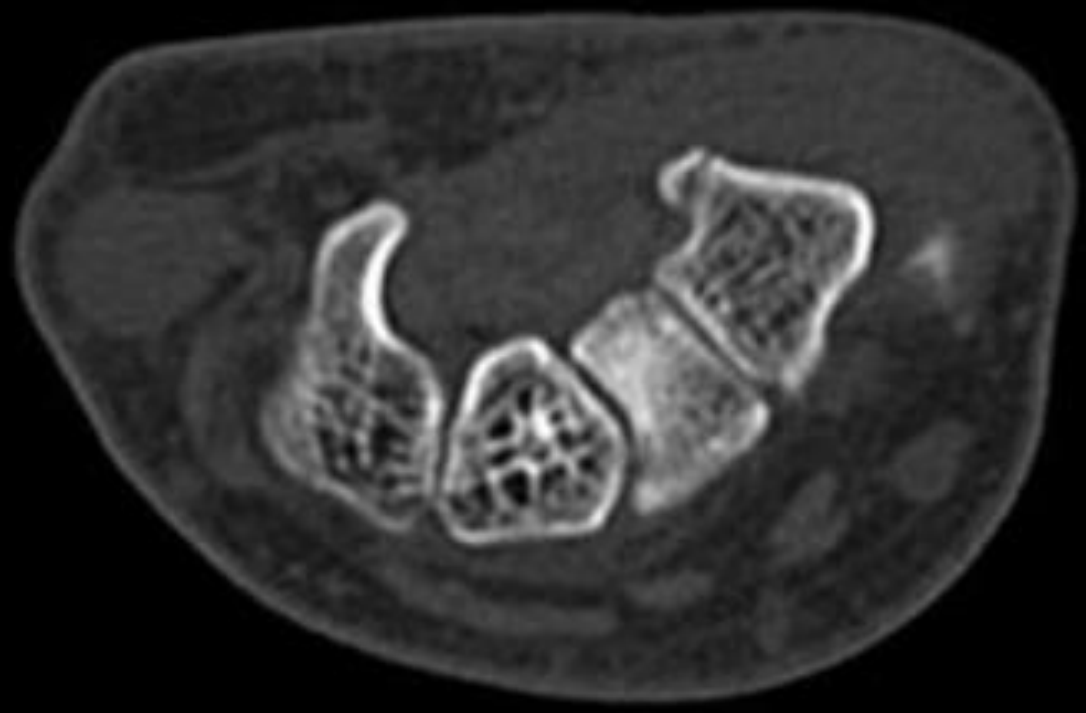
- Mechanism: FOOSH vs. less likely direct blow
- Usually avulsion of the transverse carpal ligament
- Two types:
  - Type I: base
  - Type II: tip
- Presents with pain in the thenar area
  - Can mimic a scaphoid fracture
  - If missed can lead to non-union (→pain, median nerve irritation)

Evaluation

- Radiographs
  - Projections:
    - Standard
    - Bett's view
      - Outlines the trapezium and base of the 1st metacarpal
    - Carpal tunnel view
  - Not accurate
    - Sensitivity: 18% (Balci; 137 total carpal fractures); 67% (Welling; 38 total carpal fractures)

Pavan. Carpal Bone Fractures

CT



Treatment

- Surgical:
  - Complicated fractures (open, comminuted, neurologic/vascular deficit, injury to other carpal bones or 1st CMC subluxation)
  - Displaced body (>2mm)
  - Distal volar ridge fracture (Type II)
- Conservative:
  - Isolated and uncomplicated fractures
  - Non-displaced body or non-displaced trapezial ridge base (Type I) fractures
  - 4-6 weeks of cast immobilization

Key Points

- If a patient continues to complain of radial wrist pain, but x-rays are negative → MRI

- Fracture at the tip of trapezial ridge bad. Fracture at base good. Er. Not as bad.

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