# MSK Interesting Case (17/8/2017)

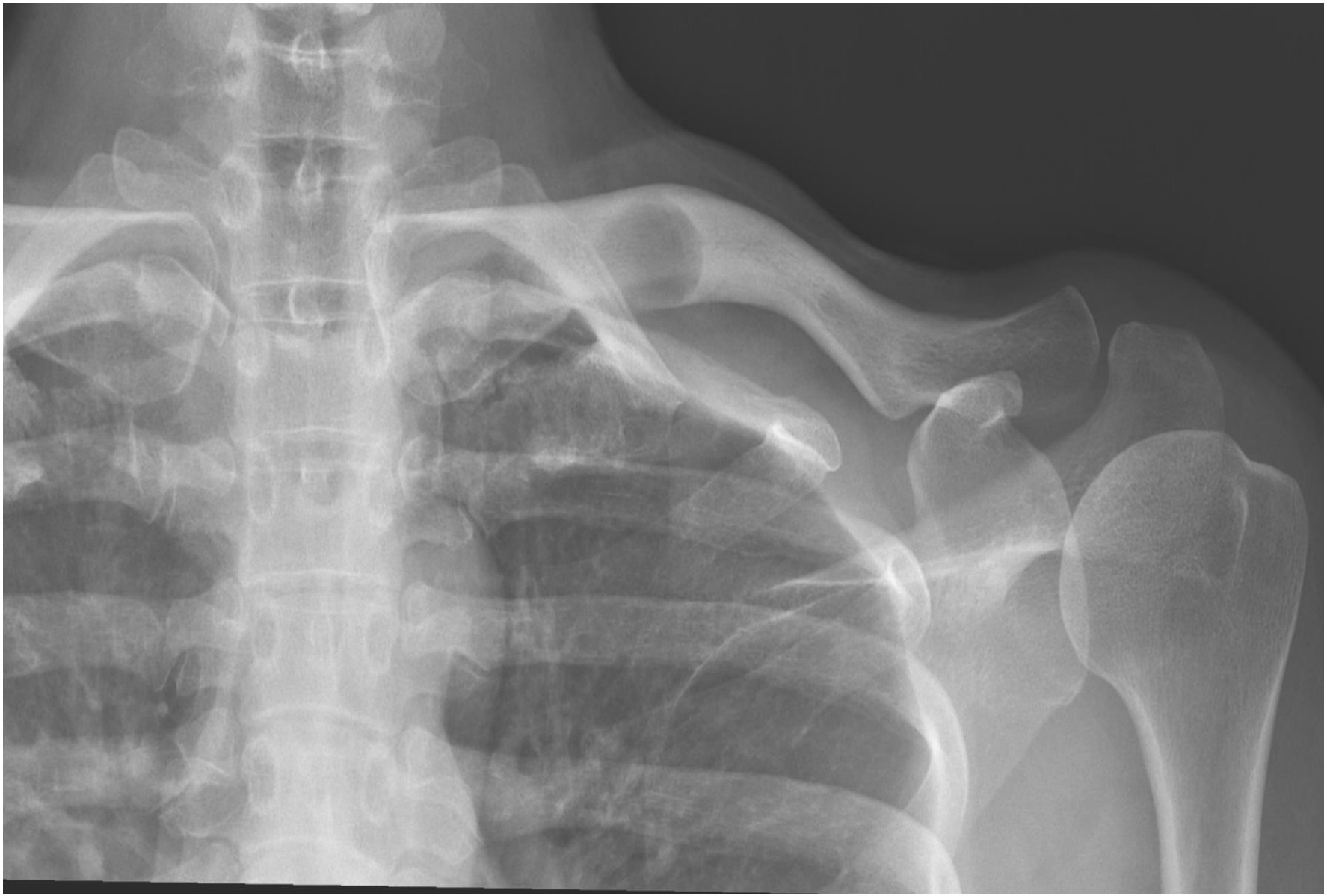
Dr Yap Sheau Huey

3 cases of clavicular swelling with different diagnoses.

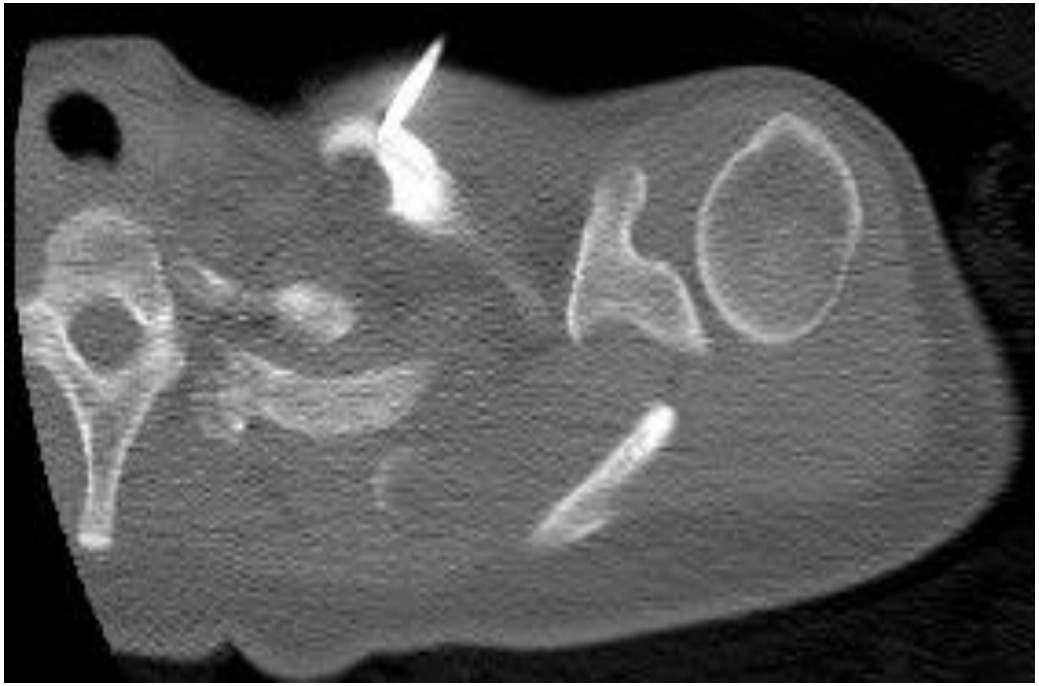
# Case 1

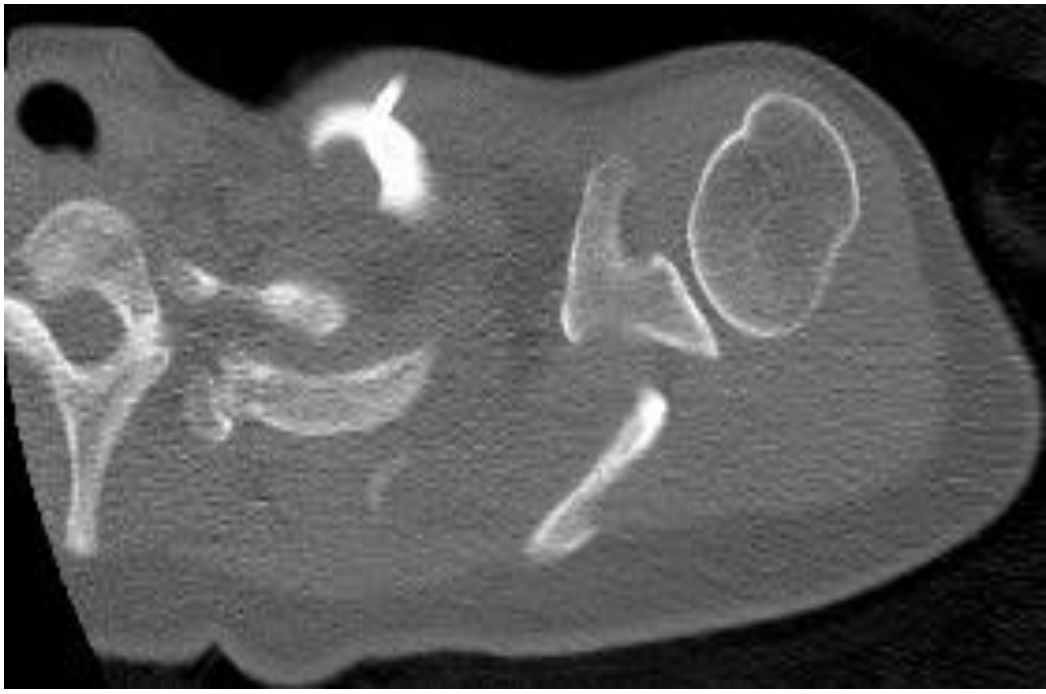
- WKW, 48 y.o lady
- Left mid clavicular and supraclavicular fossa pain – 2 months.
- Rest and nocturnal pain, no trauma.

# Plain XR



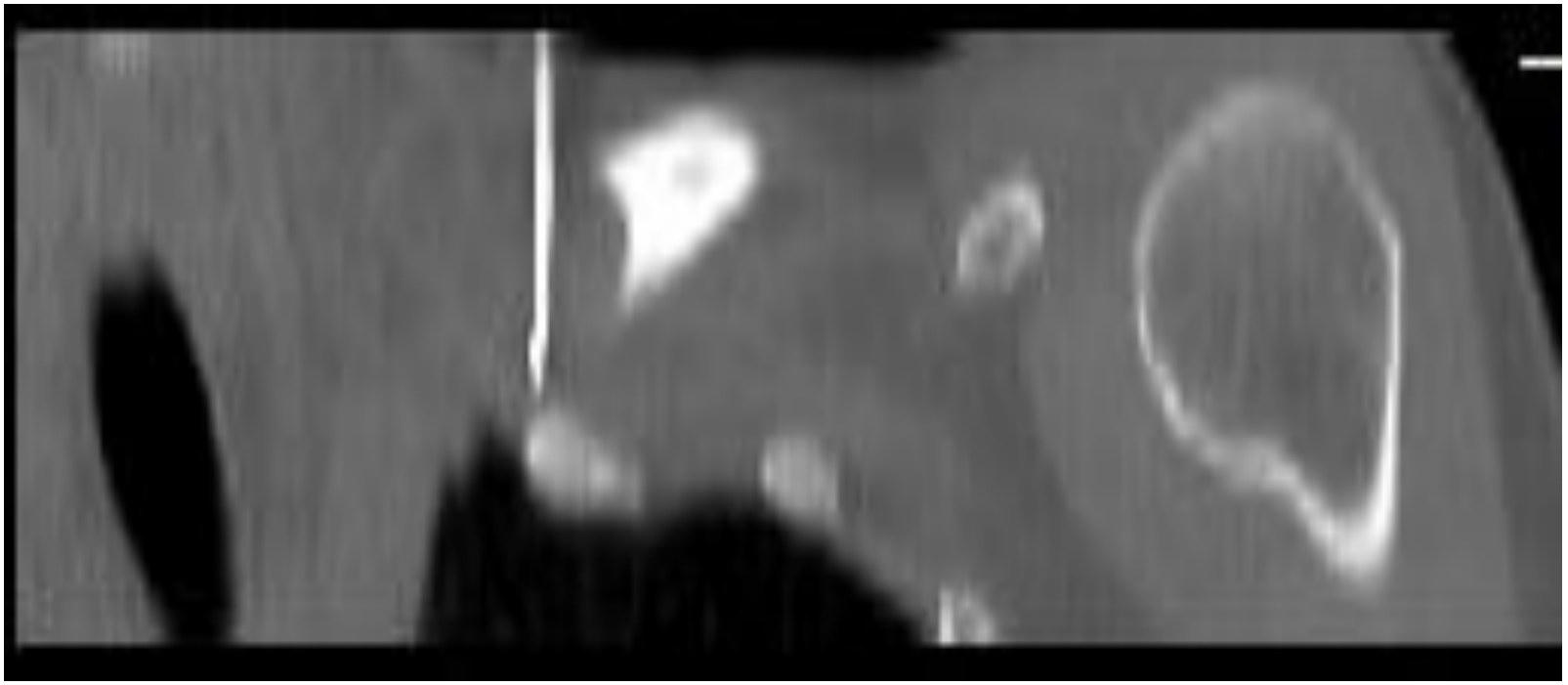
# CT Biopsy ( 11/4/2017)





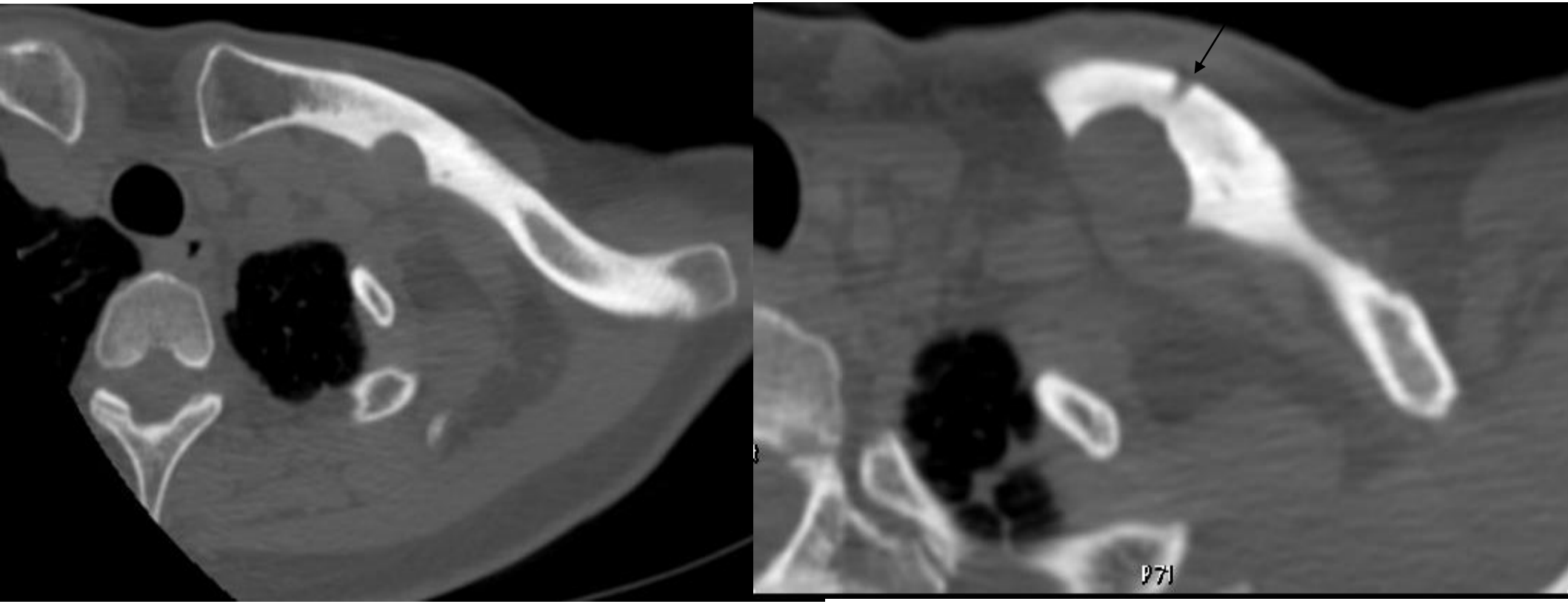
- Very hard sclerotic bone.
- Osteobell (9G), Oncontrol Drill (11G) failed to get bone tissue.

# Coronal view



- Finally, obtained the soft tissue lesion with 16G Temno.

# CT 11/7/2017



- Lesion unchanged in 3 months.

# HPE

- Features are most suggestive of epitheloid vascular tumour including epitheloid hemangioma or hemangioendothelioma.

# Discussion

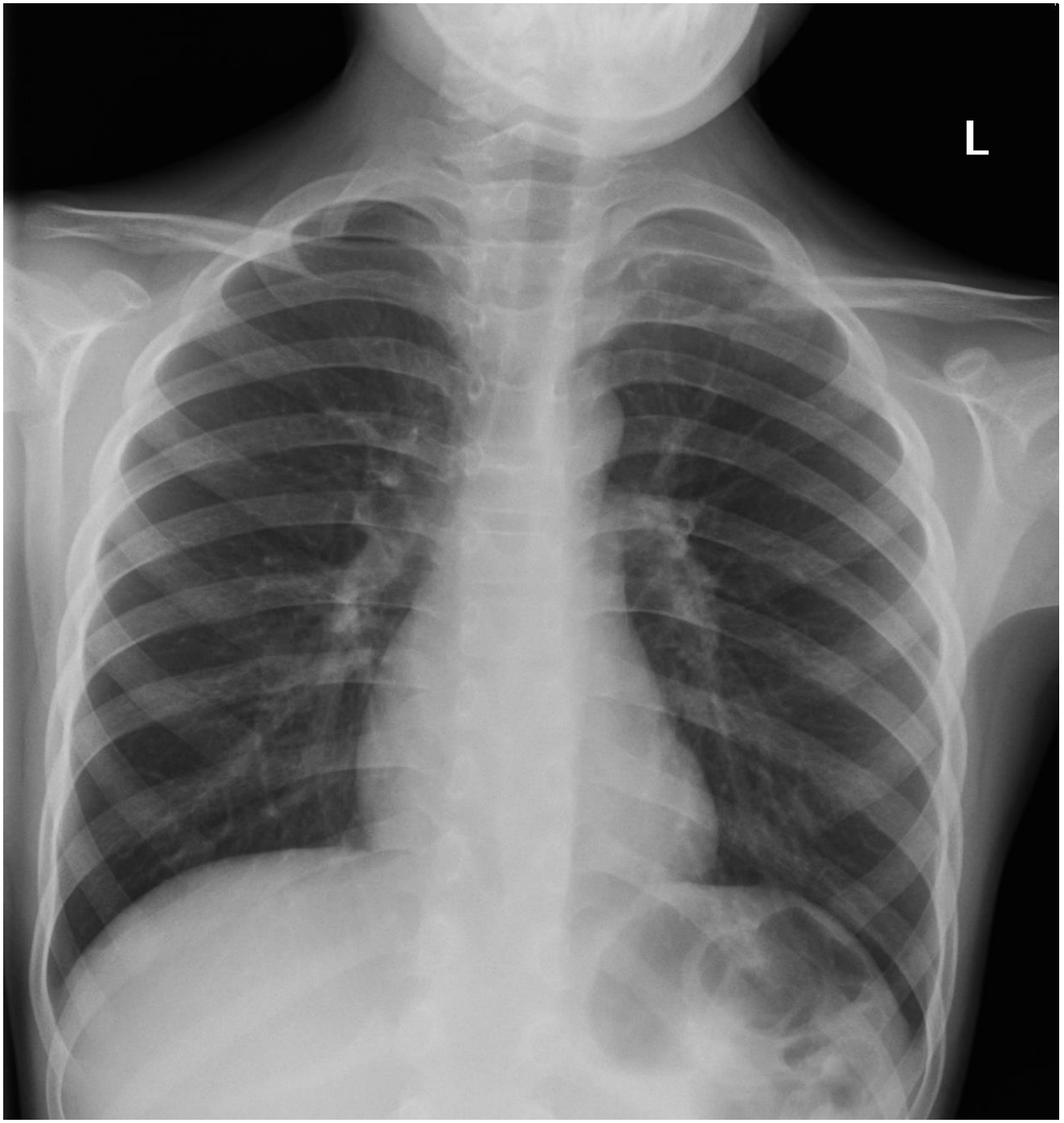
- Vascular tumour of the bone
  - From benign → intermediate → malignant.
- Epithelioid hemangioma
  - Histiocytoid hemangioma, angiolymphoid hyperplasia w eosinophilia.
  - New entity in 2013 WHO classification
  - Composed of small vessels lined by epitheloid endothelial cells.
  - Long bone > flat bone > vertebra.
  - Locally aggressive, recurrence ~ 10%.

- Radiology:
  - Ranges from well defined osteolytic lesion, sclerotic margin eccentrically located →
  - Mixed lytic sclerotic, cortical expansion and thinning.
- Treatment:
  - Primary curettage, marginal en bloc resection.

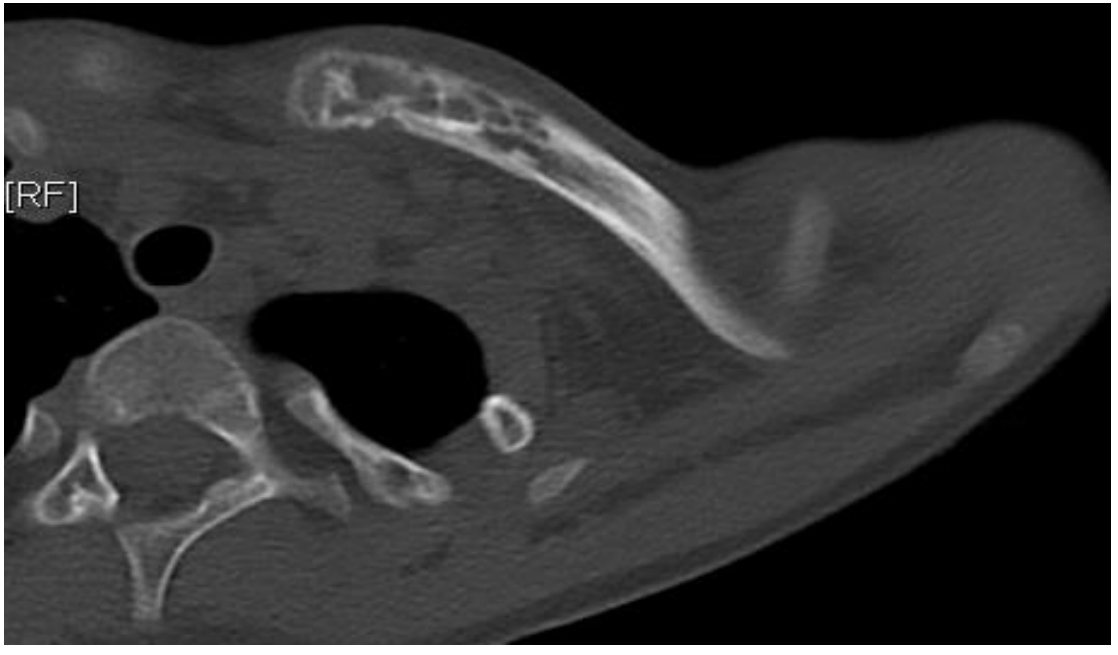
# Case 2

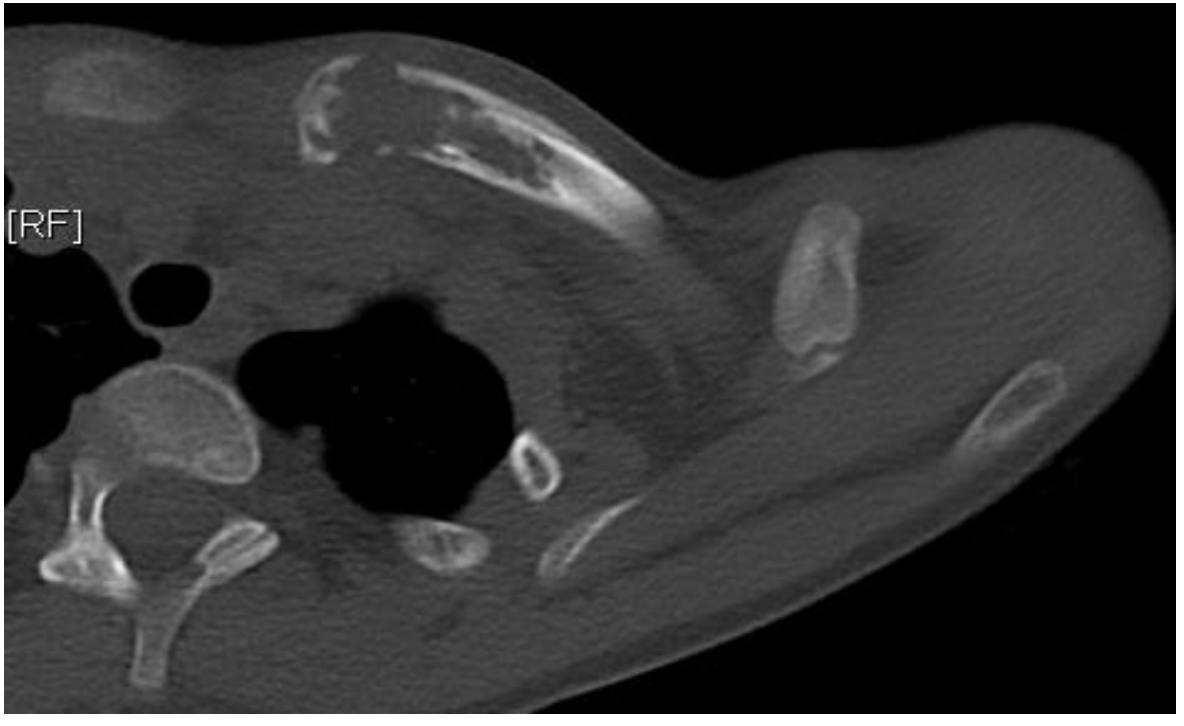
- LTW, 9 y.o boy
- Presented for painful left clavicular swelling for 2 months.
- No constitutional symptoms.

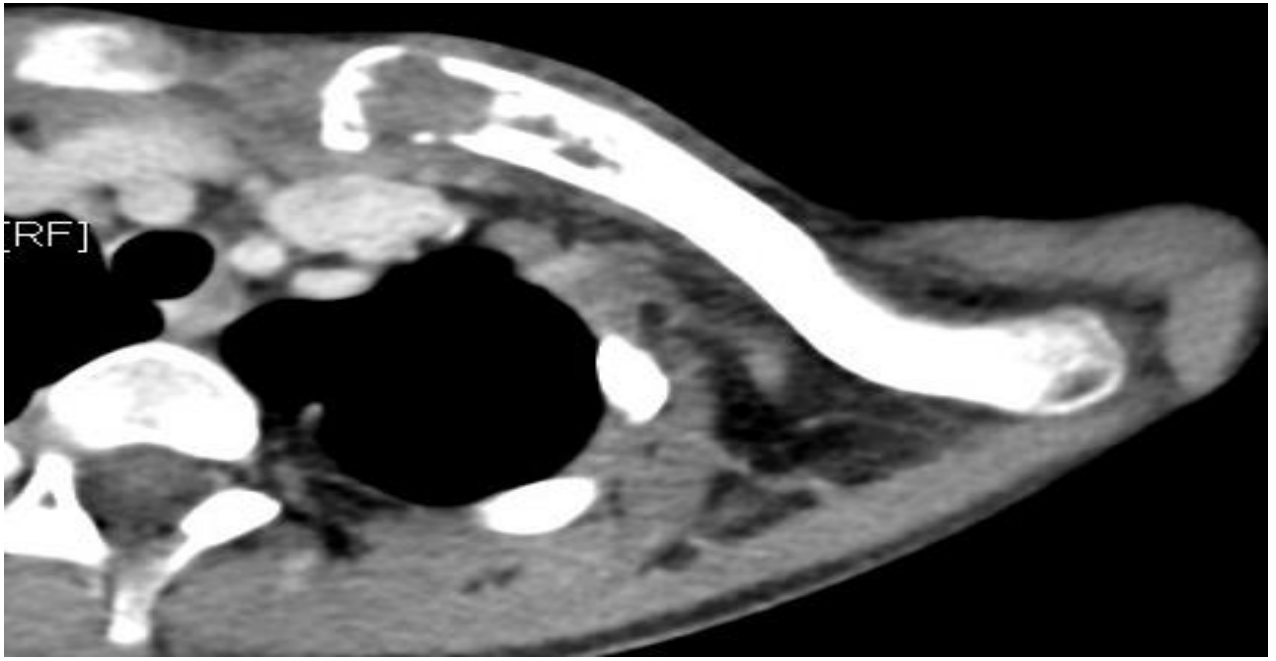
# Plain XR

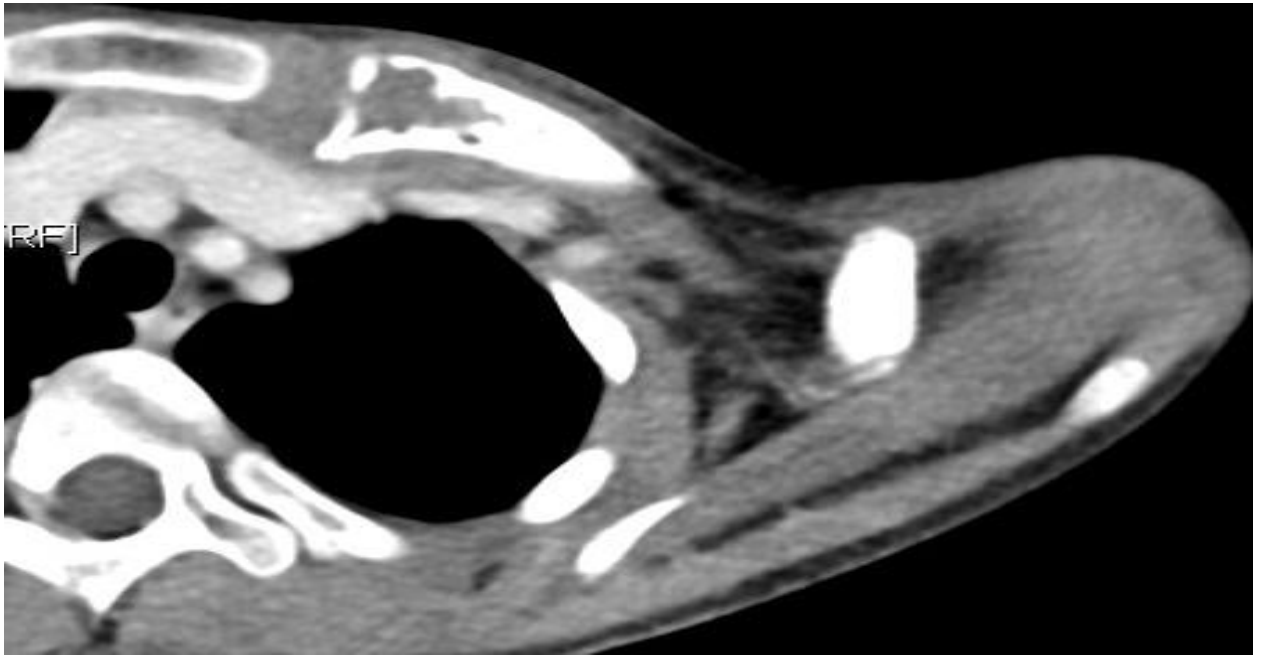


# CT



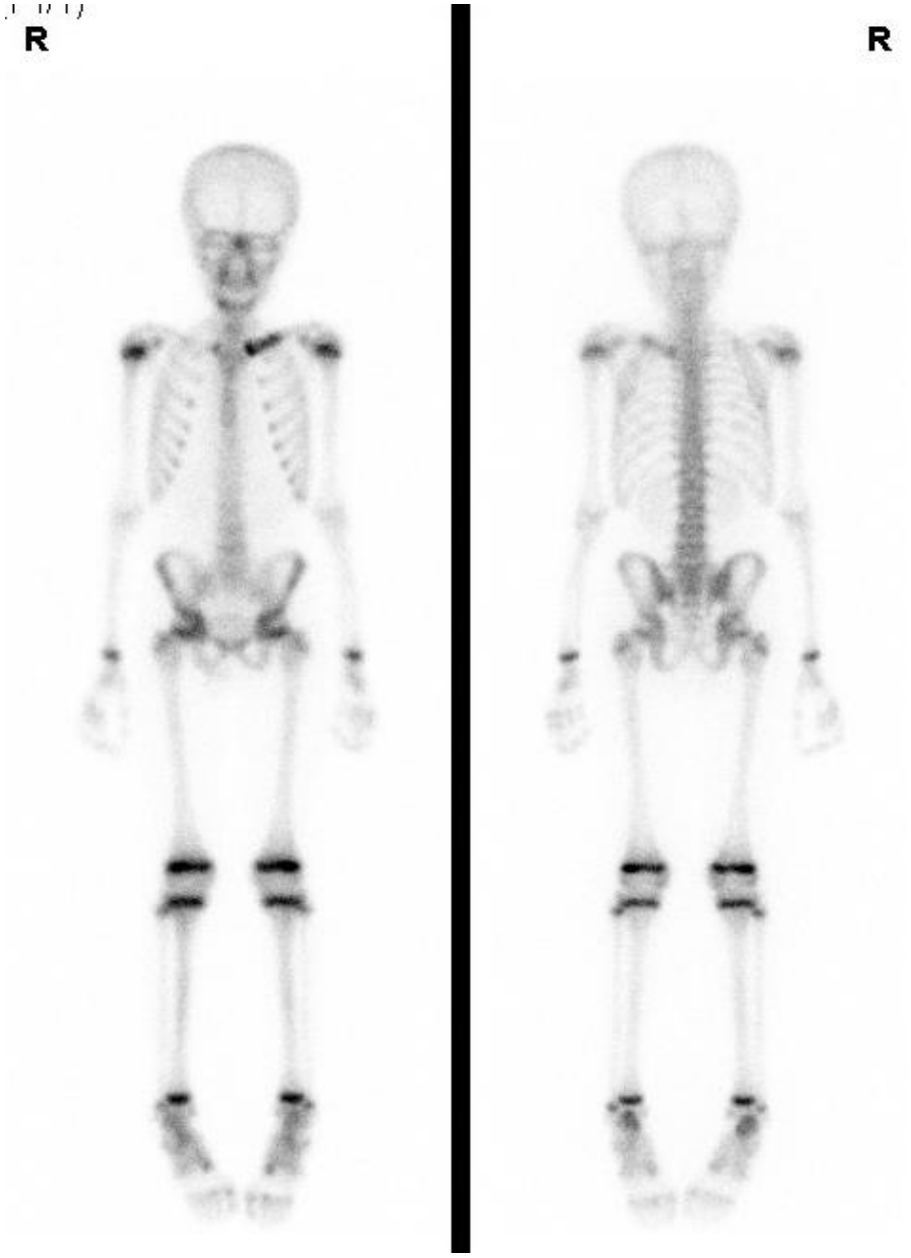







- Expansile lytic lesion with periosteal reaction and cortical disruption.

# Bone Scan



# Diagnosis

- Histopathology:
  - Consistent with Langerhans cell histiocytosis.

# Langerhans Cell Histiocytosis

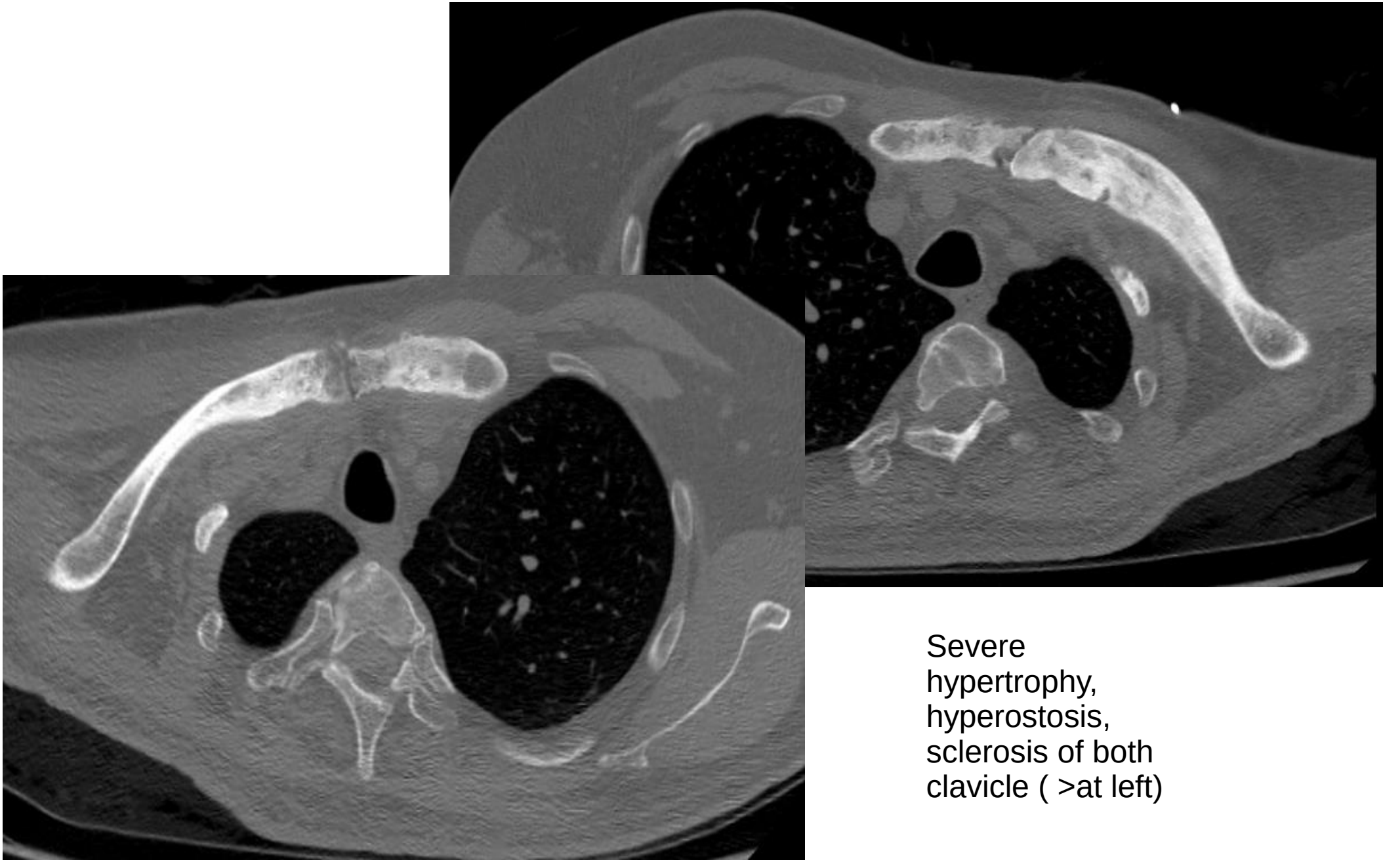
- A group of diseases due to abnormal proliferation of Langerhans cells in 1 @ > organs.
- Causes:unknown.
- Divided into: unifocal(localized), multifocal unisystem, multifocal multisystem.
- Most common in children.
- Osseous manifestation: most common ( >flat bone)

- Long bone: diaphysis/ metaphysis.
- Intramedullary lesion
- Early lesion: lytic, expansile, aggressive
- Mature lesion: sharply defined sclerotic margin
- Chronic: may resolve/appear sclerotic.

# Case 3

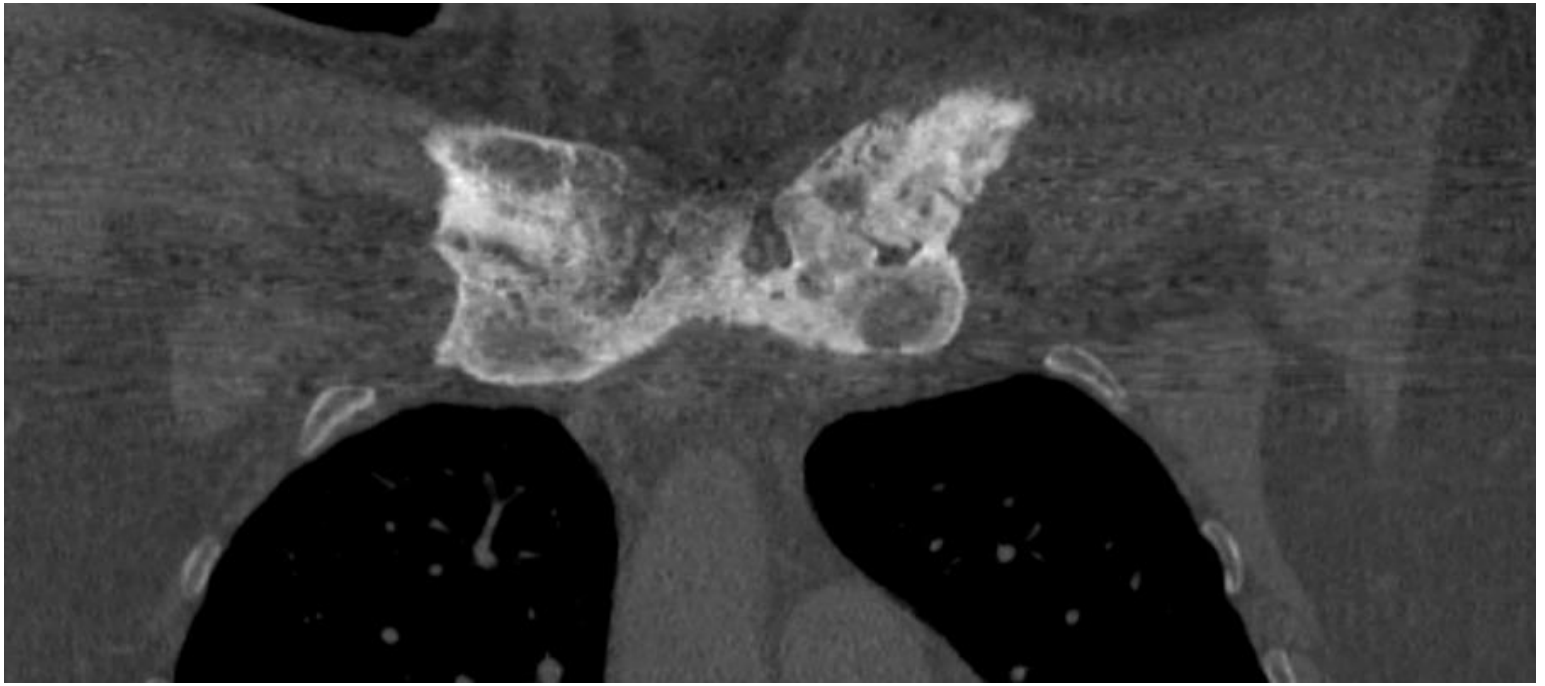
- KKM, 52 y.o man
- Left clavicular painless swelling for 2 years.
- Swelling is fluctuated in size.

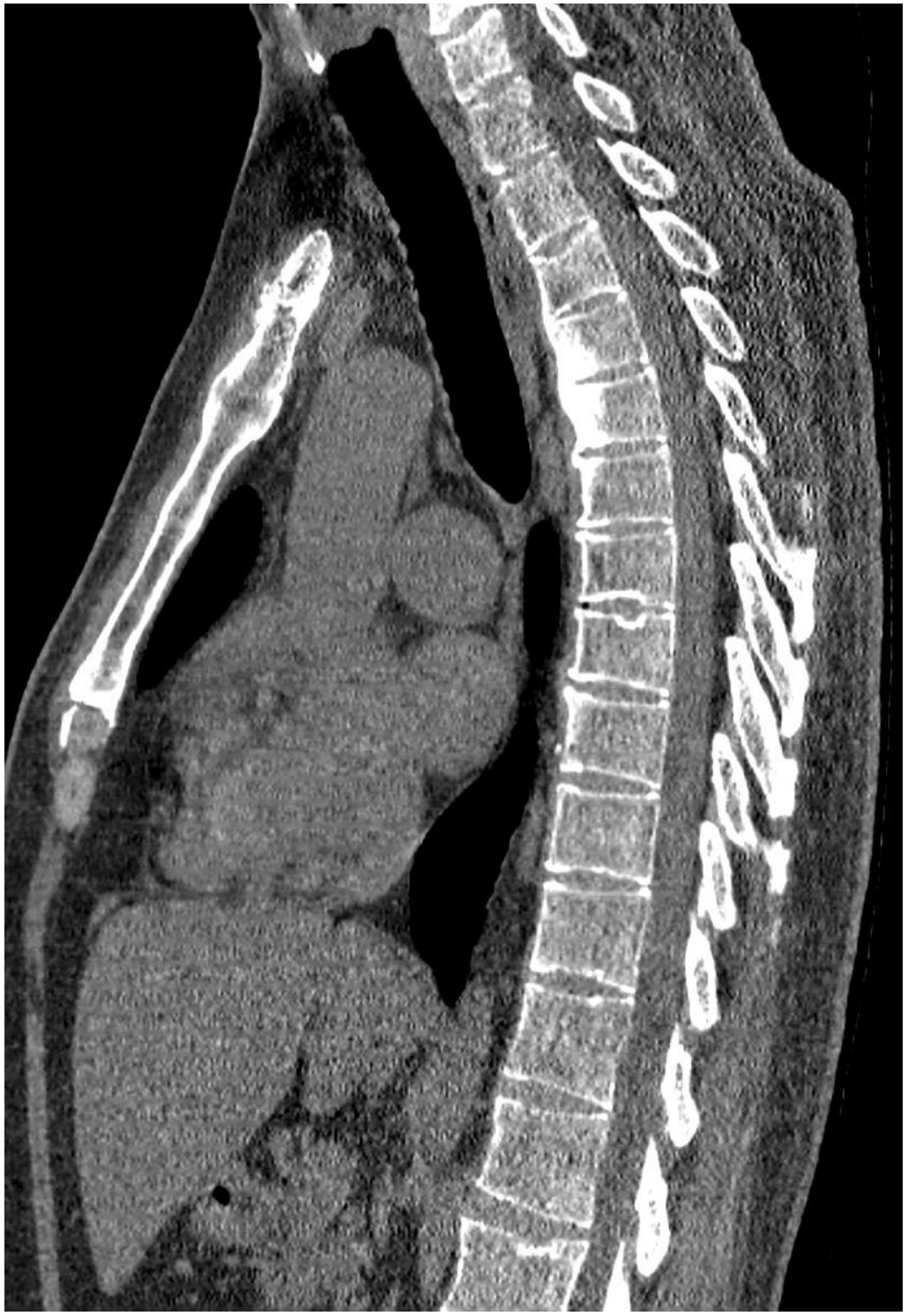
# CT



Severe hypertrophy, hyperostosis, sclerosis of both clavicle ( >at left)

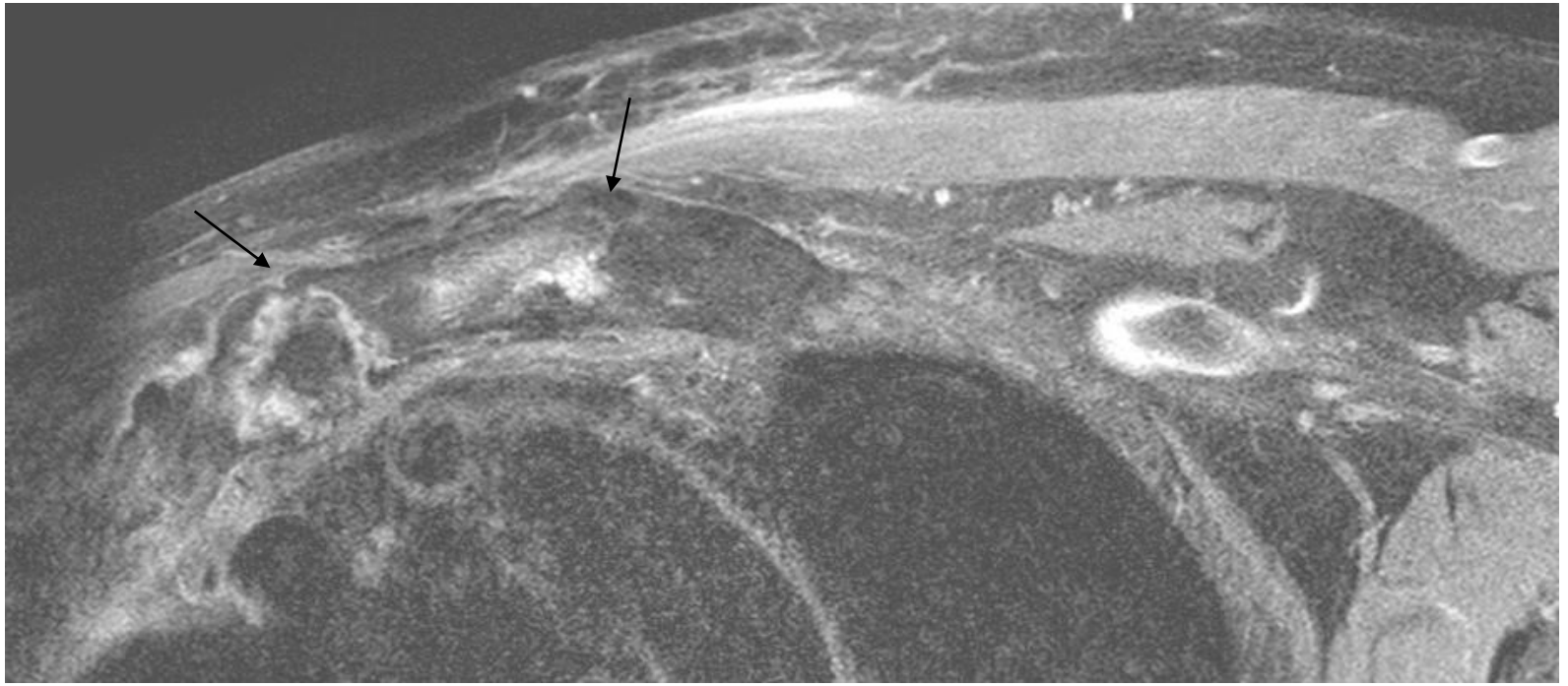
Ankylosis of bilateral sternocostal joint, calcifications of costocalvicular ligament

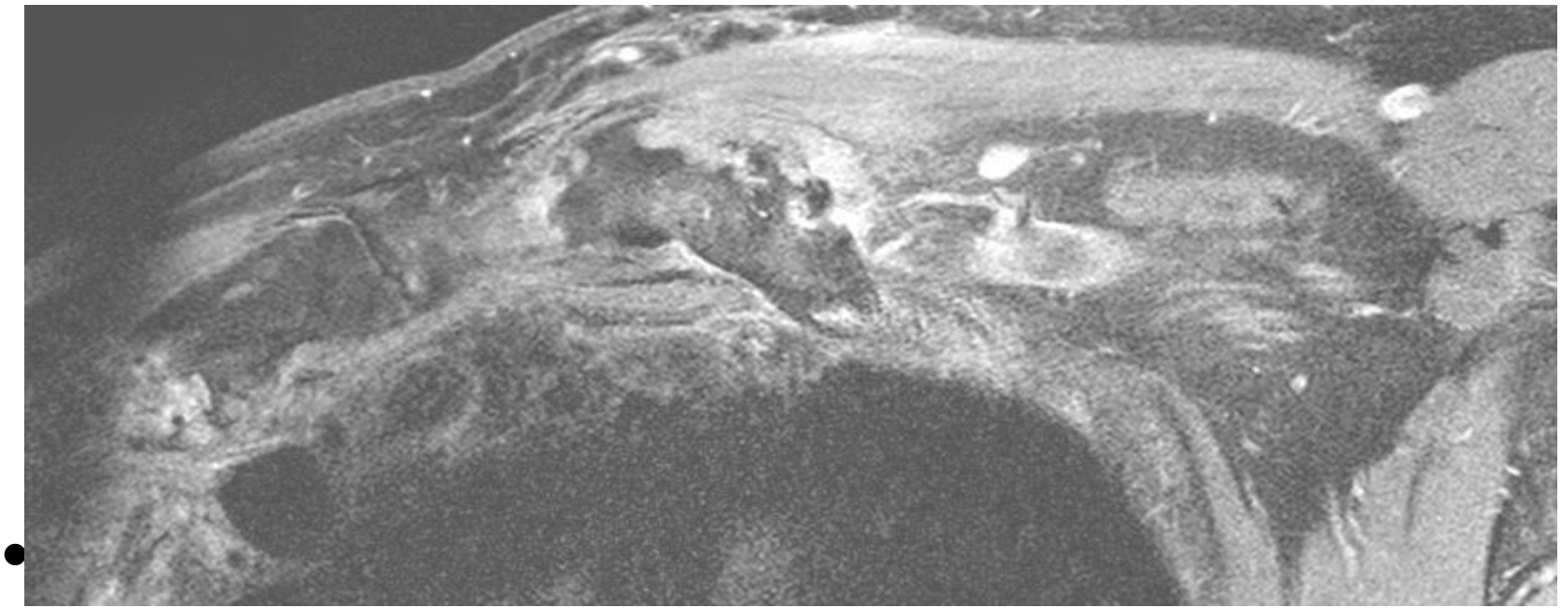




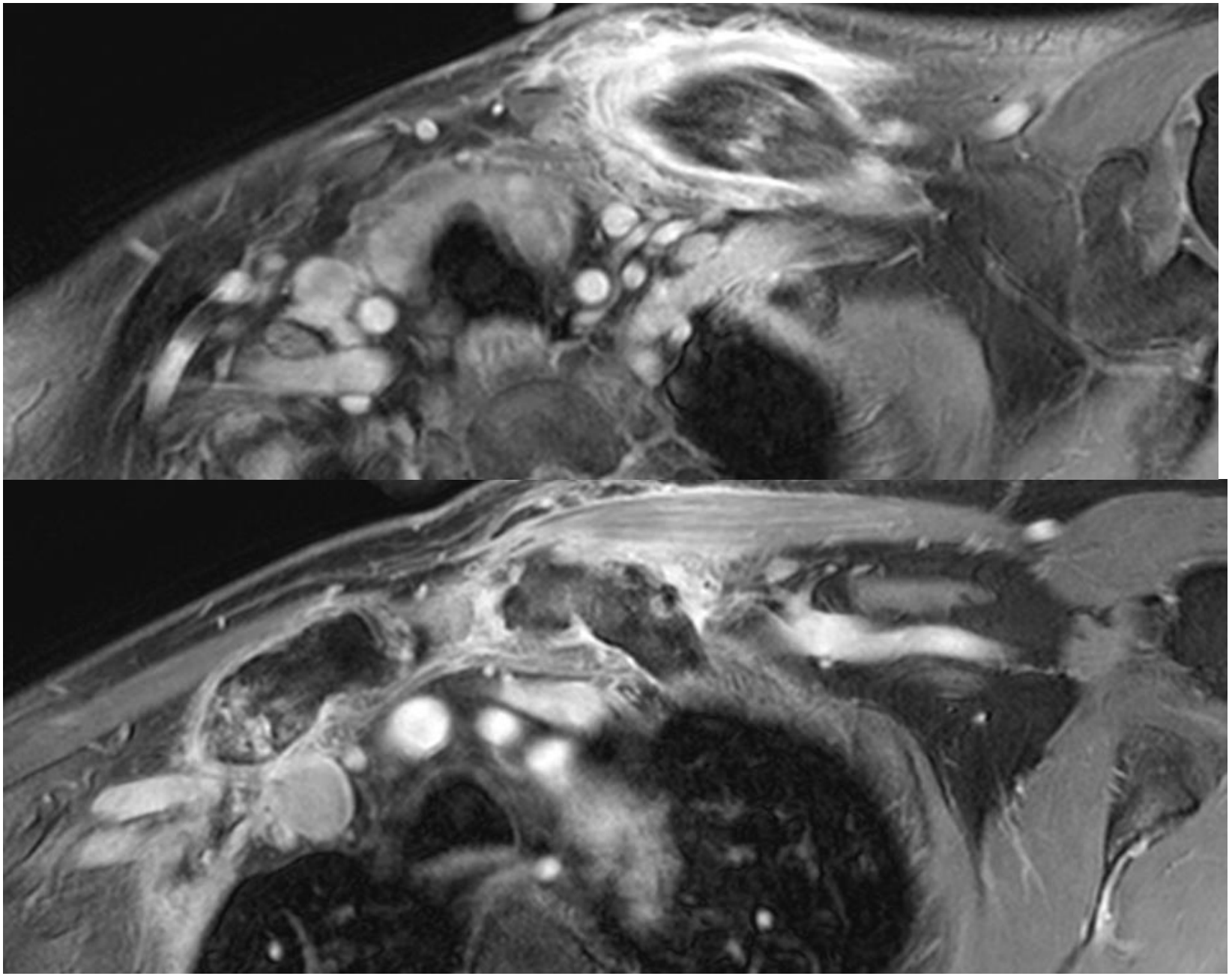
- Sclerosis of anterior edge of T4-T6 vertebrae.
- Ankylosis of manubriosternal joint

# MRI





# Post Contrast



# SAPHO

- Acronym of
  - **S**ynovitis, **A**cne, **P**ustulosis, **H**yperostosis, **O**steitis
- Inflammatory condition whose denominator is
  - Aseptic osteoarticular lesions
  - Skin lesions
  - Both manifestations need not co-exist for diagnosis

- Osteoarticular lesions:
  - Synovitis, hyperostosis, osteitis, arthropathy, enthesopathy
  - Osteodestructive (early stage); osteoproliferative ( later stage)
  - Adult: Anterior chest wall ( sterno-costo-clavicular junction) > axial skeletal ( spine, SI Joint)
  - Can have surrounding soft tissue inflammation.
  - NO abscess, fistula, large paravertebral masses.

# Case 4

- 18 y.o man.
- Recurrent hip pain at anterior hip and greater trochanter.

# Plain XR

# MRI Coronal View

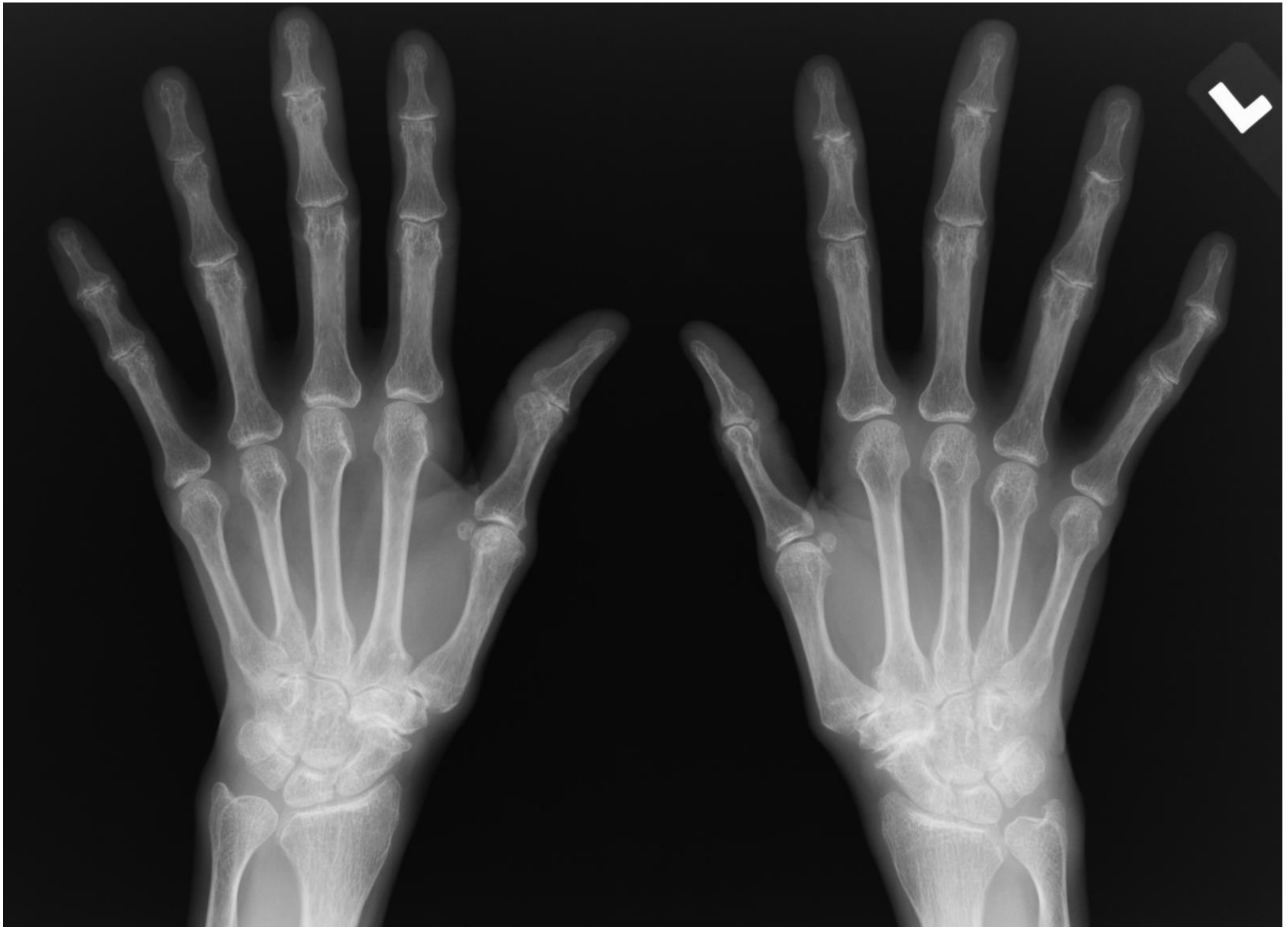
# Supraacetabular fossa (Pseudo-cartilage defect)

- Normal variant, in about 10% of MRI hip.
- Type 1: with contrast
- Type 2: with cartilage
- Location: 12 o'clock of acetabular roof
- Distinguished with osteochondral/chondral defect by:
  - Location
  - Normal underlying marrow signal
  - No cartilage defect in arthroscopy

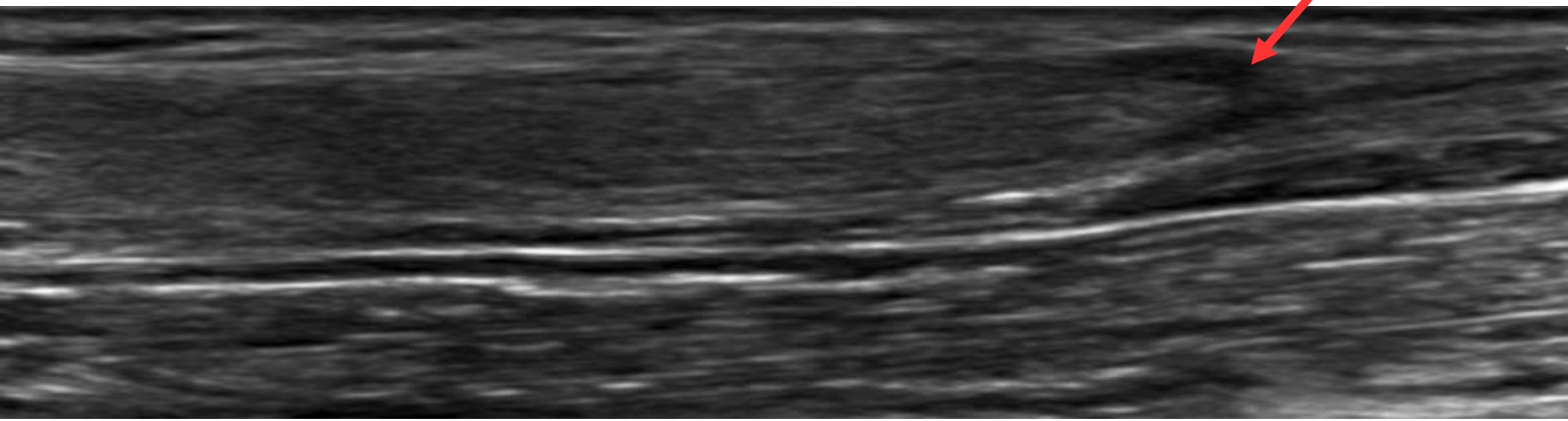
# Case 5

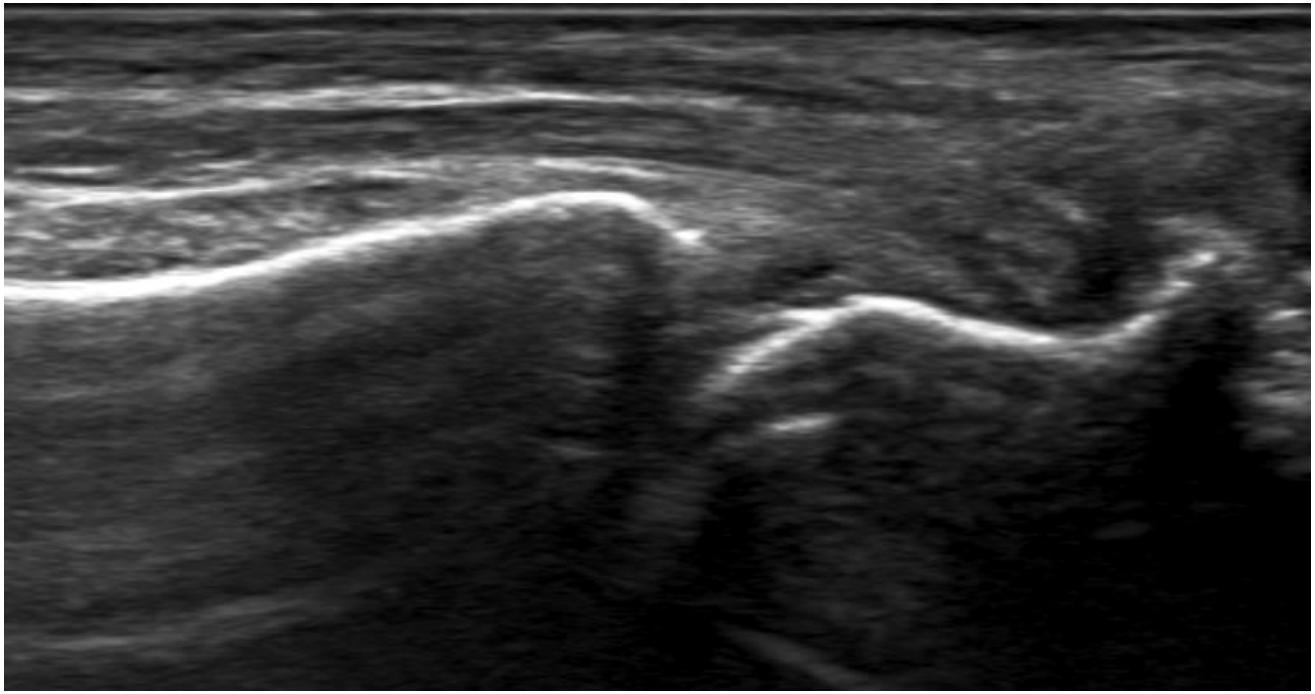
- YLY 65 y.o lady
- Initially has sudden onset right wrist swelling and mild pain 6 months ago.
- Swelling later 'moved' to the distal forearm.
- Stable in size.
- No h/o trauma.

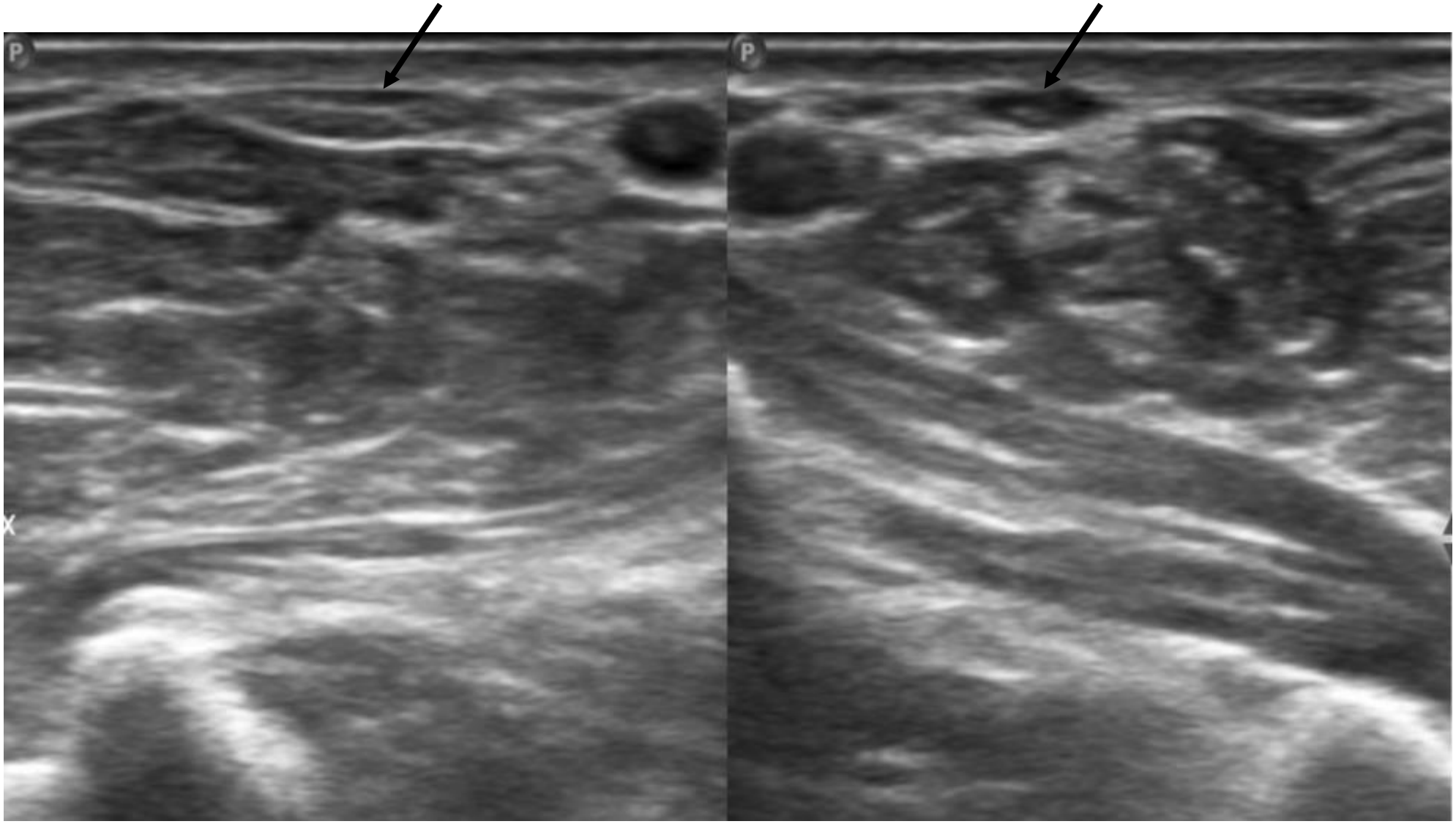
# Clinical



# US

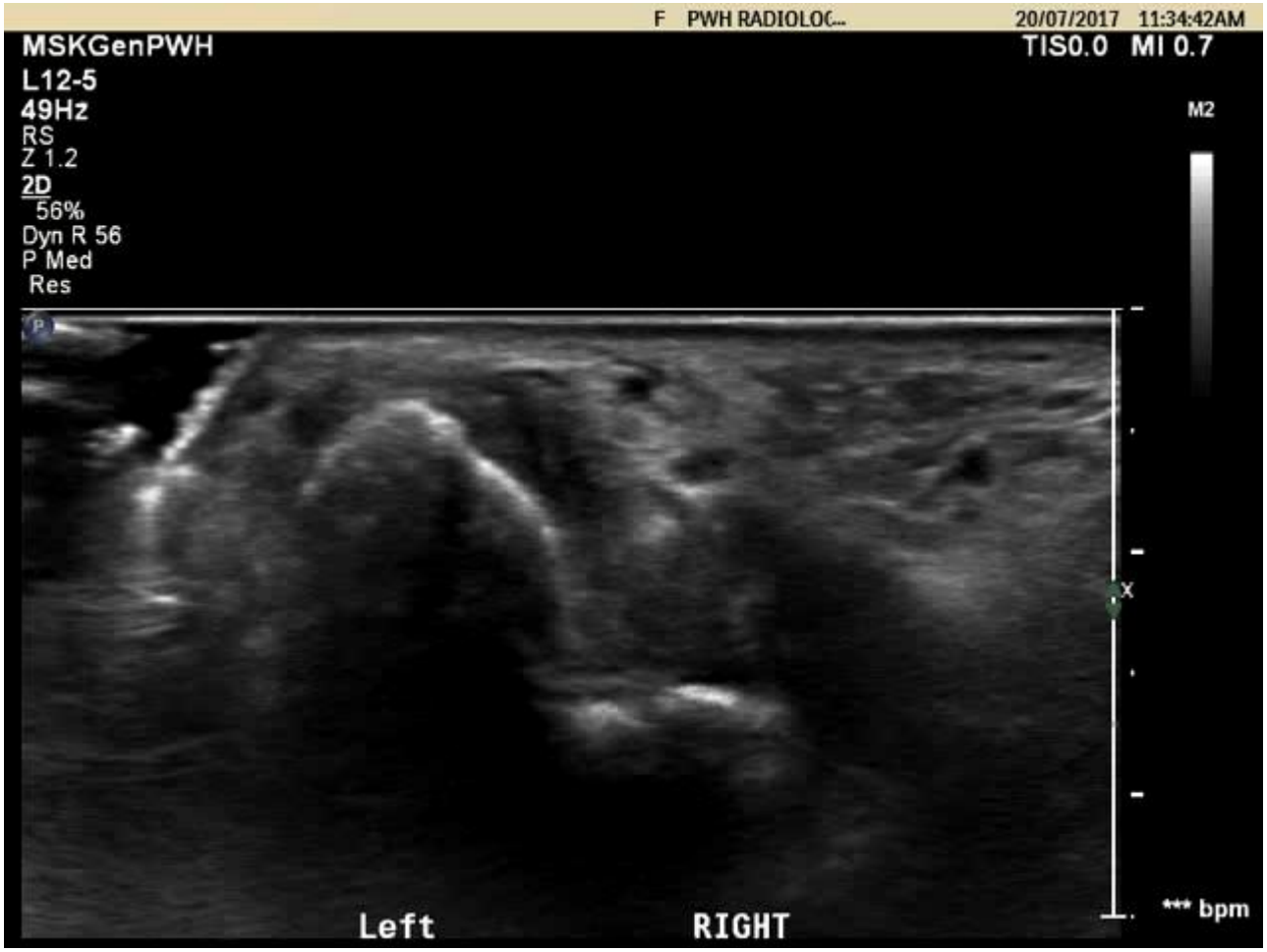






Left

Right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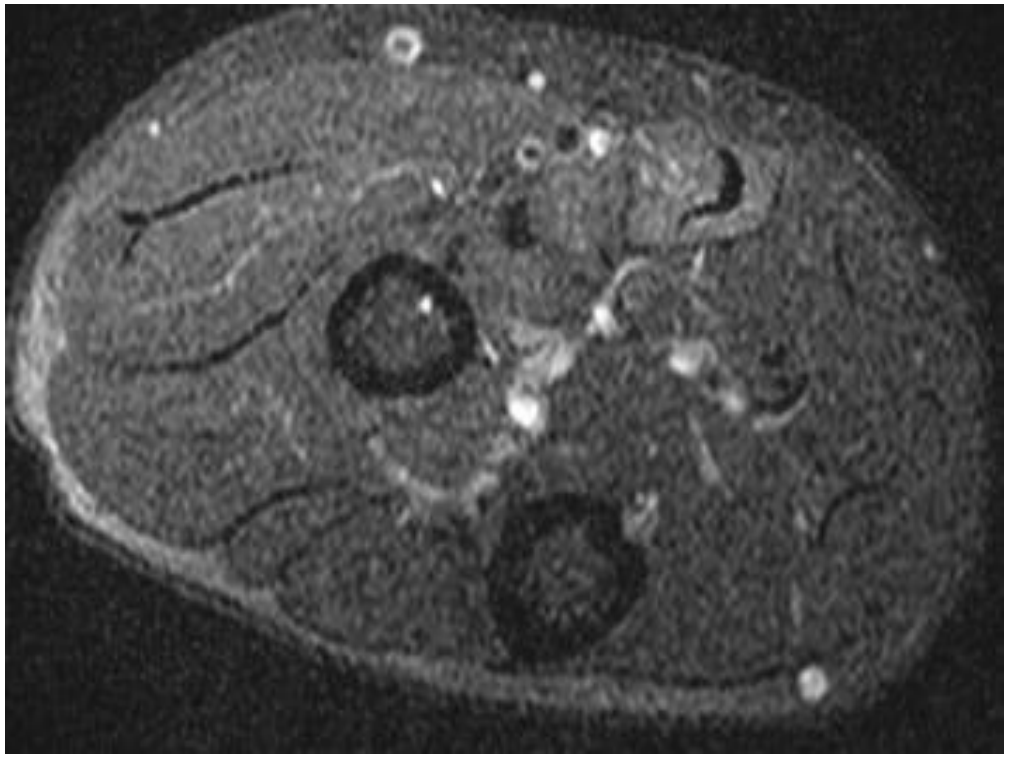
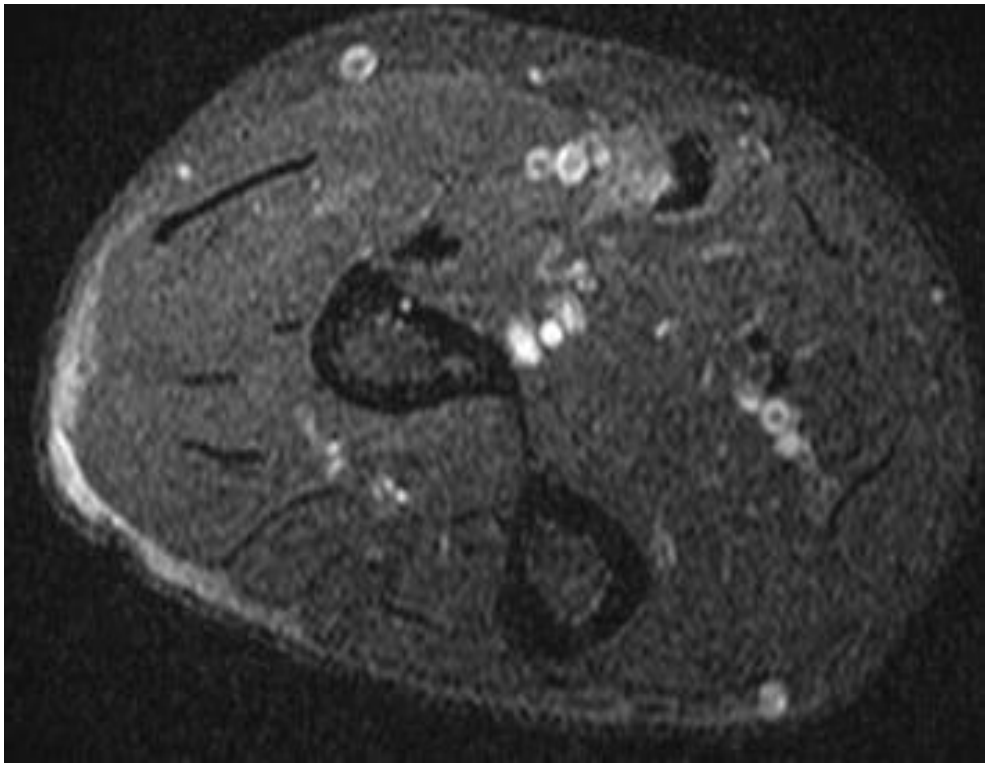
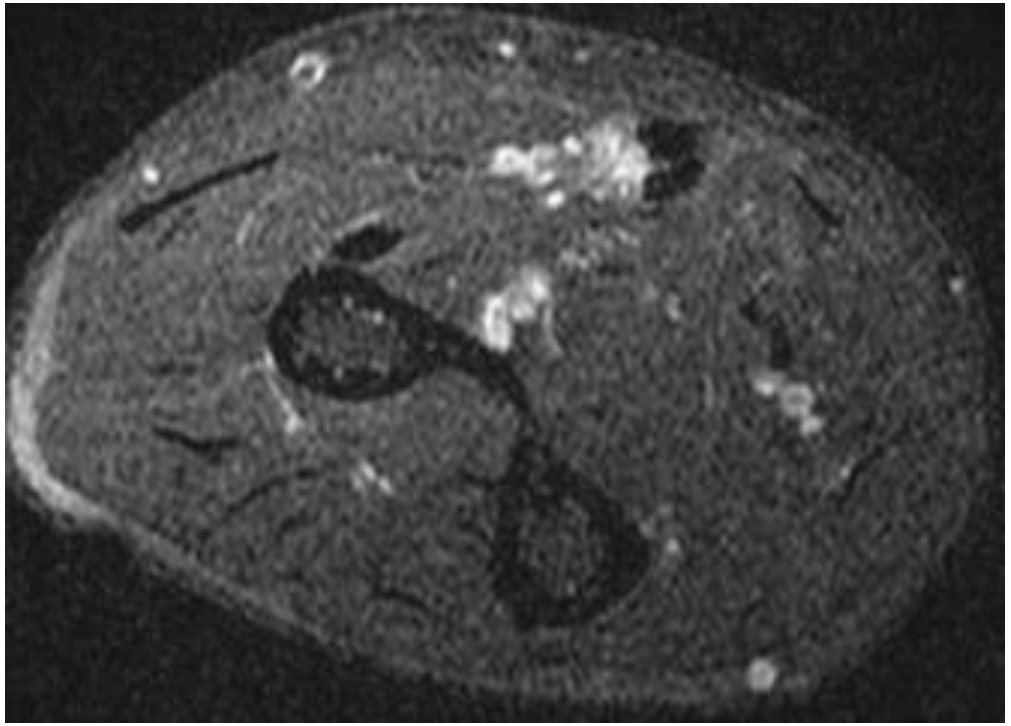
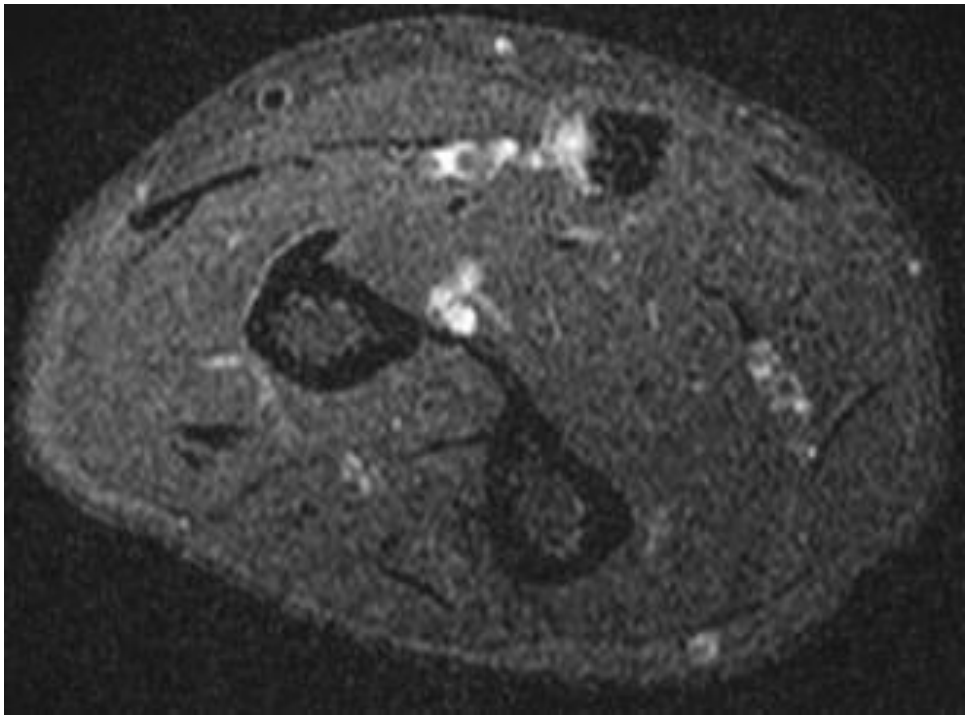
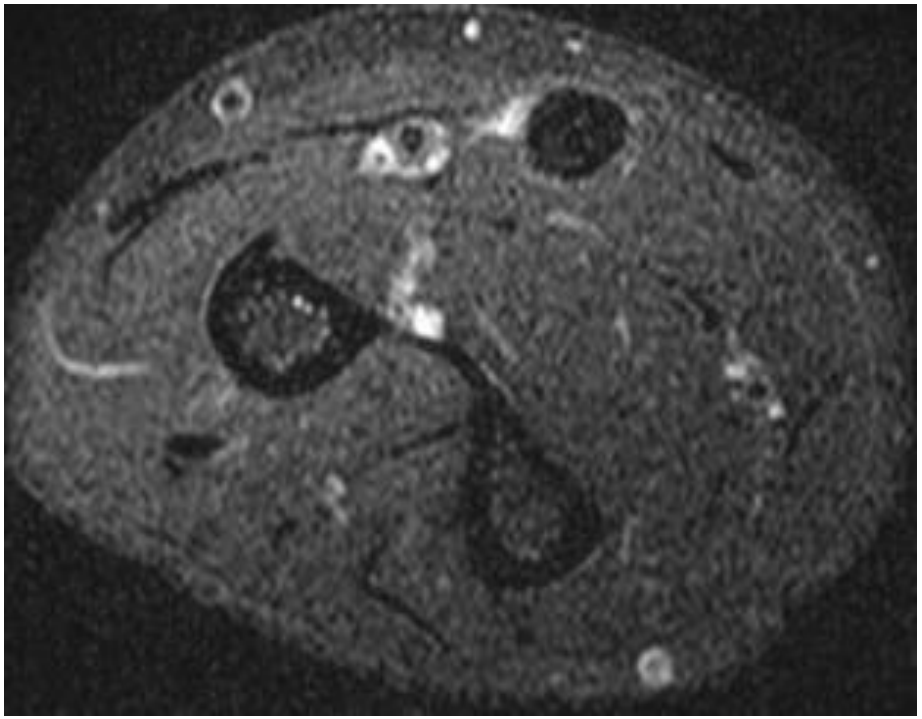
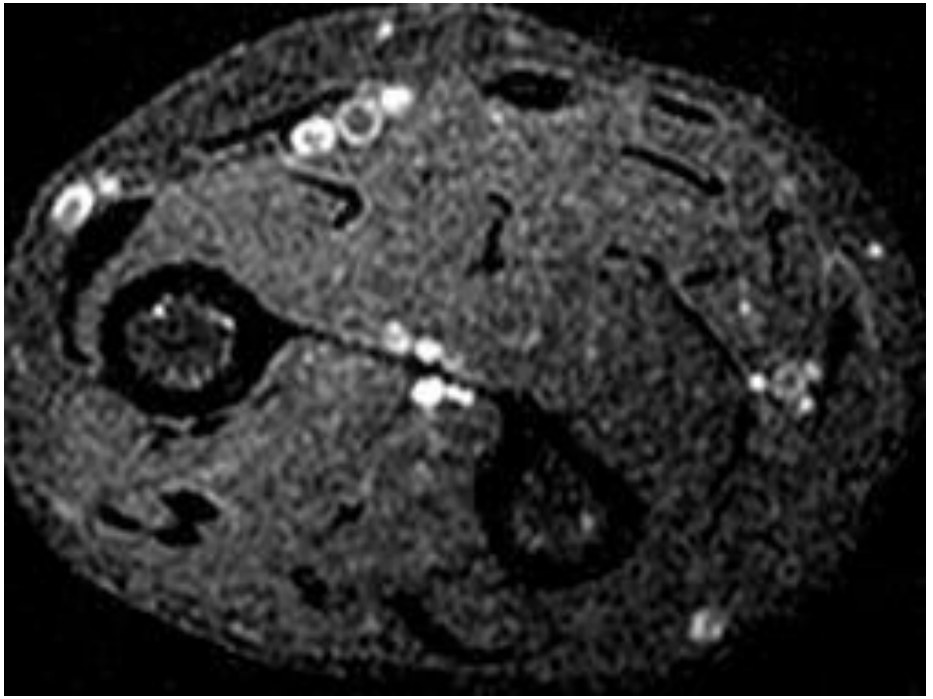









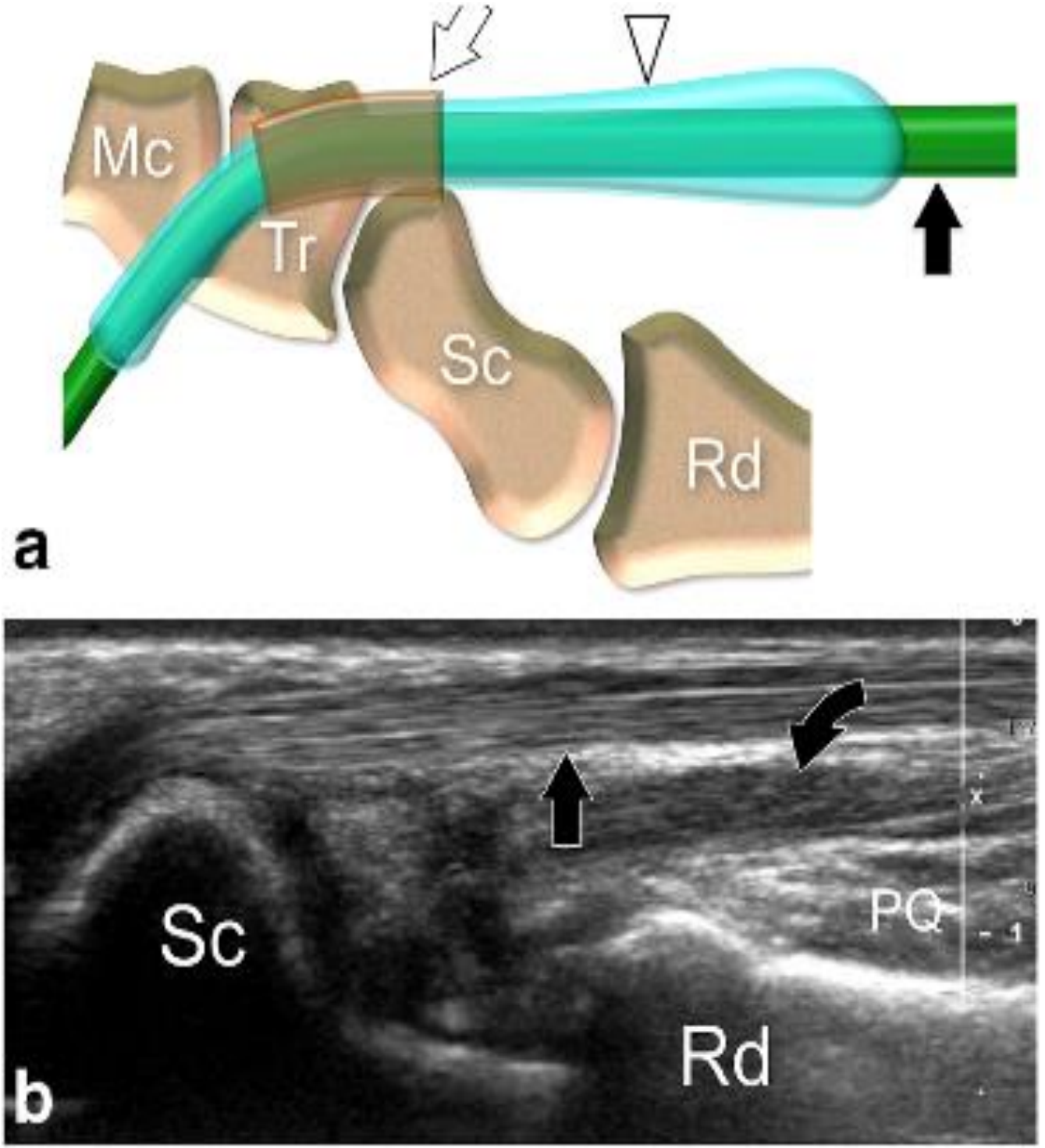
# Diagnosis

- Partial tear of flexor carpi radialis secondary to triscaphe osteoarthtitis.

# Discussion

- Flexor carpi radialis (FCR) muscle:
  - from humerus epicondyle and inserts to base of 2nd and 3rd metacarpal.


Adapted from Flexor carpi radialis tendon ultrasound pictorial essay, Dien et al



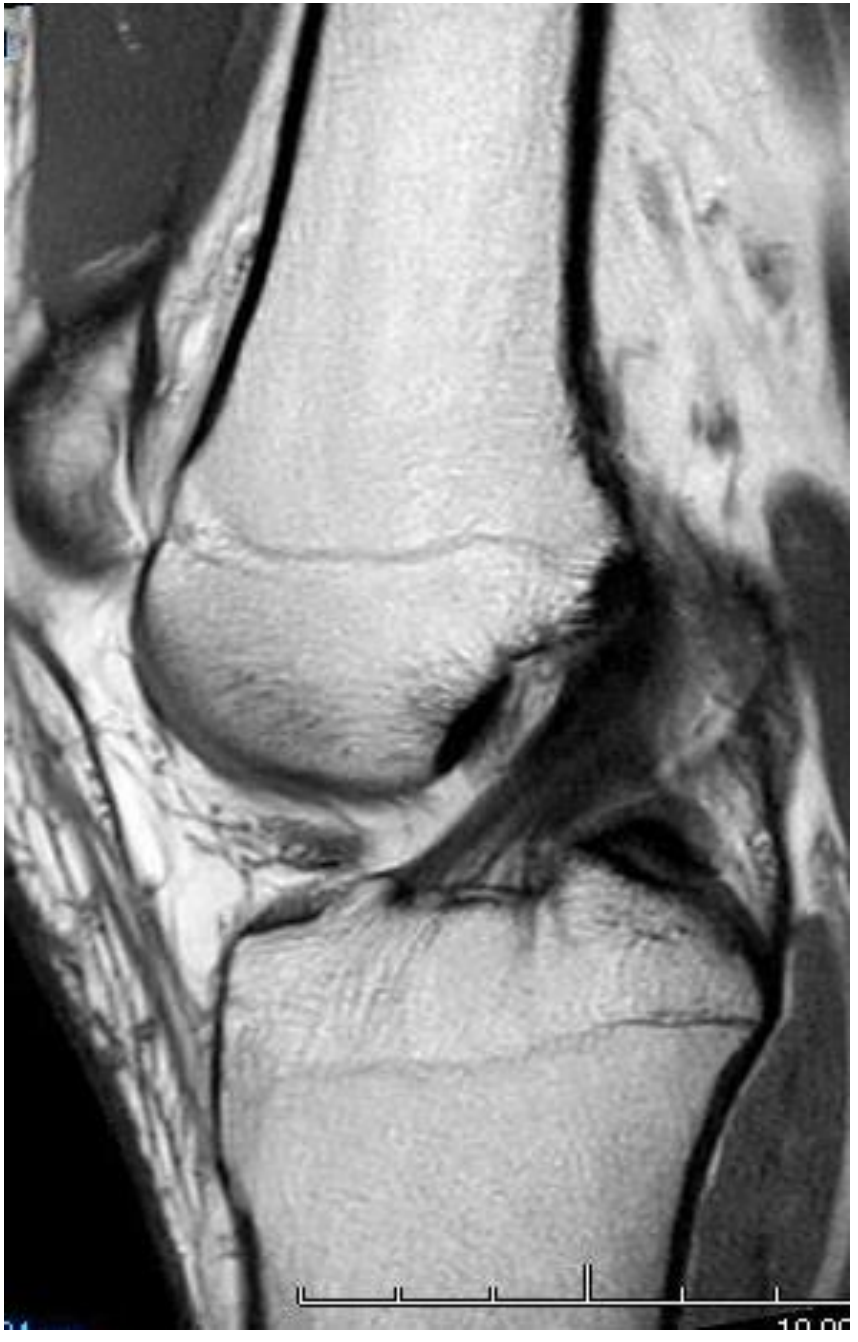

Adapted from Flexor carpi radialis tendon ultrasound pictorial essay, Dien et al

- FCR tendon lies in close contact with STT joints; the tendon sheath smtm communicates.
- FCR tendon rupture/tear
  - RA/chronic inflammatory disorder
  - Non RA: most common cause: OA
    - Bony spur penetrates tendon sheath, tendinosis, then tear.
  - Other causes: trauma
- Treatment: usually conservative dt minor functional deficit.

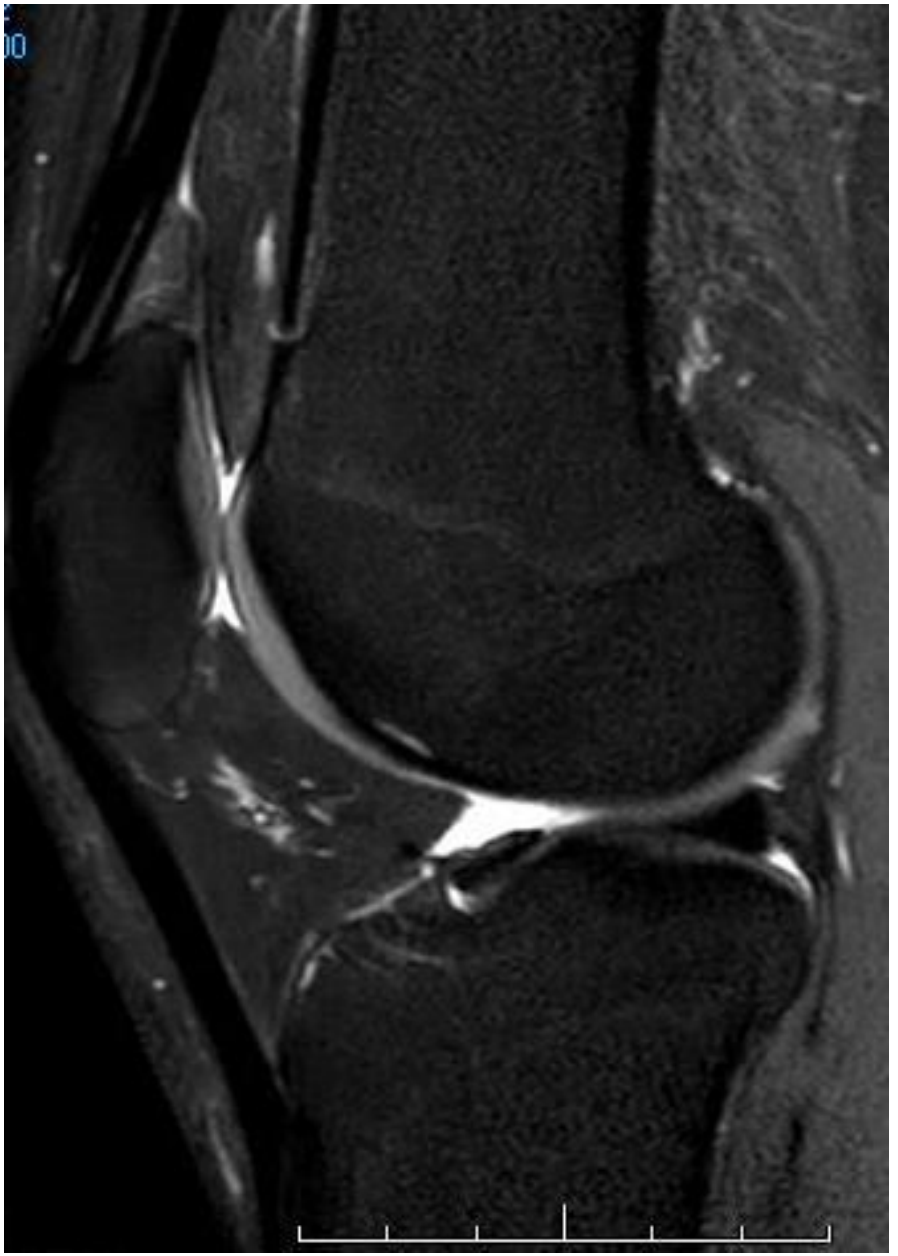
# Case 6

- History of Ultrasound diathermy for physiotherapy.

# MRI: Left Knee



# MRI: Right Knee




10.00mm/div

# Bone lesion as a complication of US diathermy

- Ultrasonic diathermy:
  - Use in physiotherapy
  - Generate heating effect deep in the soft tissue
  - At high intensities, instantaneous necrosis can occur.

- Imaging of bone lesions by US diathermy:
  - Similar with osteonecrosis
  - Location: superficial location, at the site of bone facing the body surface, not involved deeper marrow
  - F/U MRI: resolutions of lesion

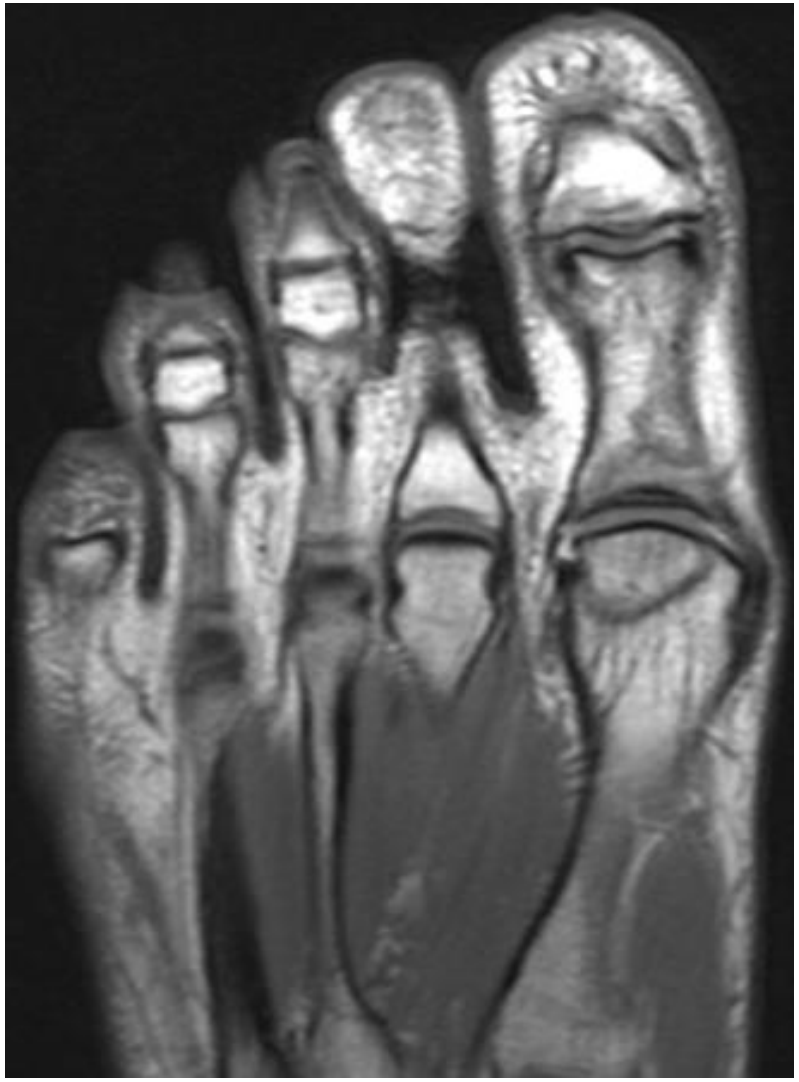
# Case 7

- CHT 24 y.o. Football/rugby player
- Has injury over the Rt greater toe on 19/2/2017 during football game.
- Unable to flex IPJ.
- Had extracorporeal shock wave therapy.
- However, no improvement, slightly worsening.

# Plain XR (25 April 2017)

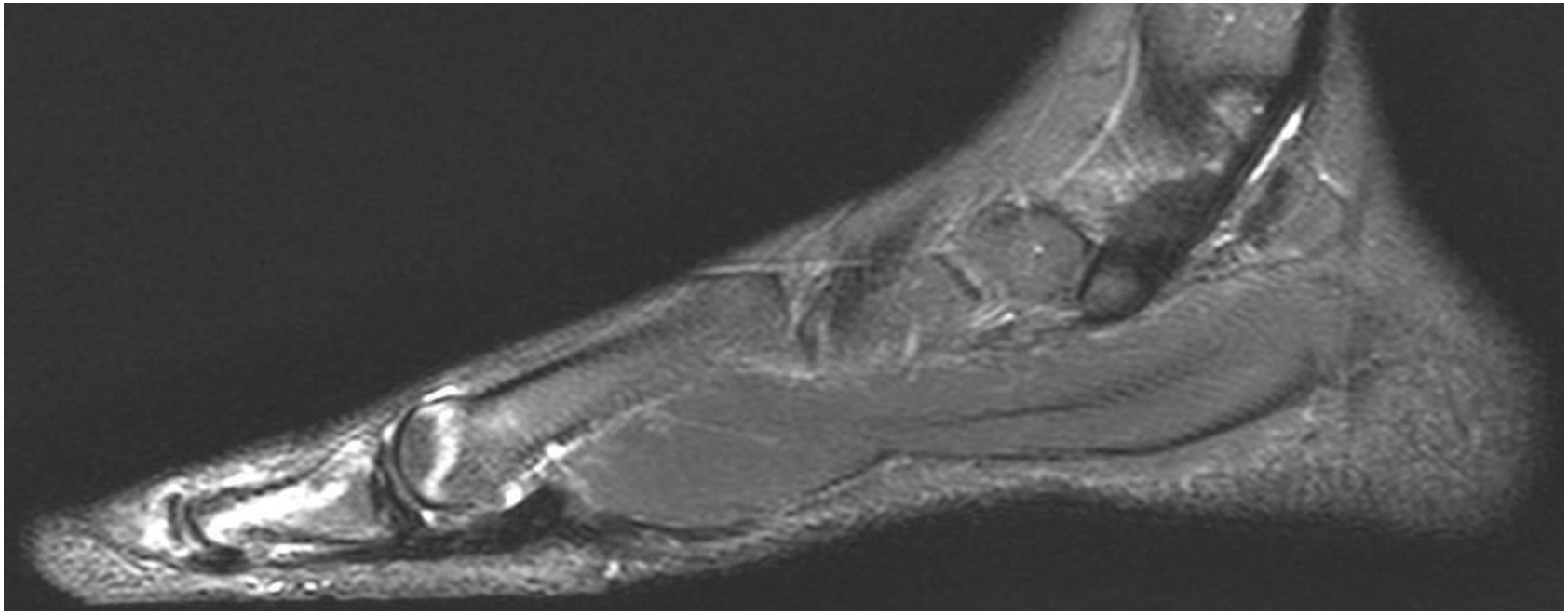

# CT

# MRI May 2017



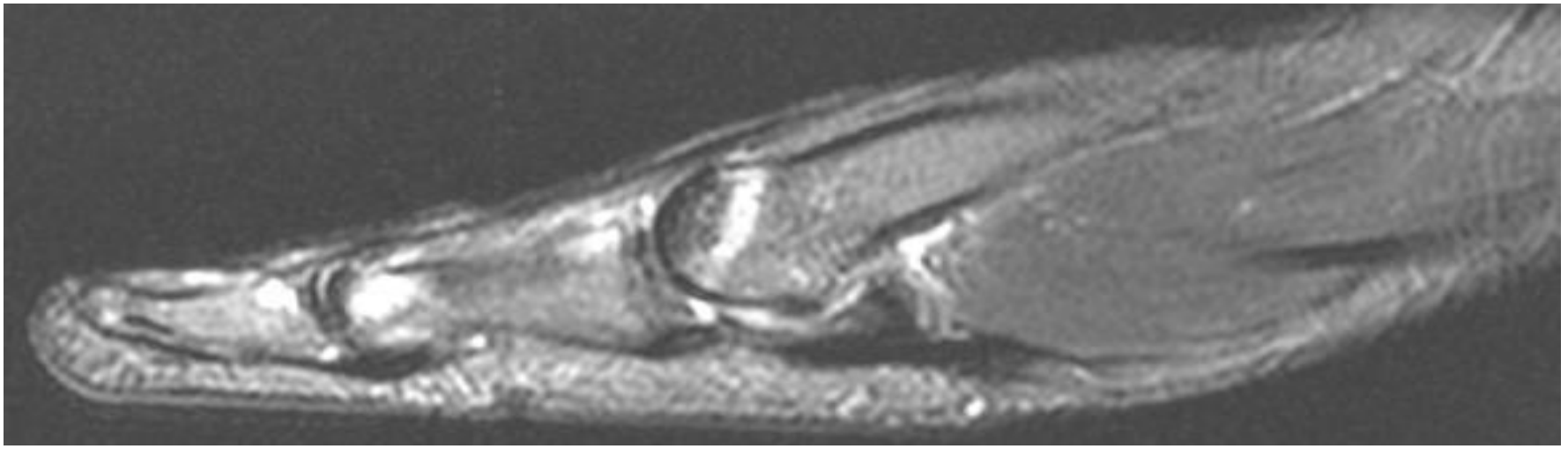
- PD

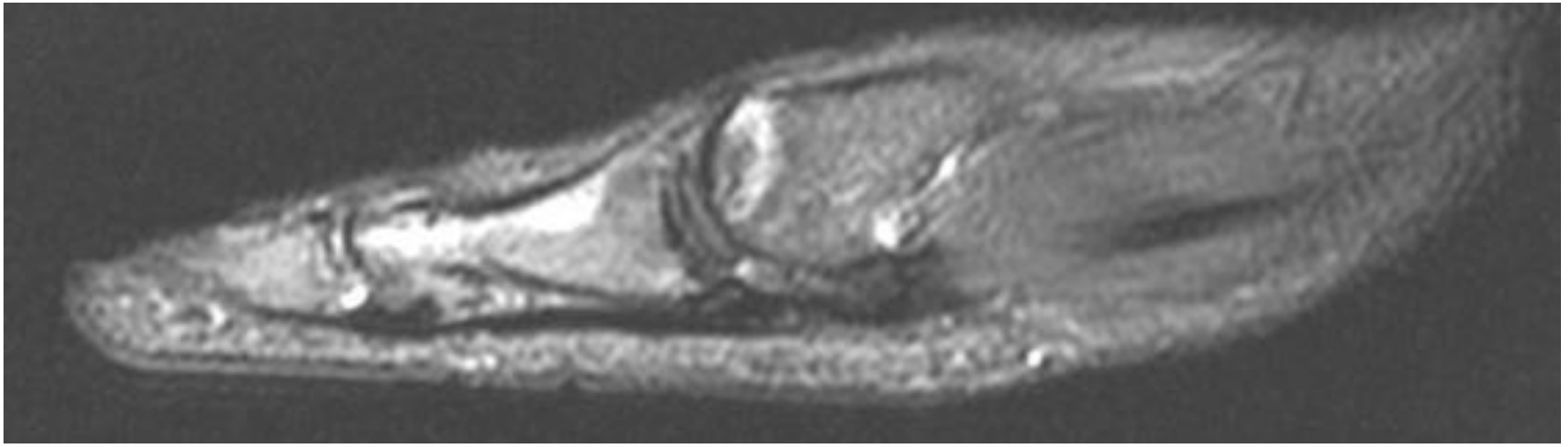
- PDFS



- Abnormal linear signal in metatarsal head.
- Serpiginous line in the base of distal phalanx and  proximal phalanx.

# MRI July 2017





# Discussion

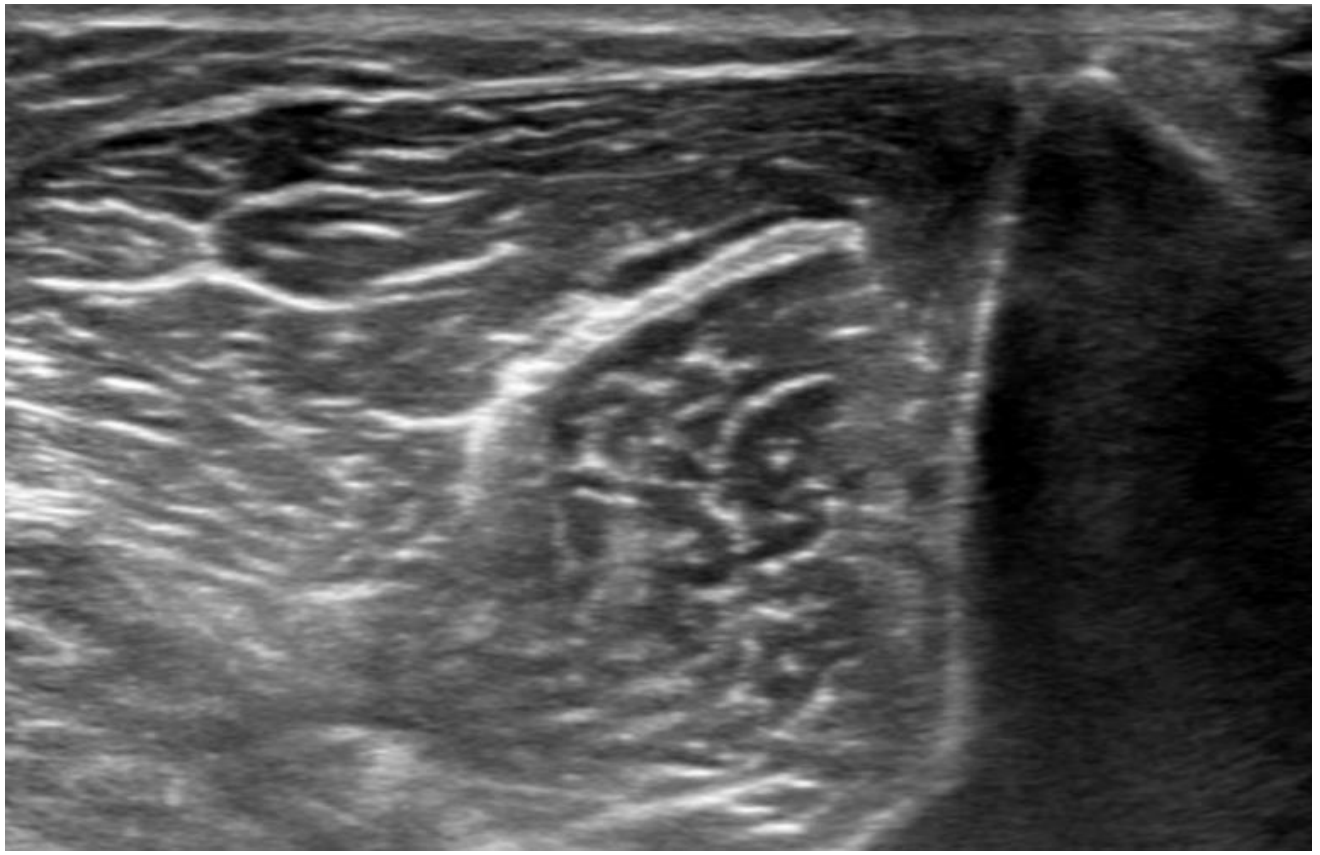
- Extracorporeal shockwave therapy (ESWT)
  - Treatment of sports related disorder
  - Plantar fascitis, lateral epicondylitis, calcified/non calcified SST tendinosis, patellar tendinopathy
  - Also in treatment of non-union long bone fracture, femoral head AVN.
  - Shockwave induced tissue repair & regeneration, neovascularization
  - Usually no severe complication ( local soft tissue swelling, cutaneous erosion, petechial or local subcutaneous hematoma).

- One reported complication from ESWT for calcified SST tendinosis, ie AVN humeral head. by Durst et al.
- Possible pathomechanism:
  - Shockwaves cause damage to blood vessels, can result in  arterial occlusion, capillary extravasation, or vessel wall ruptured.
  - Leads to AVN.

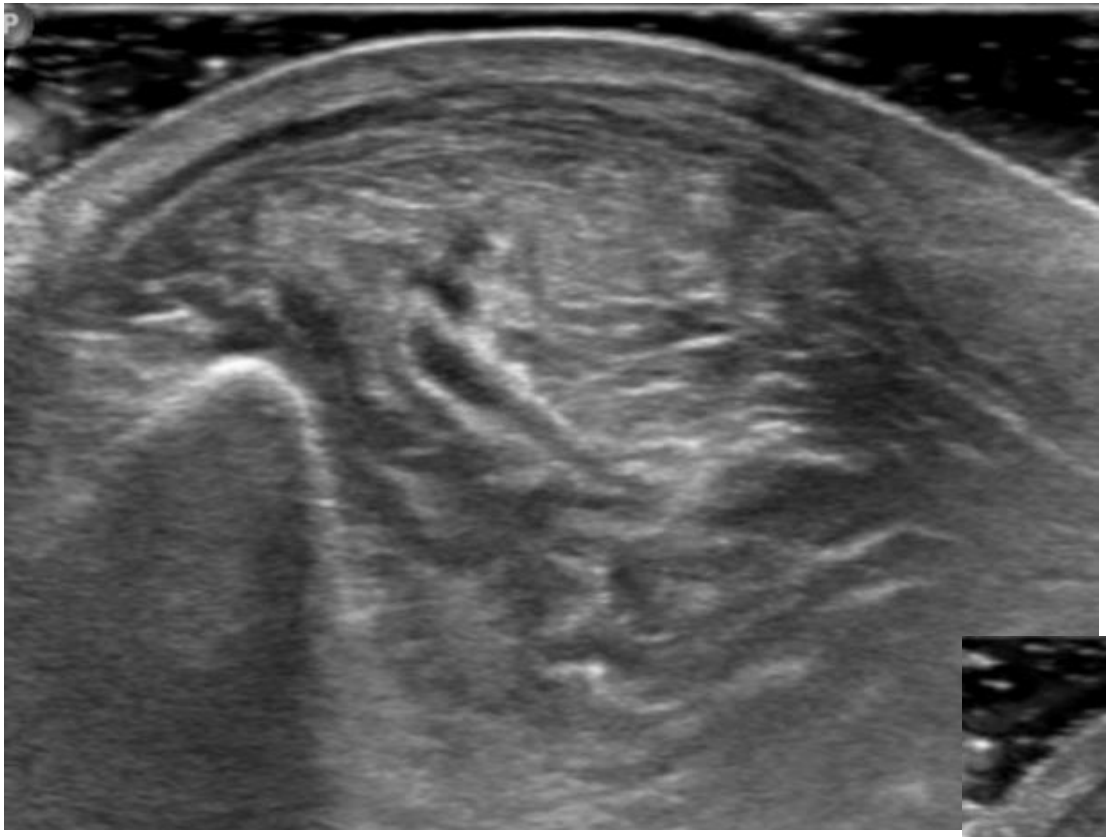
# Case 8

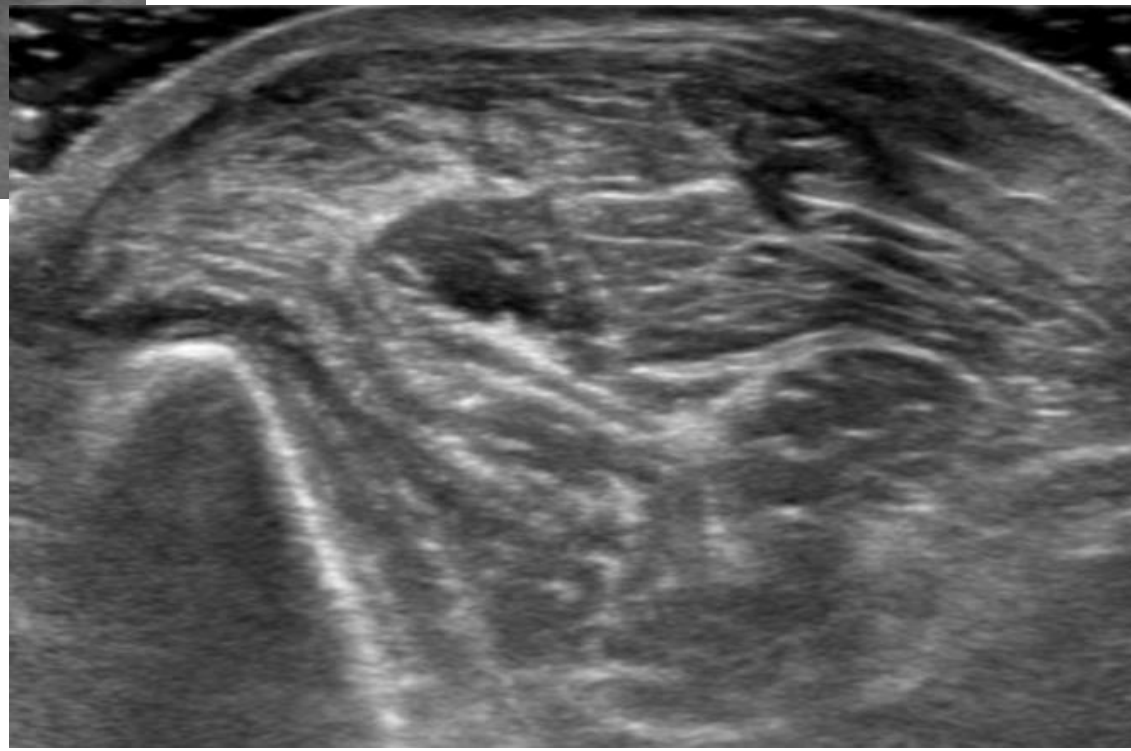
- NCY 29 y.o lady, h/o RTA in 2016.
- Sustained laceration wound with foreign body of left shin, surgery done.
- C/O left pretibial mass, which is painful after prolonged standing.

# Normal



# Ultrasound





- Tibialis anterior  muscle herniation from fascial defect secondary to trauma.

# Discussion

- Muscle hernia: protrusion of muscle belly through an acquired/congenital fascial defect.
  - Potentiate by increases in intracompartment pressure ( muscle hypertrophy).
- Most commonly in leg, and mostly affected tibialis anterior muscle (its fascia is most vulnerable to trauma).
- Clinical:
  - Anterior tibial mass, vary in size; enlarged during leg dorsiflexion, and smaller at rest.

- Dynamic ultrasound:
  - Muscle bulge through fascia defect  on muscle contraction, retraction on relaxation.

THANK YOU!!