

An unusual case of thumb swelling

Dr Akshay Waghmode

MD. Radiodiagnosis

MSK fellow

Under the guidance of Dr. Amit Kharat

Dr. D. Y. Patil Hospital and Research centre , Pimpri, Pune.

Clinical History

38 yr old male patient came with

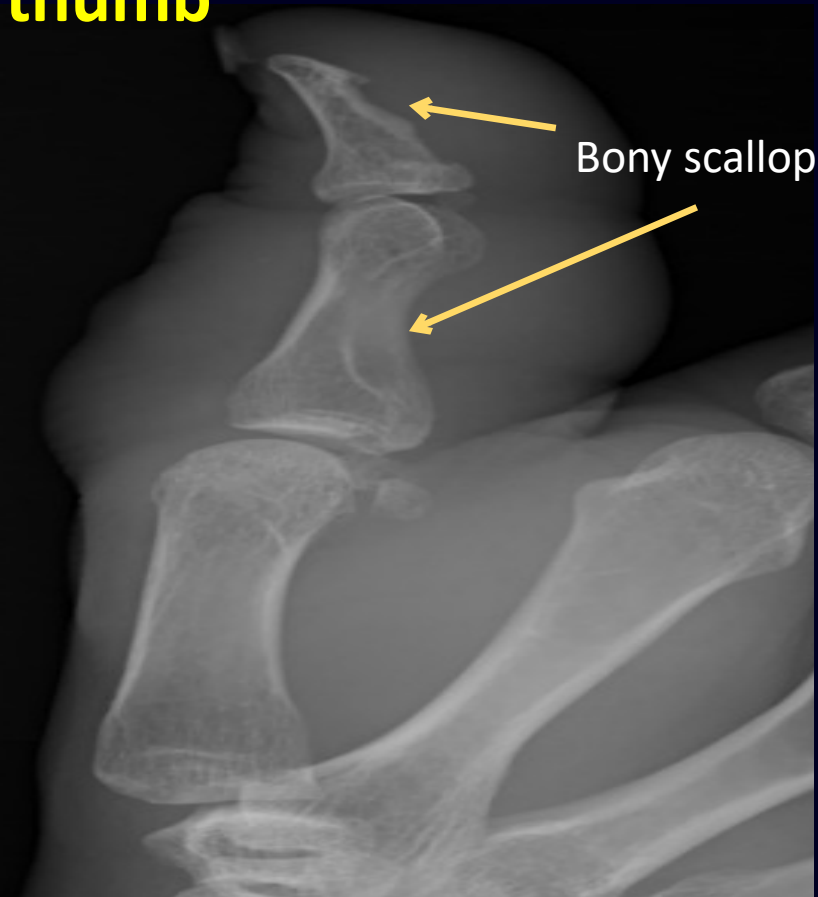
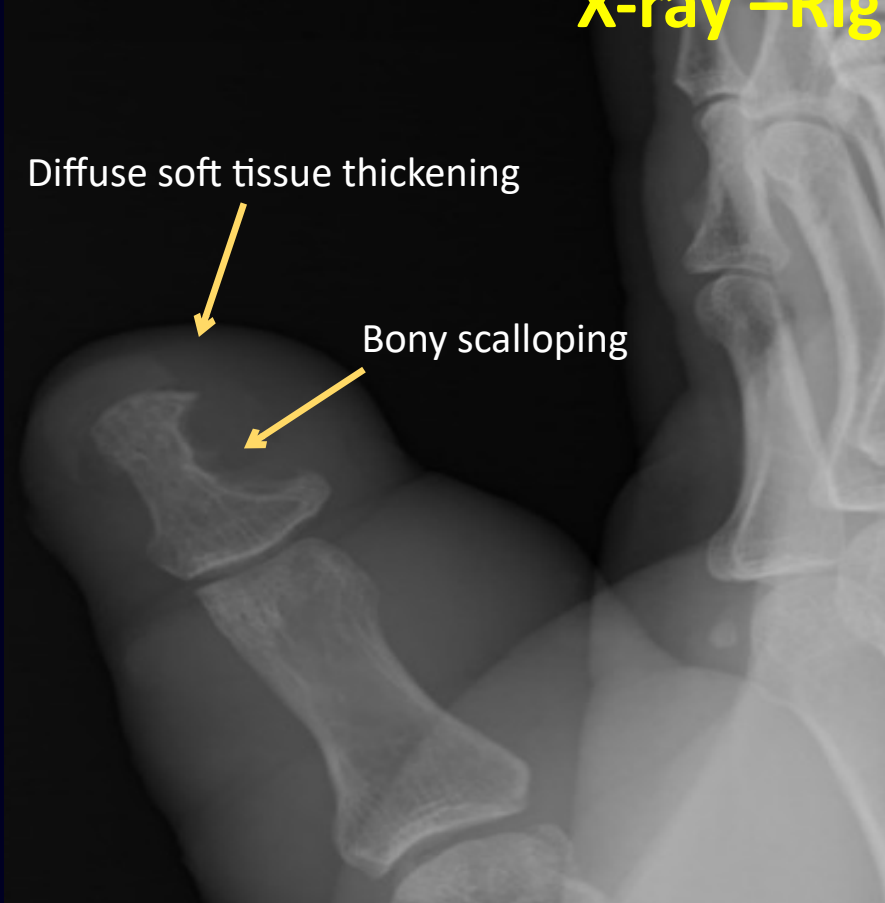
- C/o swelling over right thumb - 2 years
- Progressively increasing in size.
- The patient could not recall any specific incident of trauma prior to the onset of the swelling
- No/H/O discharge/ similar swelling in other sites.
- No/H/O pain and aggravating or relieving factors
- No/H/O DM/HTN/TB/surgery

X-ray – Right thumb

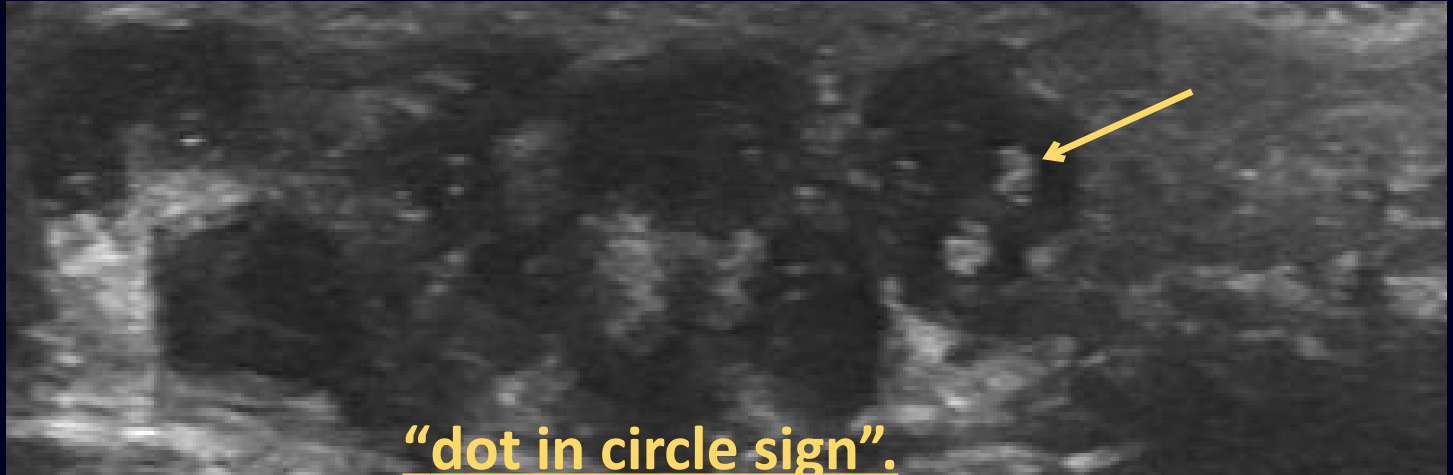
Diffuse soft tissue thickening

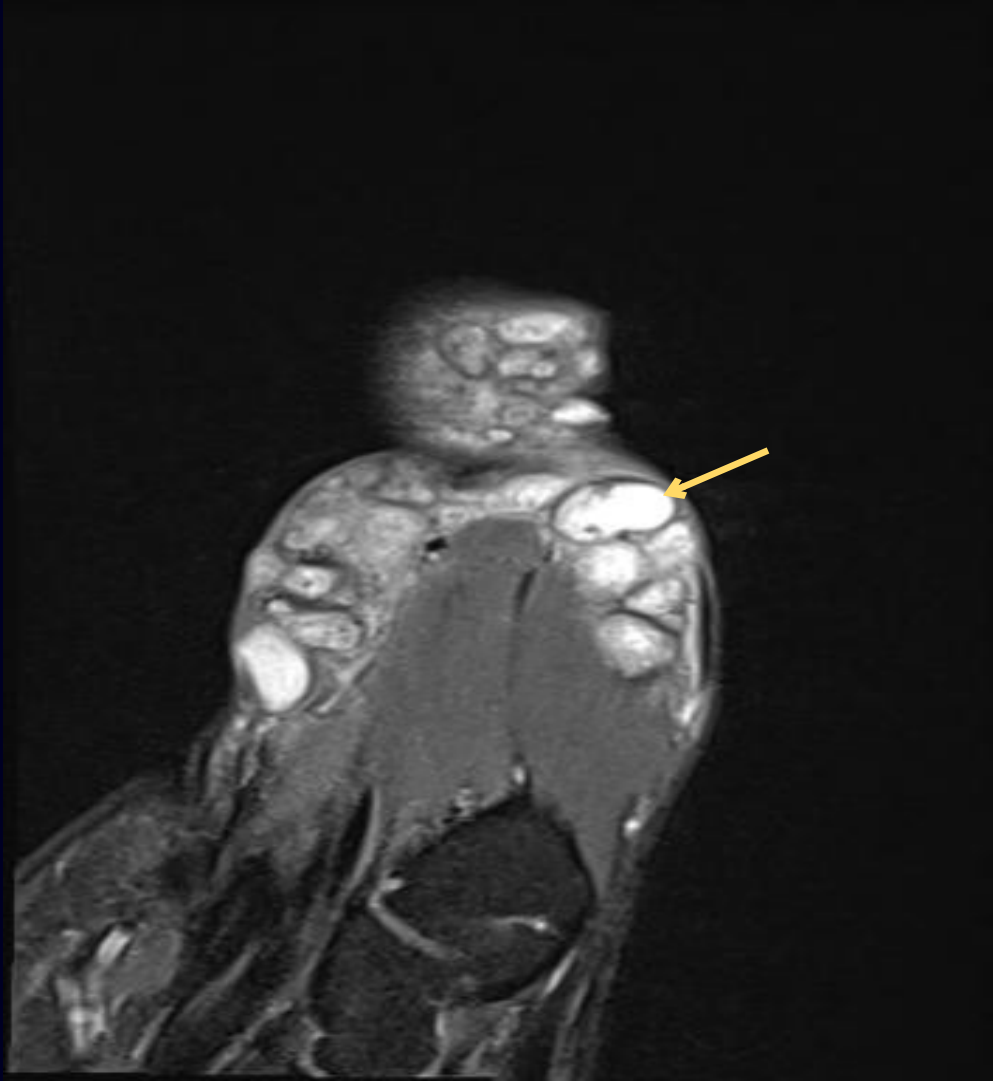
Bony scalloping

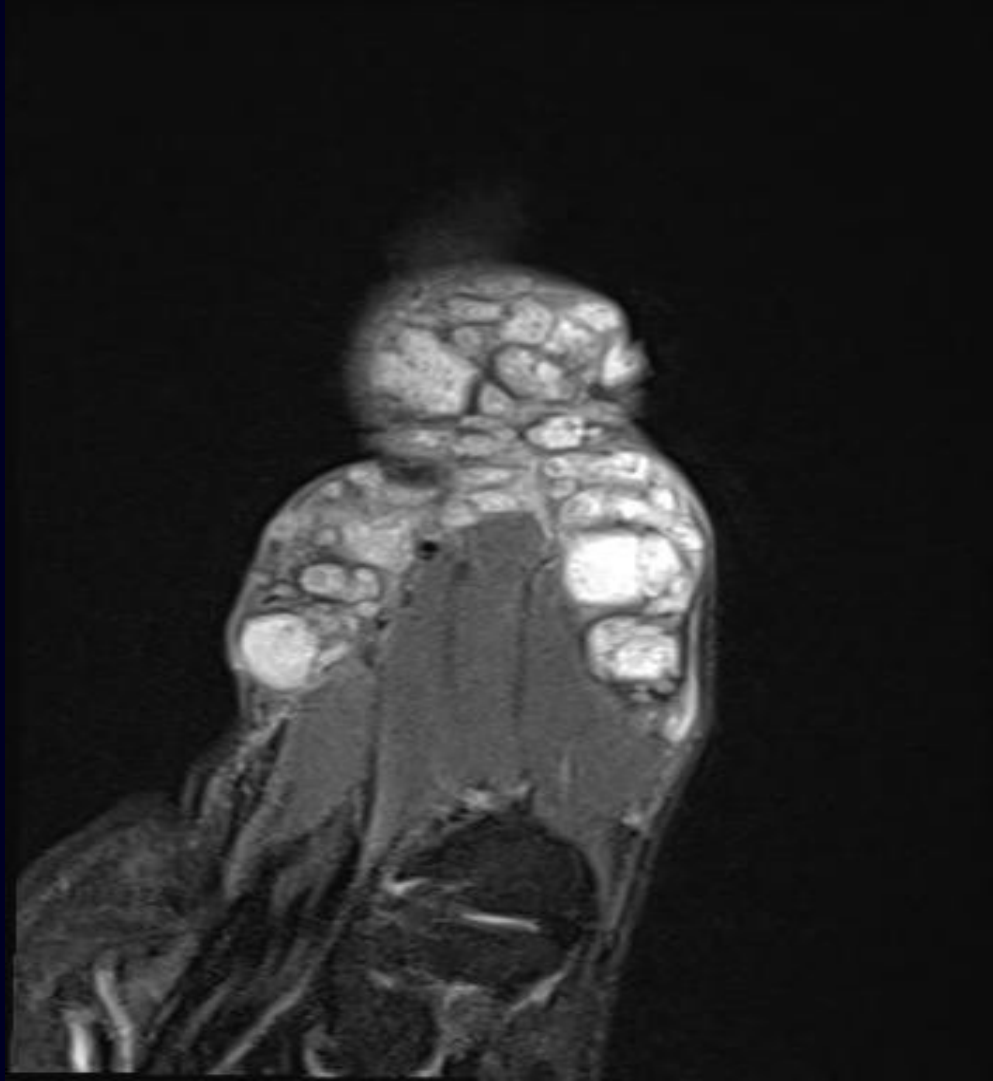
Bony scalloping

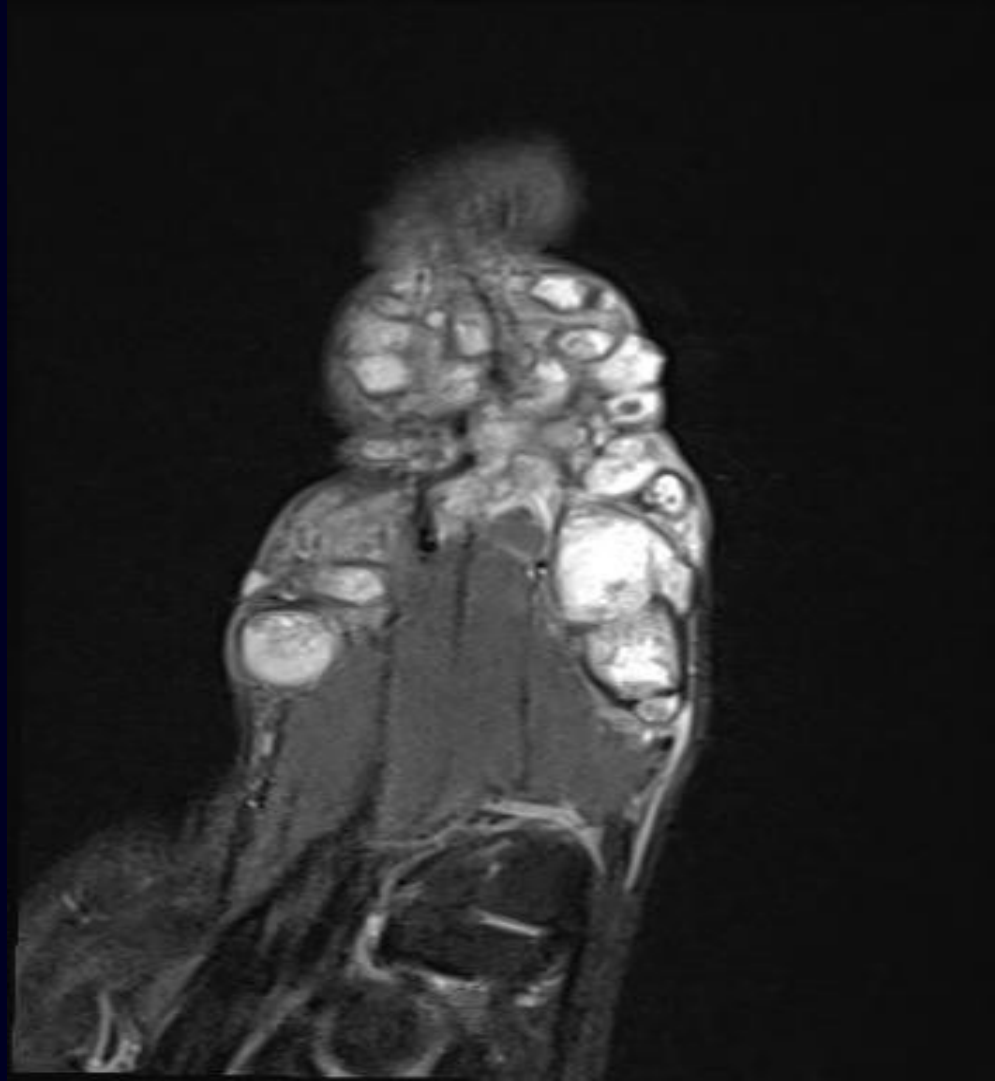


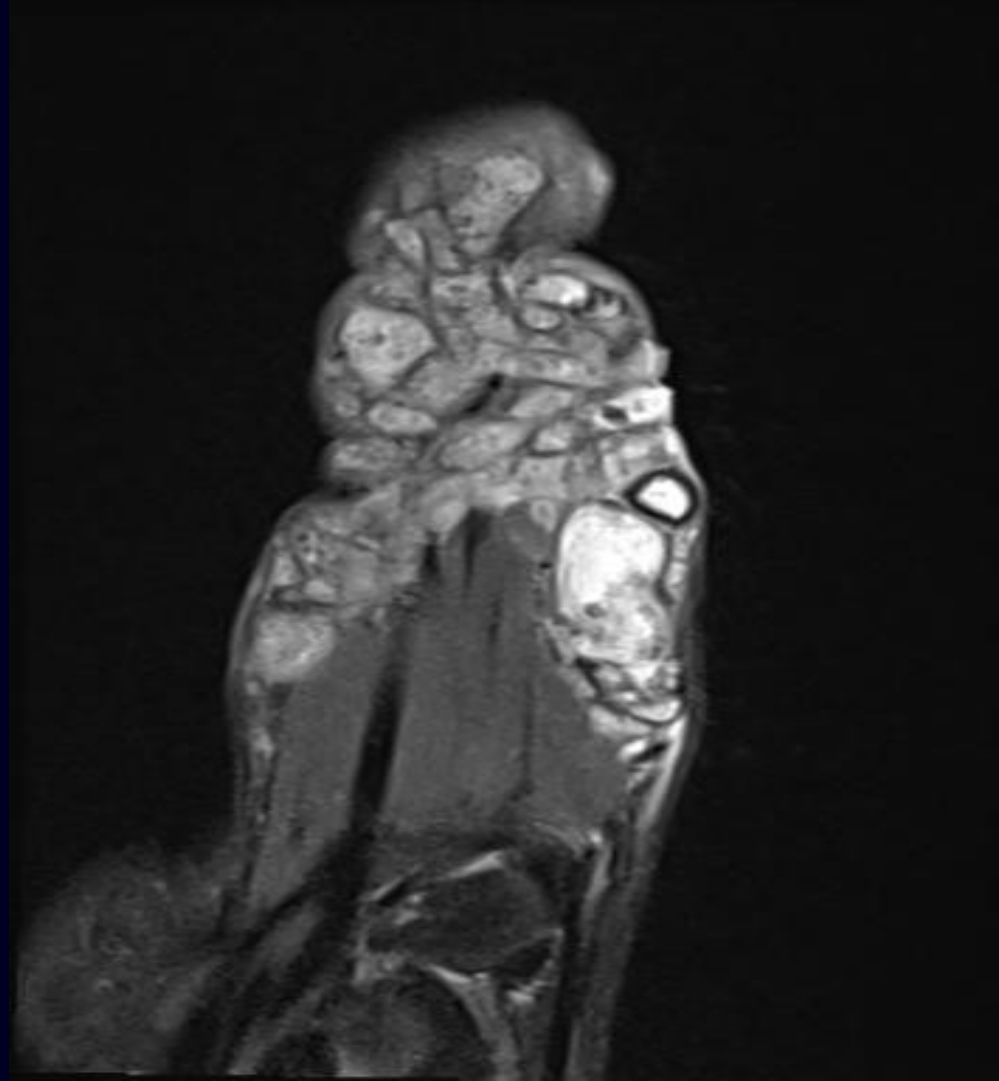
Local USG of Right thumb

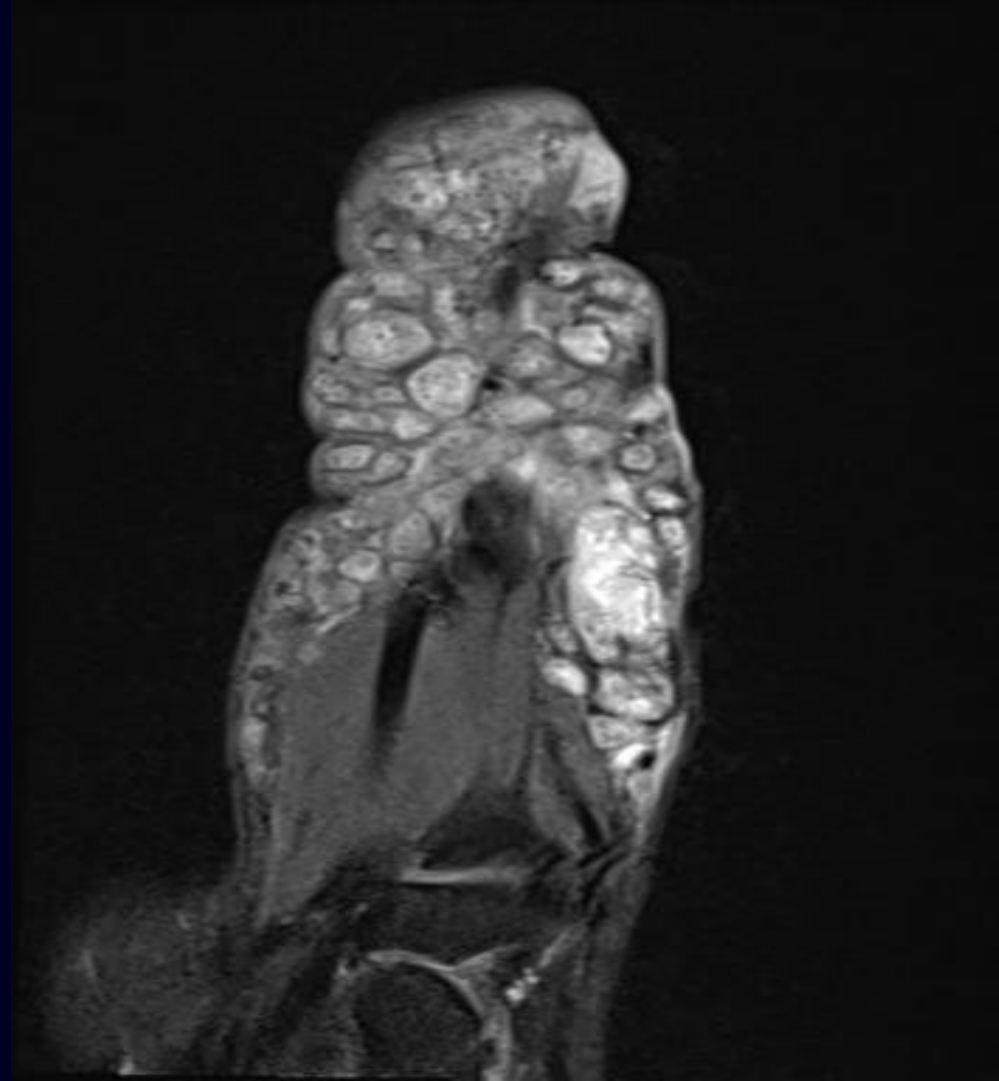


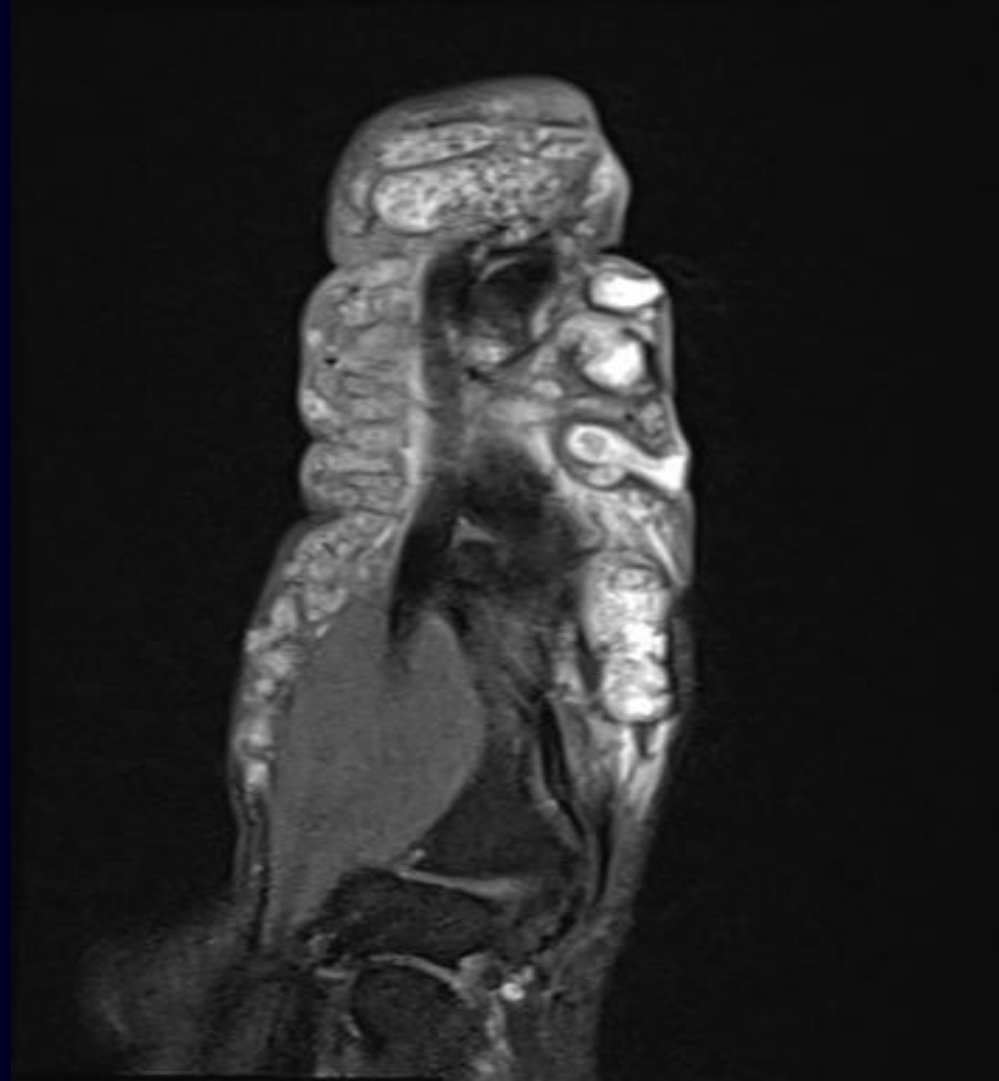


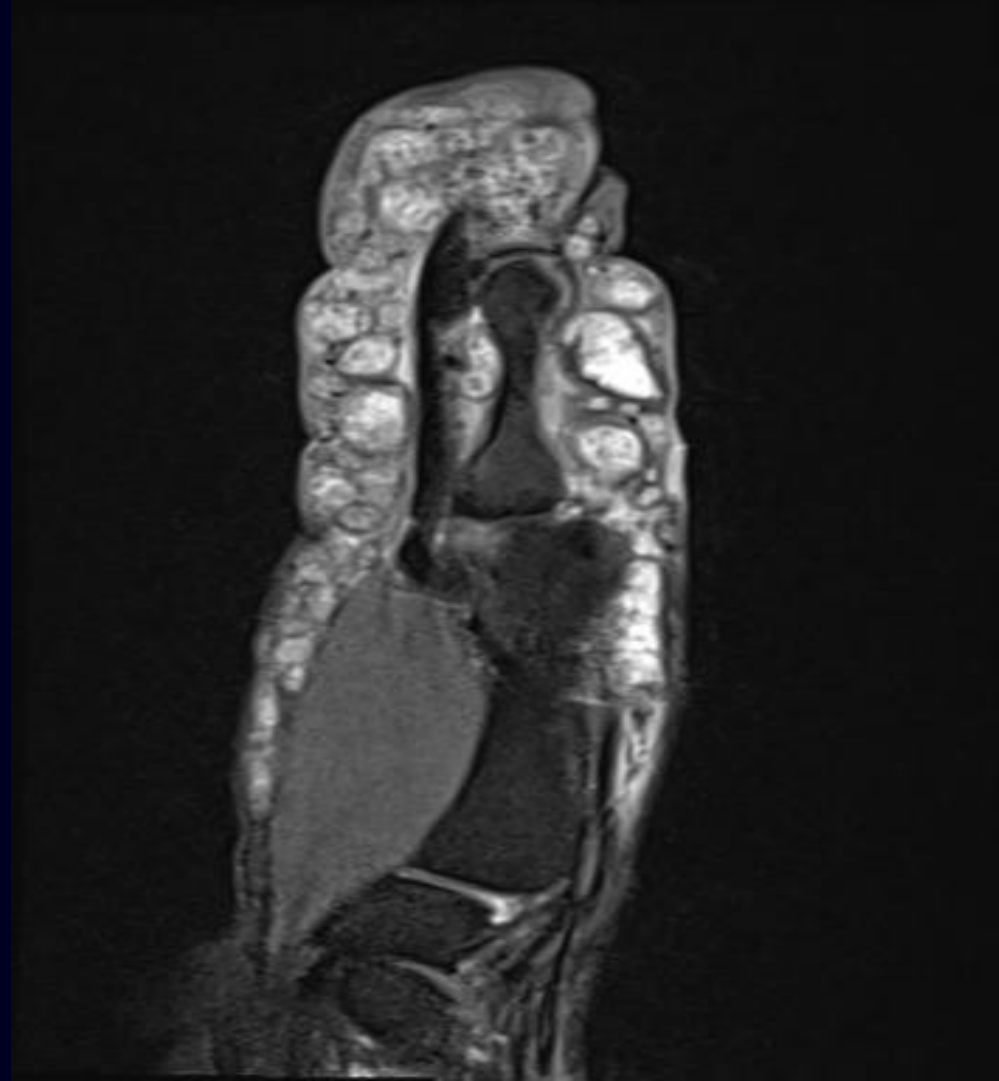








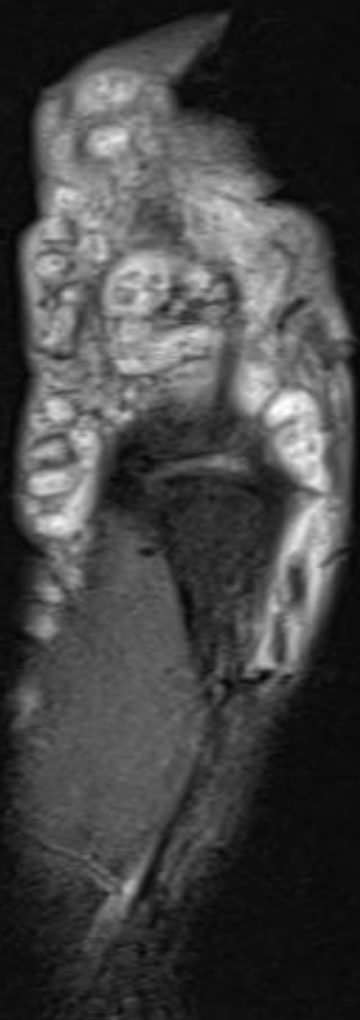


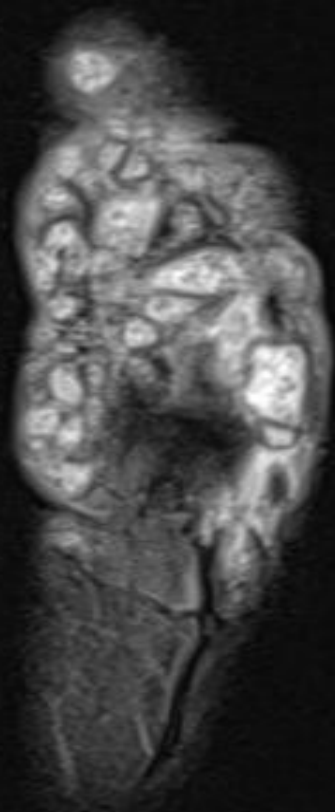


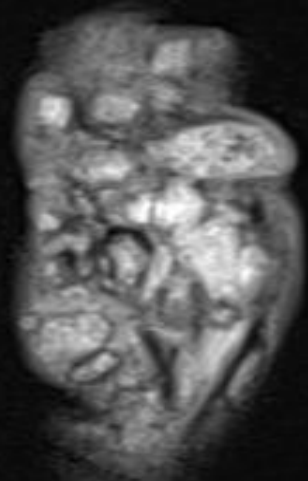






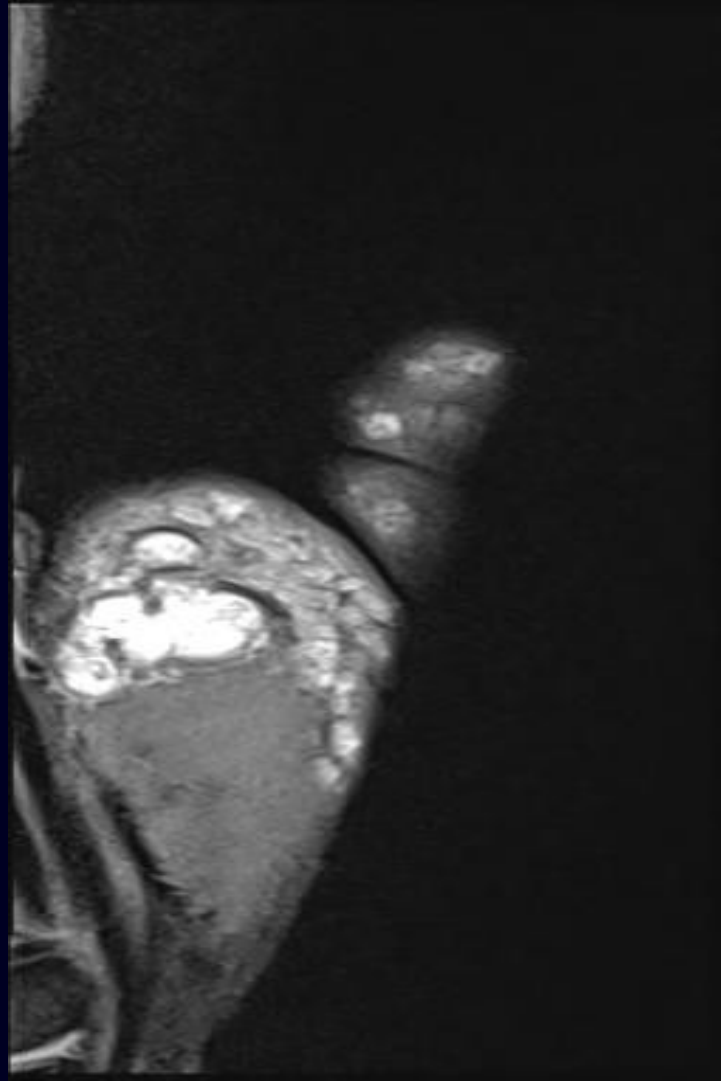


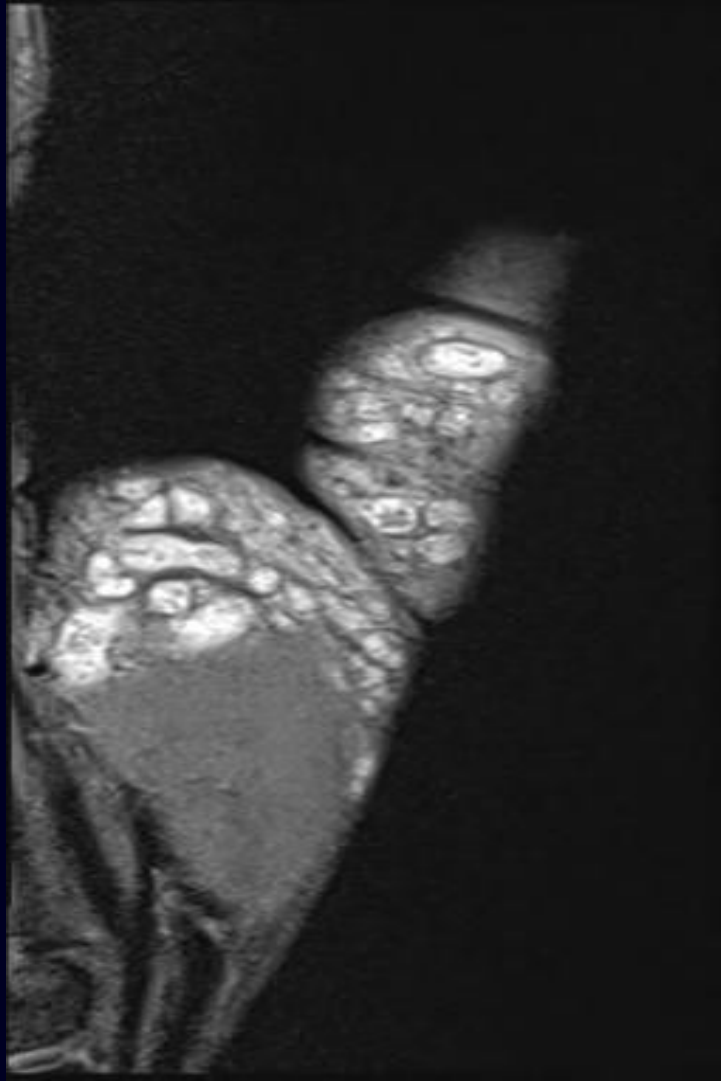


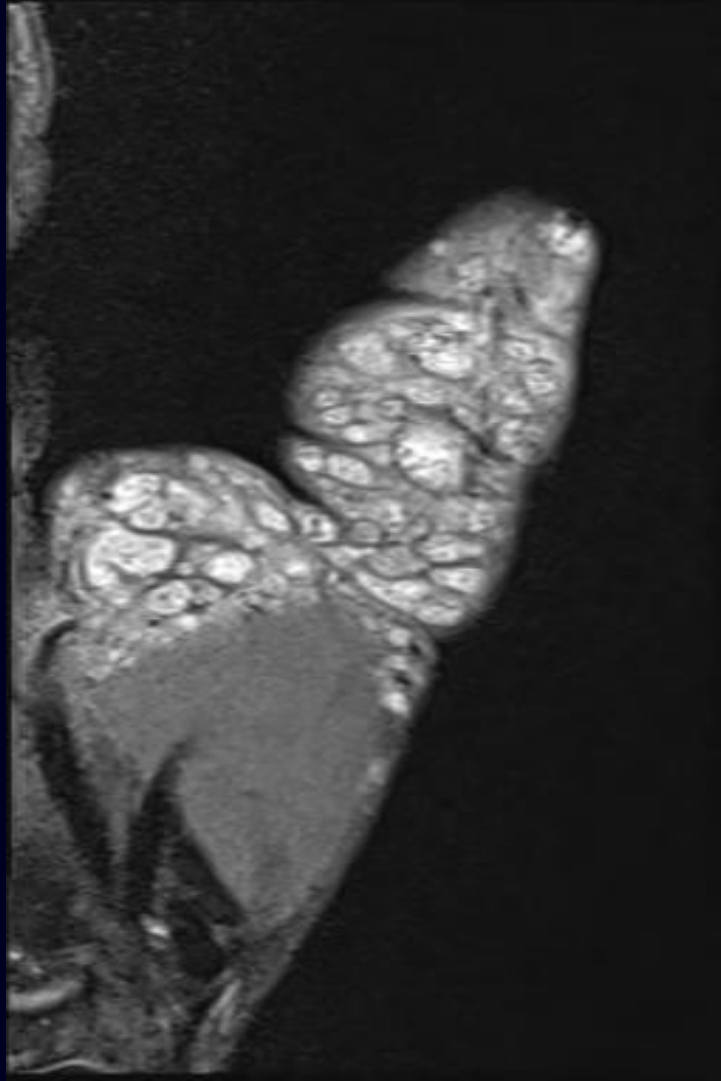


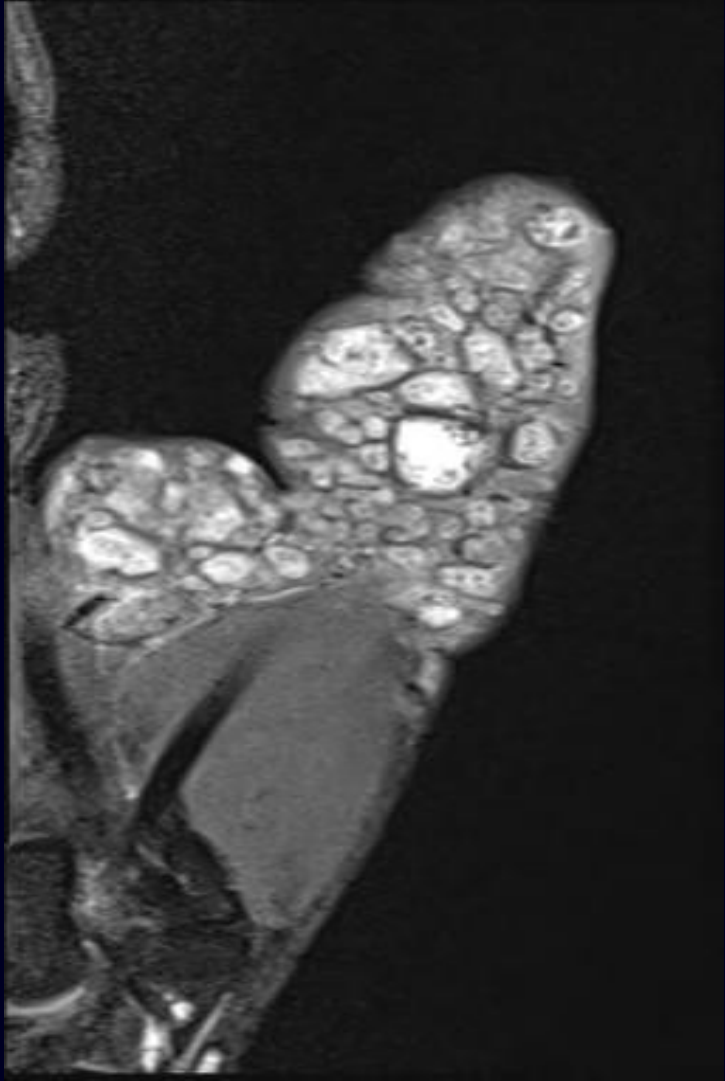


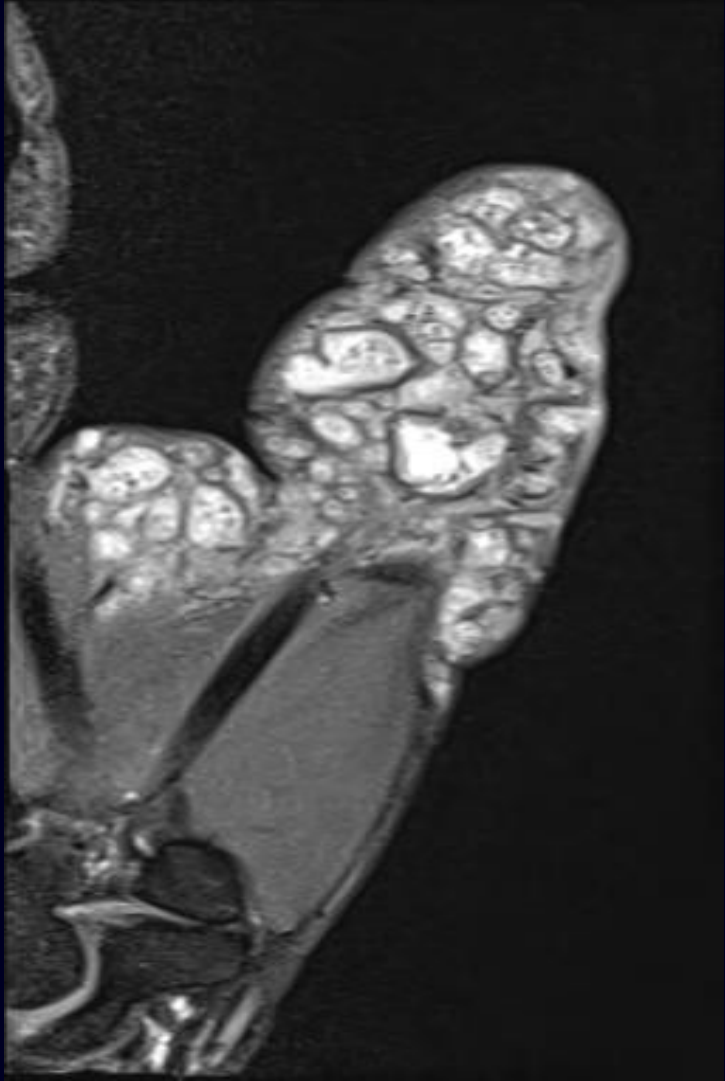


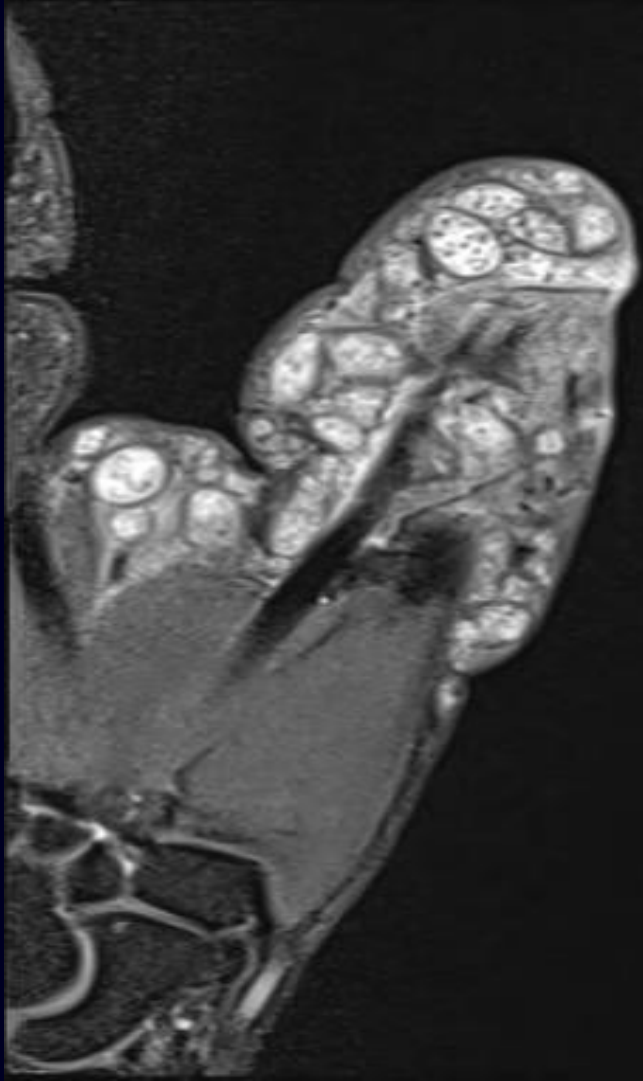




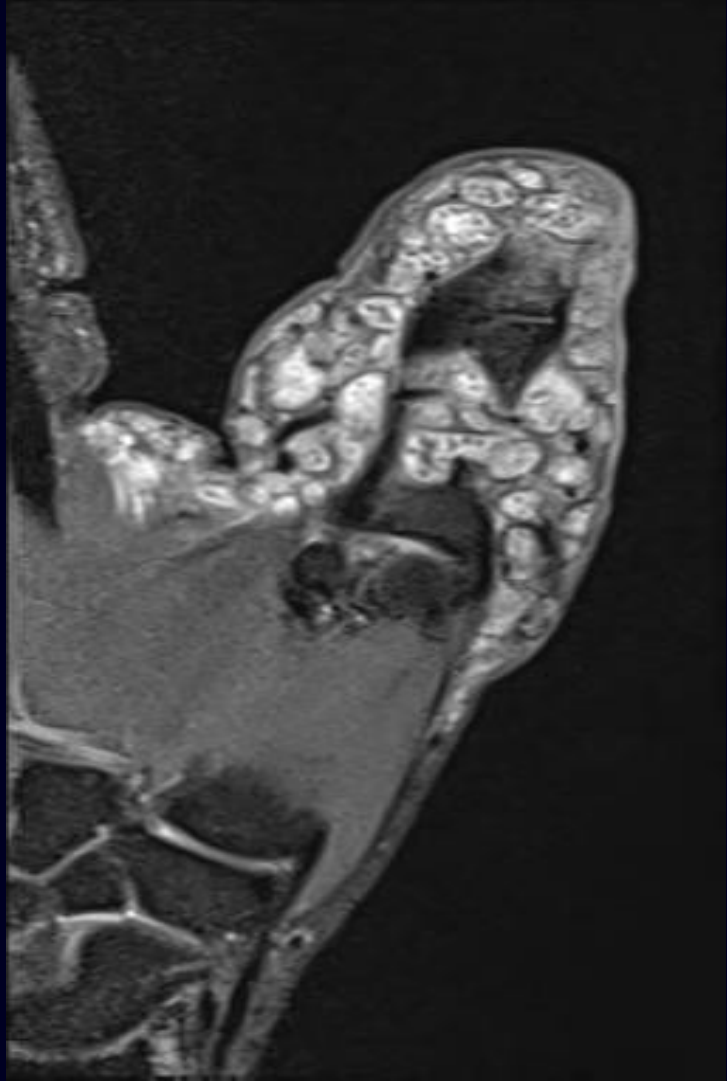


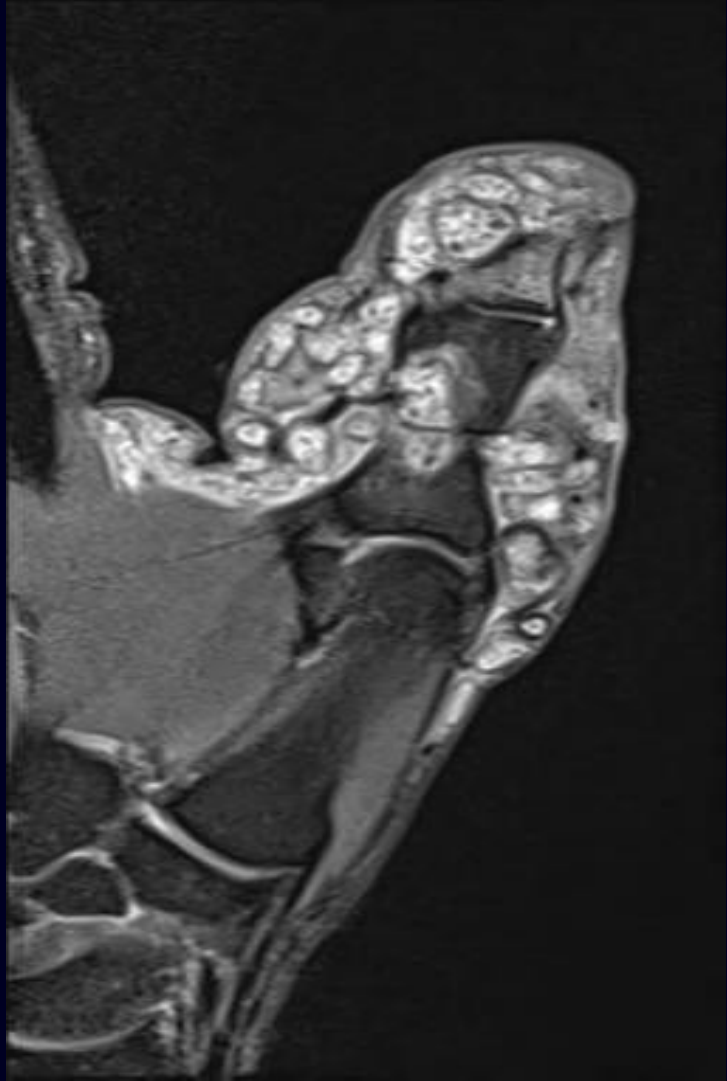






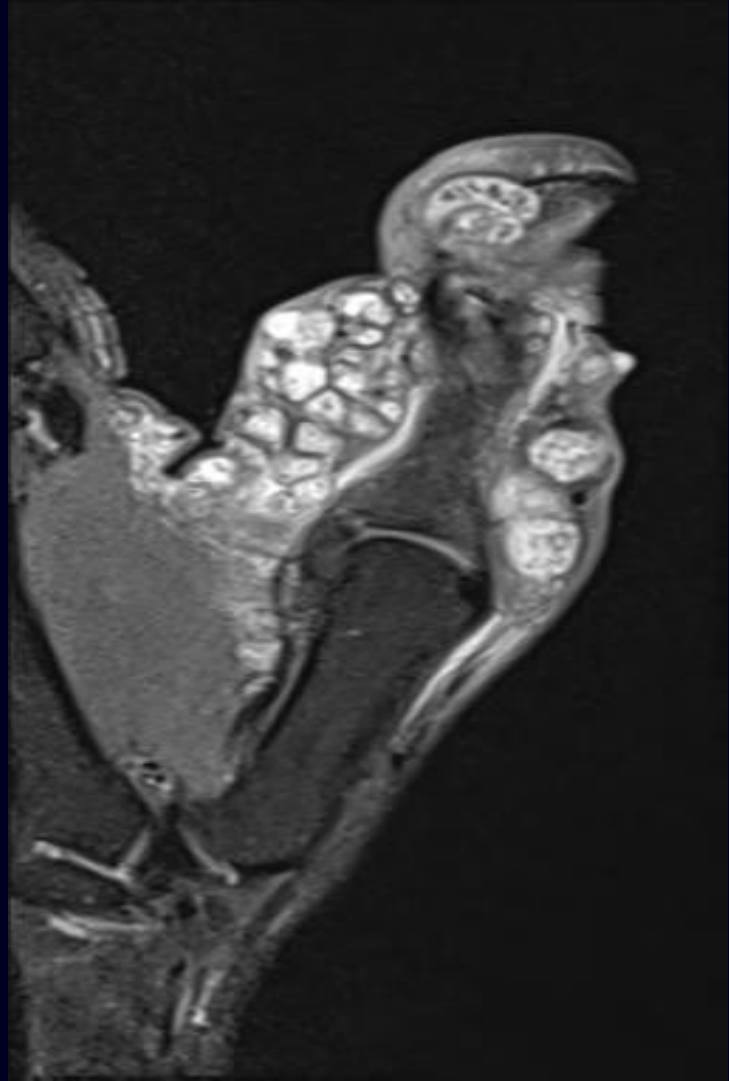


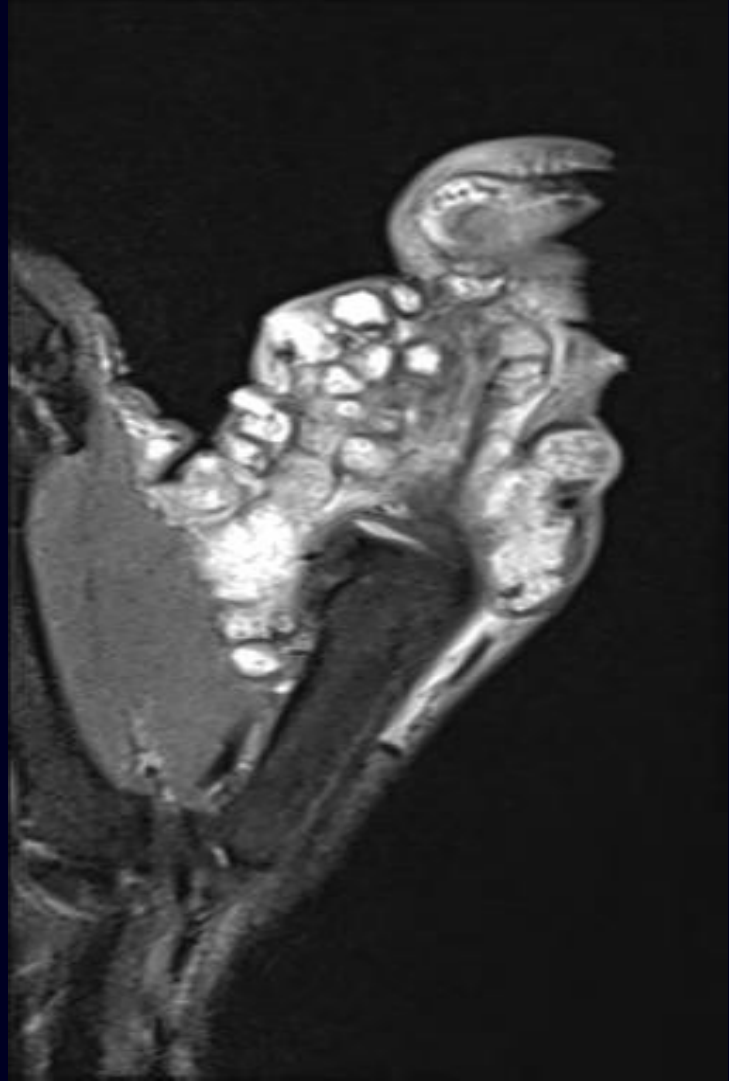


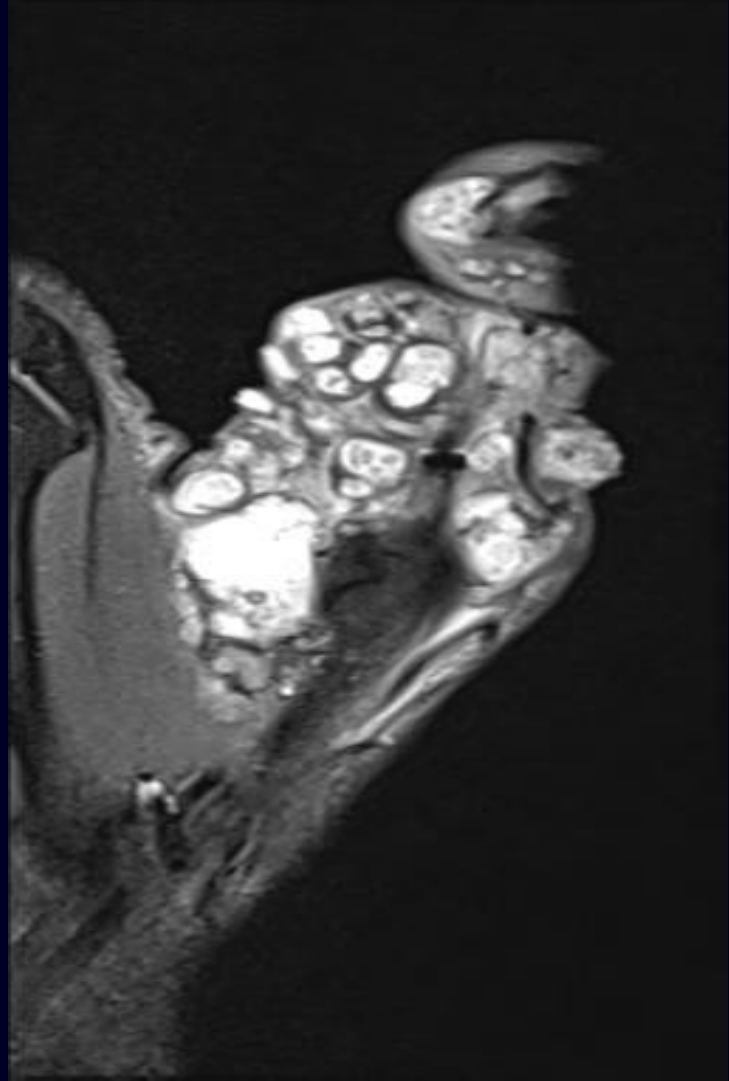


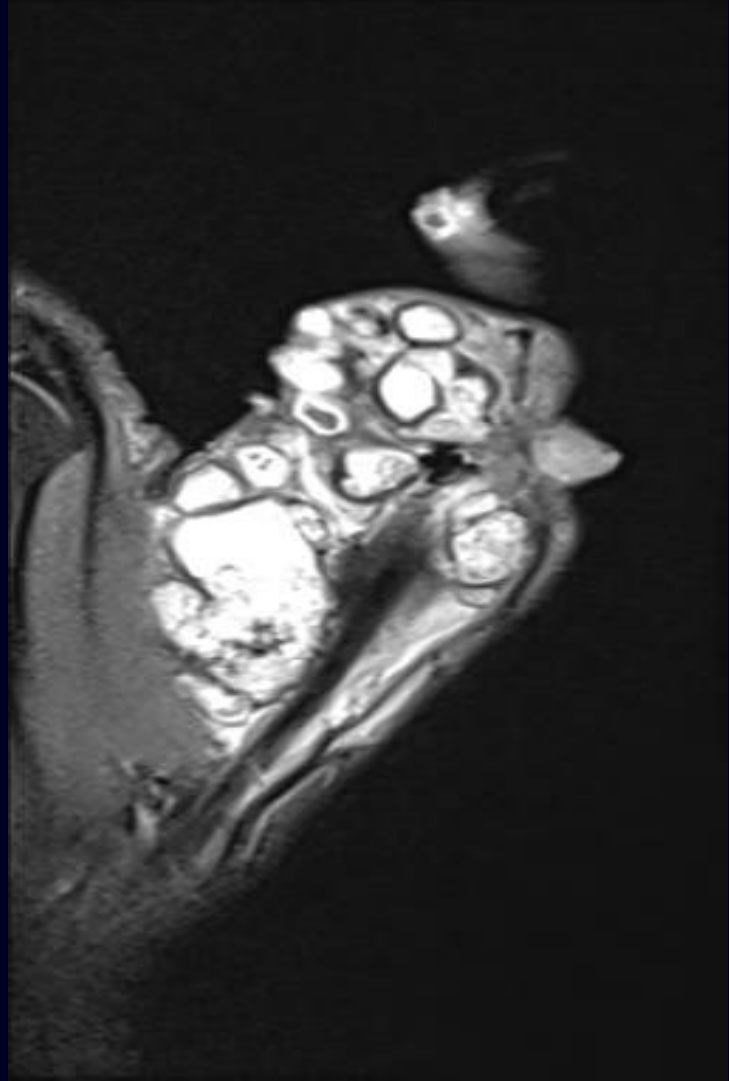


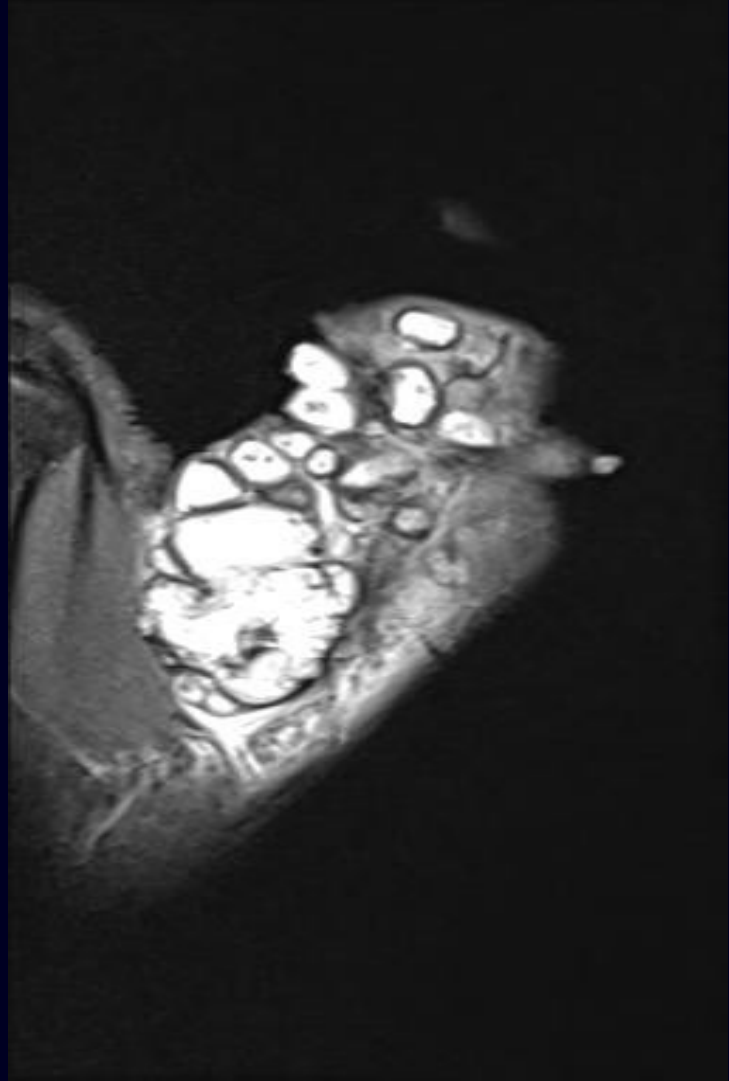


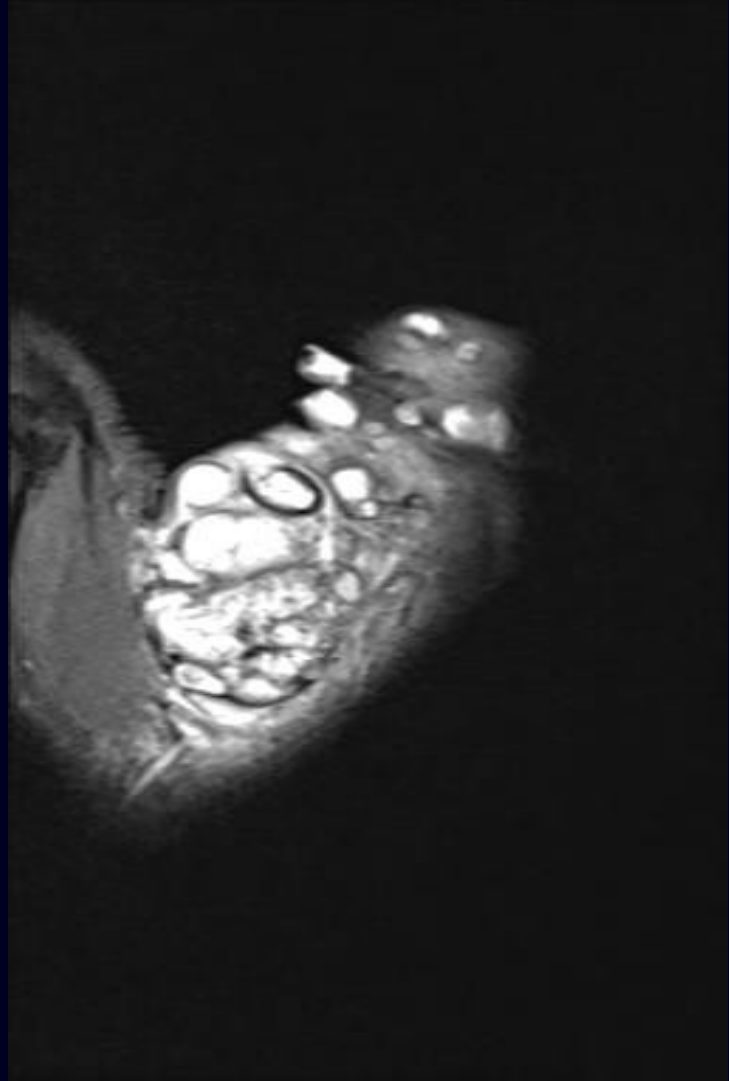


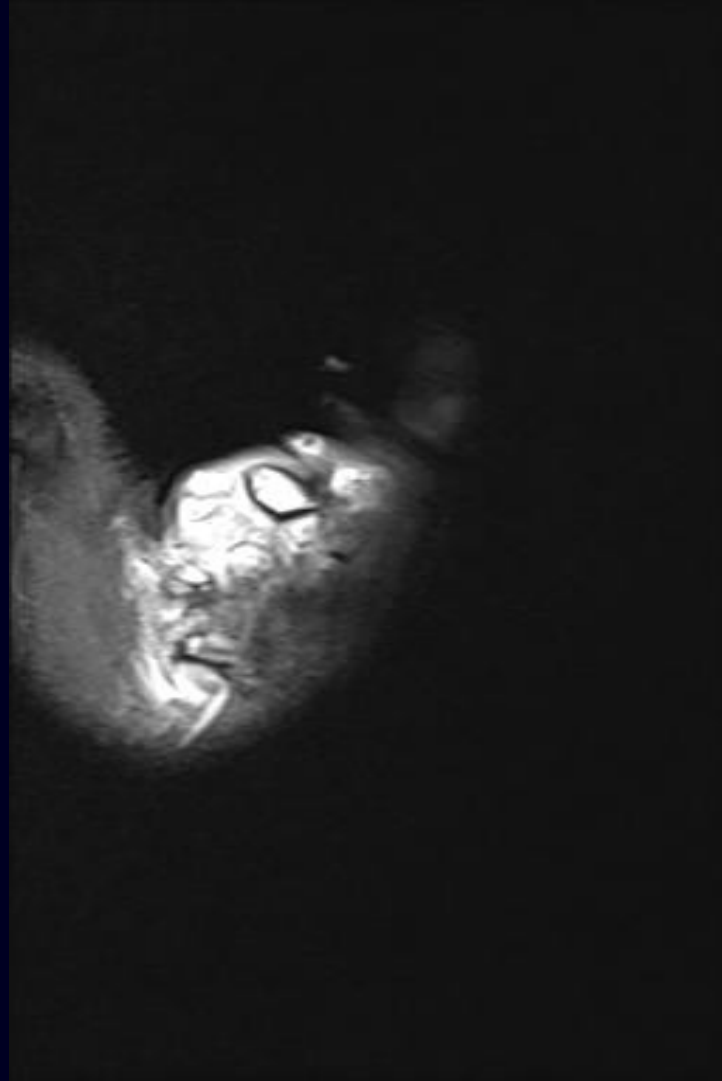




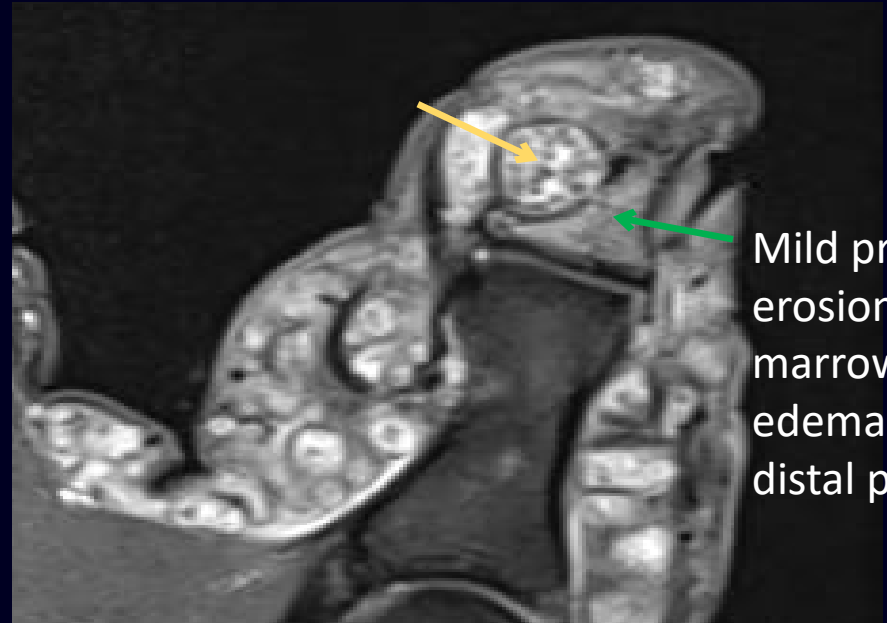








Coronal and sagittal PDFS MRI Images



Mild pressure erosion and marrow edema on distal phalanx

"dot in circle sign" is a characteristic MRI feature for this condition .
Rounded hyperintensity (representing granulation tissue), surrounded by a low signal intensity rim (representing fibrous septa) with a hypointense dots (representing fungi) in the center .

**Provisional diagnosis of Chronic
granulomatous infection like
actinomycosis given.**

Histopathology revealed
actinomycosis.

Discussion

- Primary actinomycosis of thumb is very rare site as most commonly involved site is a foot (Madura foot).
- It is chronic granulomatous disease caused by the bacteria Actinomycetes (Actinomycetoma) (60%) or Fungi (Eumycetoma) (40%)

Causes

- Actinomycetoma- may be due to
- Actinomadura madurae
- Actinomadura pelletieri
- Streptomyces somaliensis
- Nocardia species

Eumycetoma is often due to
Madurella mycetomi

Discussion

Patient comes with triad of clinical findings such as

1. Painless localised swelling
 2. Sinus tracts
 3. Production of grains or granules (compromised of aggregations of the causative organism) within the sinus tracts.
- The organism is inoculated traumatically through soil with a sharp object like thorn.

Imaging

- Plain x- rays – to asses evidence of bone involvement
- CT- Scan –to detect early bone changes , cortical thinning due external compression , lytic lesions / and changes of osteomyelitis.
- USG- multiple lesions which corresponds to grains which gives the – “dot in circle sign”.
- MRI scan – better assessment of the degree of bone and soft tissue involvement and to rule out other differential diagnosis of the swelling.

Treatment

Due to slow and relatively painless progression of the disease, it is often diagnosed at an advanced stage.

- Antifungal
- Antibiotics
- Treatment of any secondary infections
- Amputation in severe cases.

Conclusion

The primary Actinomyces of finger is rare site and clinically a great diagnostic challenge and requires high degree of suspicion for early diagnosis which avoids unnecessary surgery and decreases the morbidity and mortality.

This case highlights the importance of clinical and radiological awareness to consider the rare site for guiding appropriate therapy.

References

- 1. Kumar J, Kumar A, Sethy P et-al. The dot-in-circle sign of mycetoma on MRI. *Diagn Interv Radiol*. 2007;13 (4): 193-5. [Diagn Interv Radiol \(link\)](#) - [Pubmed citation](#)
- 2. Gold RH, Mirra JM. Case report 442. Madura foot (mycetoma pedis). *Skeletal Radiol*. 1987;16 (7): 577-80. - [Pubmed citation](#)
- 3. Cherian RS, Betty M, Manipadam MT et-al. The "dot-in-circle" sign -- a characteristic MRI finding in mycetoma foot: a report of three cases. *Br J Radiol*. 2009;82 (980): 662-5. [doi:10.1259/bjr/62386689](#) - [Pubmed citation](#)
- 4. Parker L, Singh D, Biz C. The dot-in-circle sign in Madura foot. *J Foot Ankle Surg*. 48 (6): 690.e1-5. [doi:10.1053/j.jfas.2009.07.007](#) - [Pubmed citation](#)
- 5. Sakayama K, Kidani T, Sugawara Y et-al. Mycetoma of foot: a rare case report and review of the literature. *Foot Ankle Int*. 2004;25 (10): 763-7. [Foot Ankle Int \(link\)](#) - [Pubmed citation](#)

Thank You.

