

Rheumatoid foot

3^ο ΘΕΡΙΝΟ ΣΧΟΛΕΙΟ
ΑΚΤΙΝΟΛΟΓΙΑΣ
ΜΥΟΣΚΕΛΕΤΙΚΟΥ
“Η ΡΕΥΜΑΤΟΛΟΓΙΑ
ΣΥΝΑΝΤΑ
ΤΗΝ ΟΡΘΟΠΑΙΔΙΚΗ”
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23-25
ΟΚΤΩΒΡΙΟΥ
2020
ΗΡΑΚΛΕΙΟ
ΚΡΗΤΗΣ
Ibis Styles
Heraklion
Central

Συνδιοργανωτές:
Ρευματολογική Κλινική ΠΓΝΗ
Εργαστήριο Ιατρικής
Απεικόνισης ΠΓΝΗ

ΔΙΟΡΓΑΝΩΣΗ
ΠΑΓΚΡΗΤΙΑ
ΕΝΩΣΗ
ΥΓΕΙΑΣ



APOSTOLOS KARANTANAS

UNIVERSITY OF CRETE

Background

- Initial location of RA in 10-20%
- 84-94% of pts with RA will show foot involvement during course of RA

AIMS

- To present the main imaging findings of RA in the foot and ankle
- To discuss the main dd

Pathophysiology

- Synovitis



- BME



- Erosions



- Subchondral cysts



- Subluxation/Ankylosis

- **Tendinopathies**

- Tenosynovitis
- Degeneration
- Tear
 - May be the earliest and only sign of RA

- **Rheumatic nodules**

- ~1% of pts, may precede arthritis
- Points of pressure, extensor surfaces, Achilles





Diffuse osteopenia

Marginal erosions

RA 13y



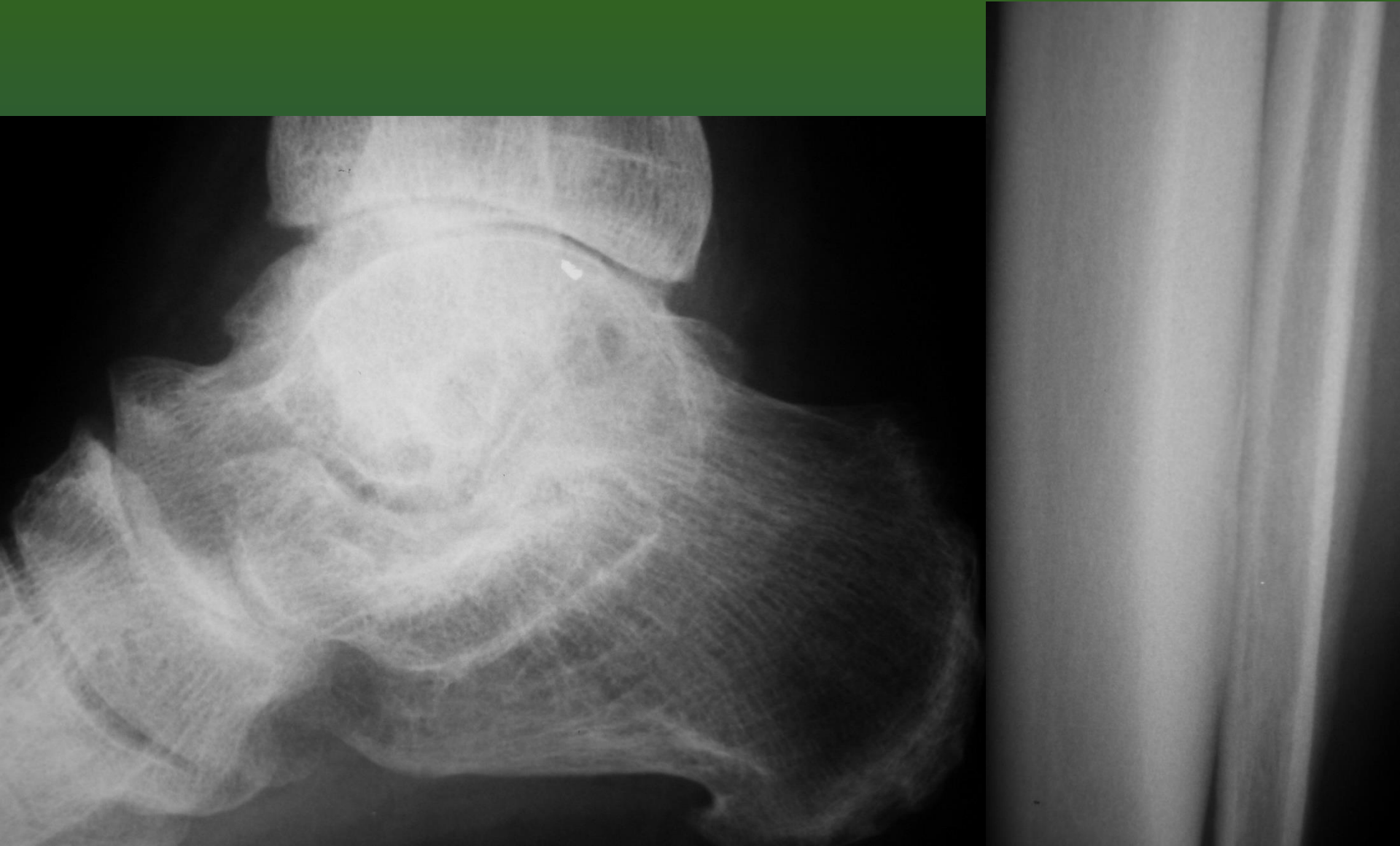
73f



Long standing RA



RA10y, erosions and subchondral cysts



Dd Psoriatic arthritis



Gout



X Rays

• Pros



- Wide availability
- Low cost
- Experience in reading

• Cons

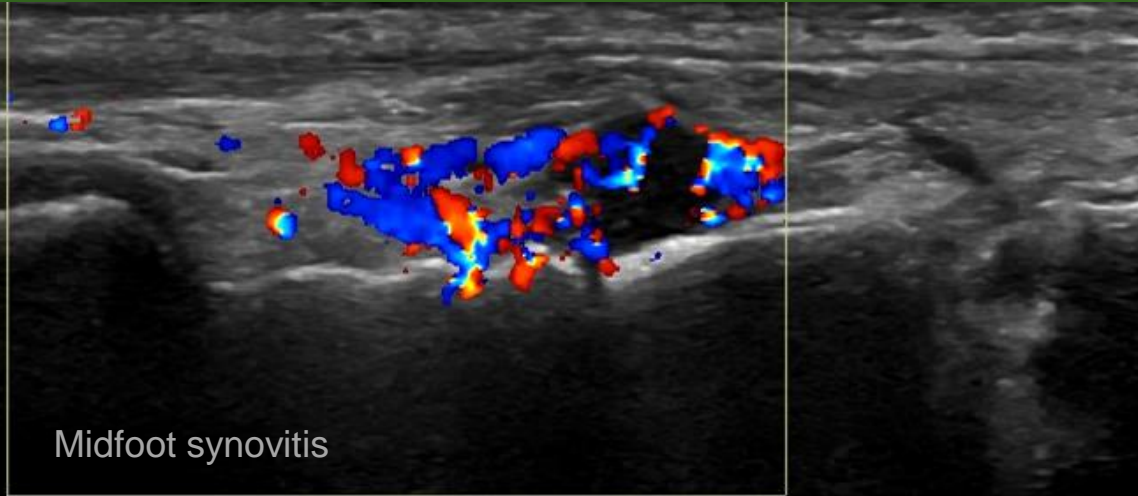


- Late changes
- Misses synovitis, bone marrow edema, soft tissue changes, PTt tear
- Unable to quantify base line involvement and response to treatment

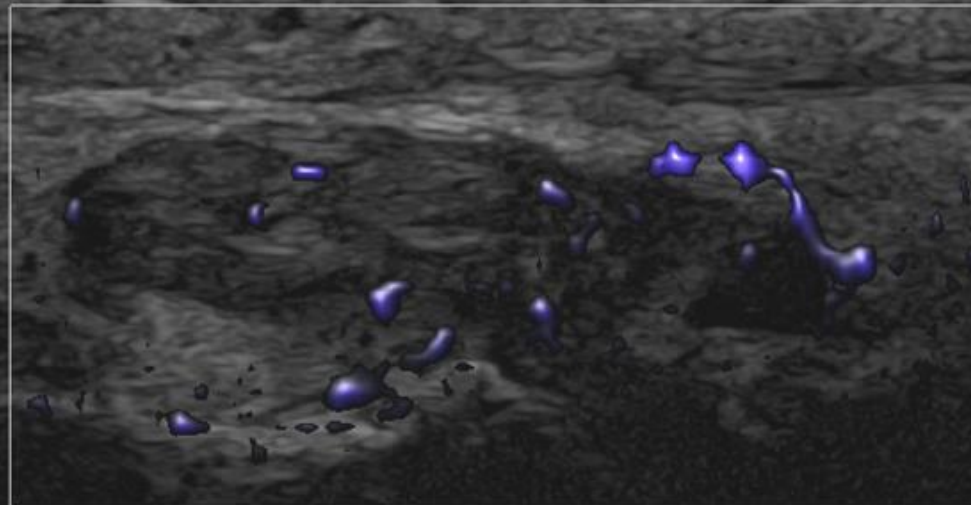
Which is the way towards early diagnosis?



What about US?



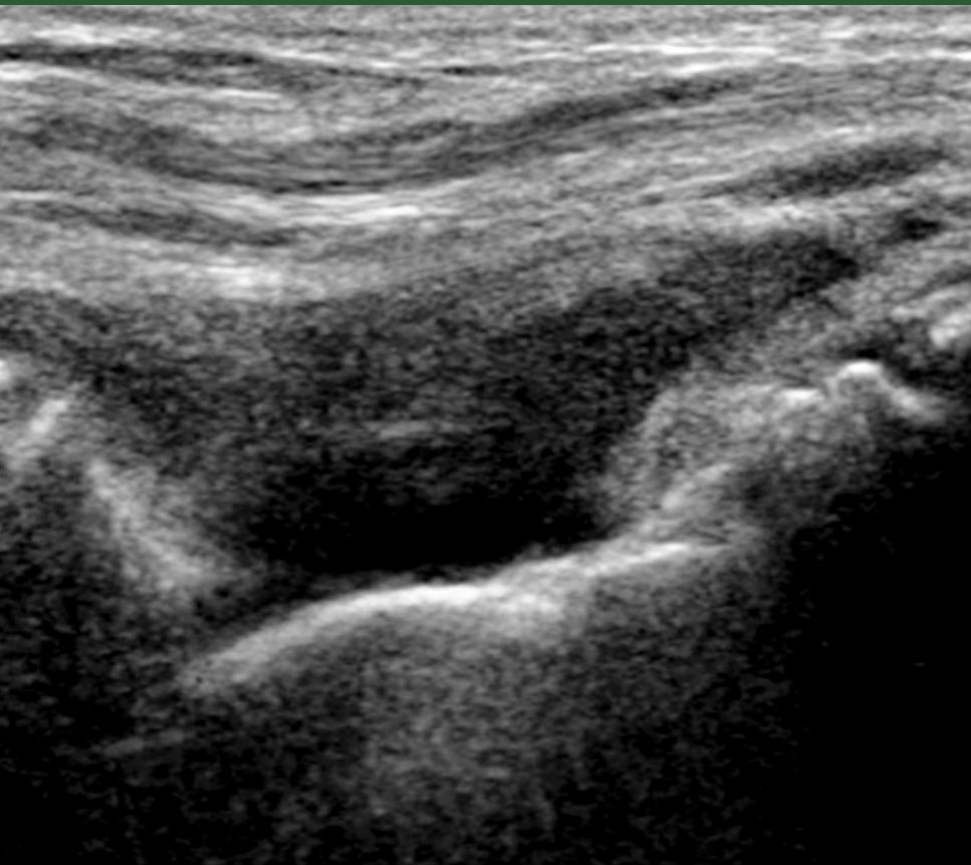
Synovitis
Hyperemia
Erosions
JSN



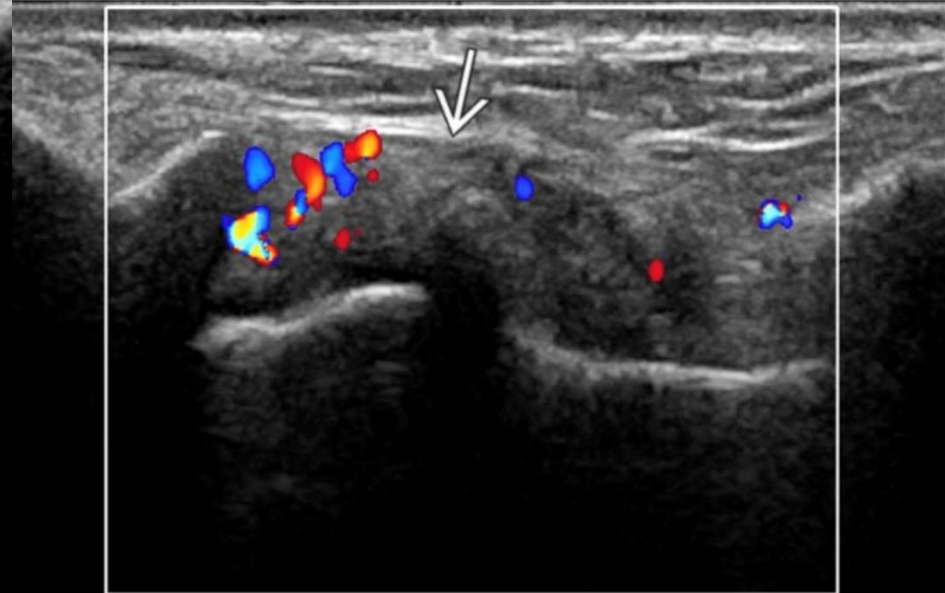
Ankle joint synovitis

Synovial hypertrophy: 2nd-4th MTP joints

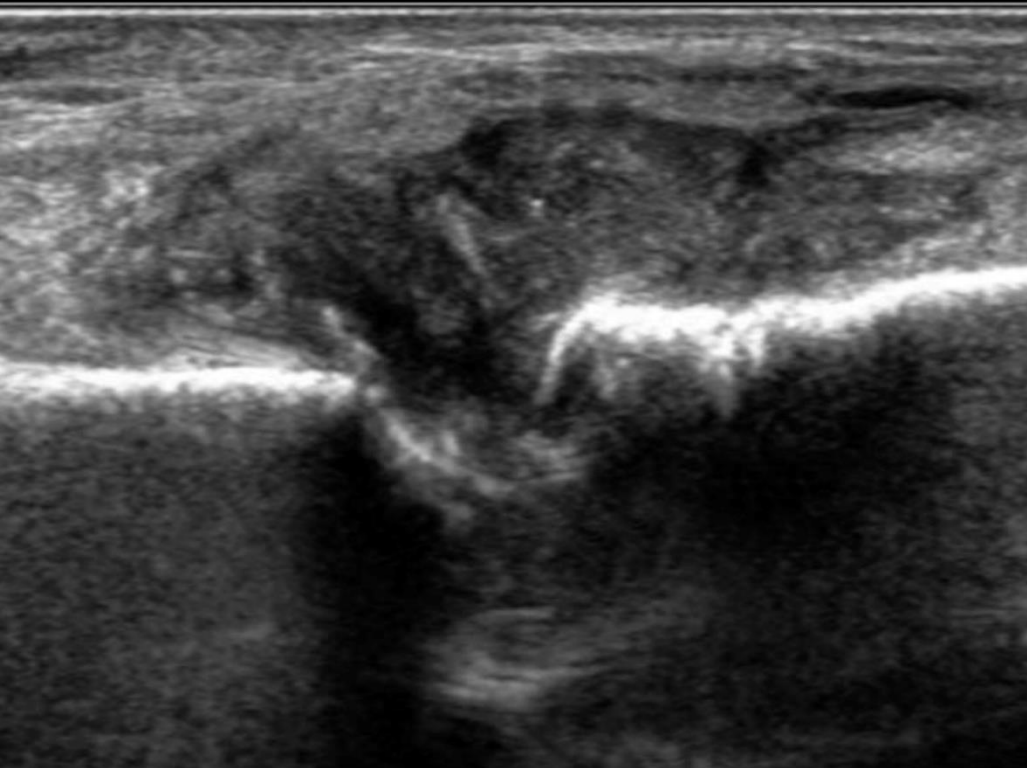
Power Doppler signal (active synovitis): 5th MTP



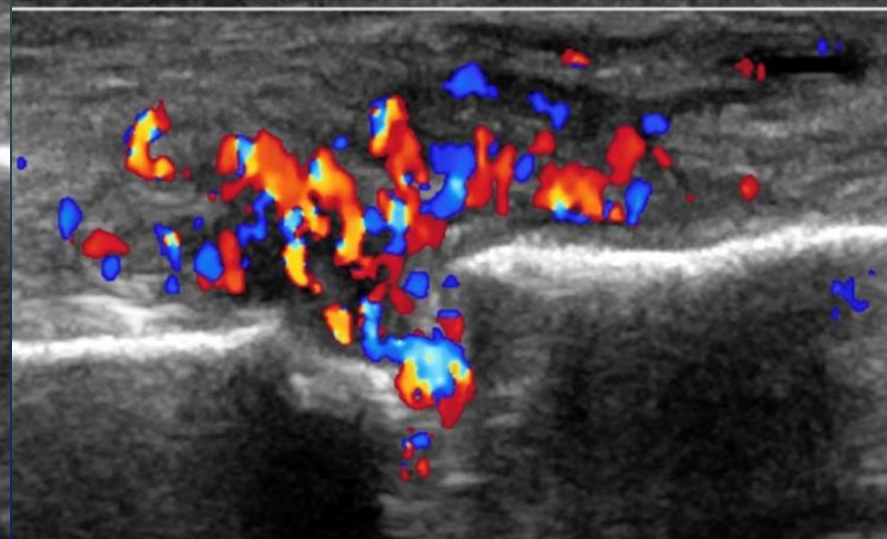
synovial proliferation with hyperaemia

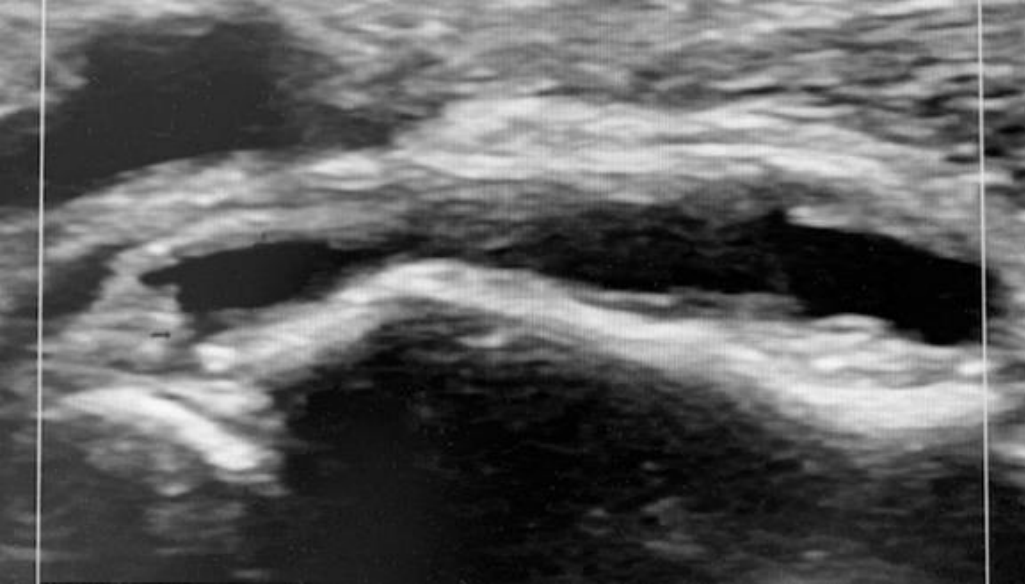


Cuneiform-2nd metatarsal joint synovial proliferation



Hyperaemia

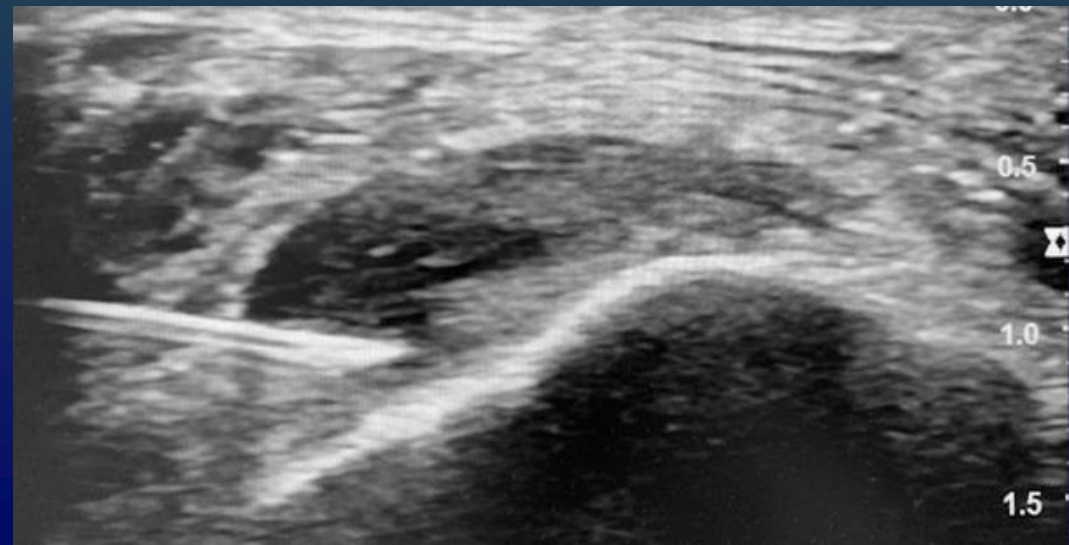




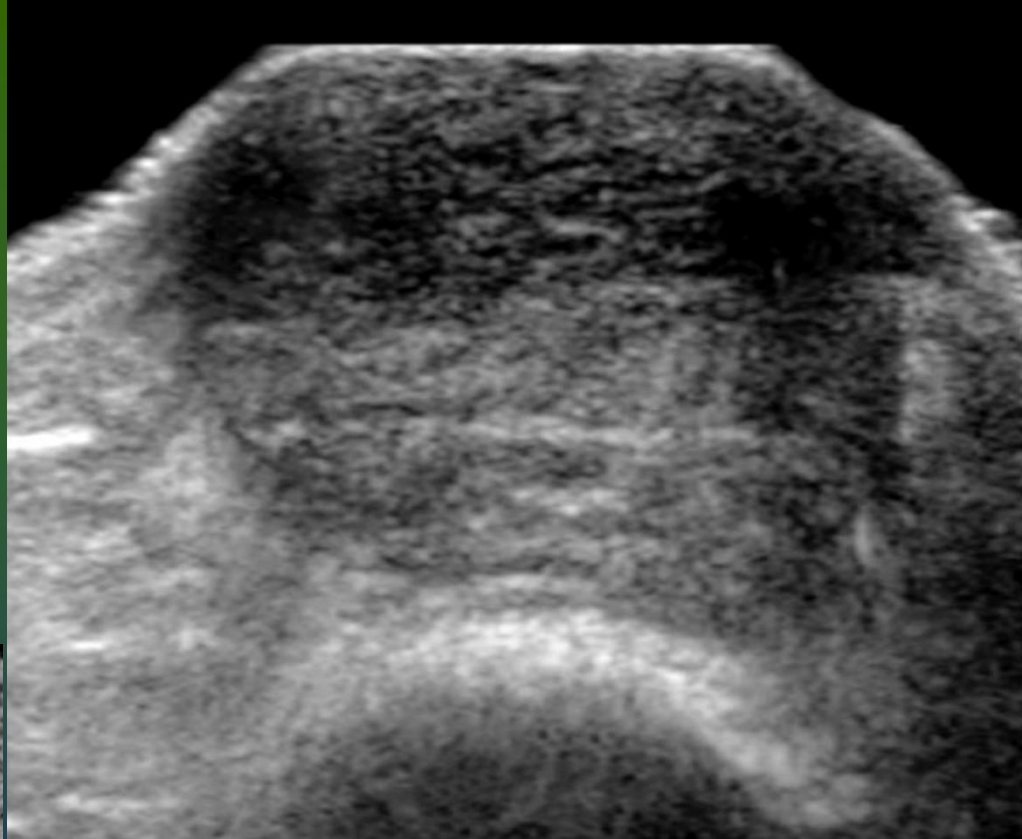
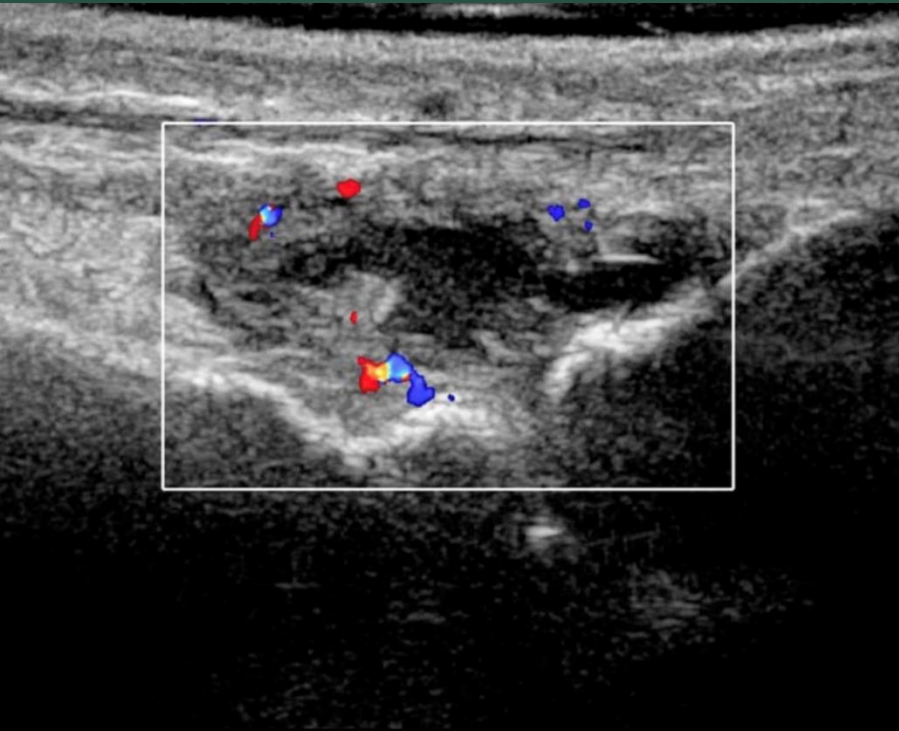
Synovial cyst
Synovial thickening

Communication with Talonavicular joint

US - Guided Treatment



2nd MTP joint fluid,
synovial thickening and mild hyperaemia



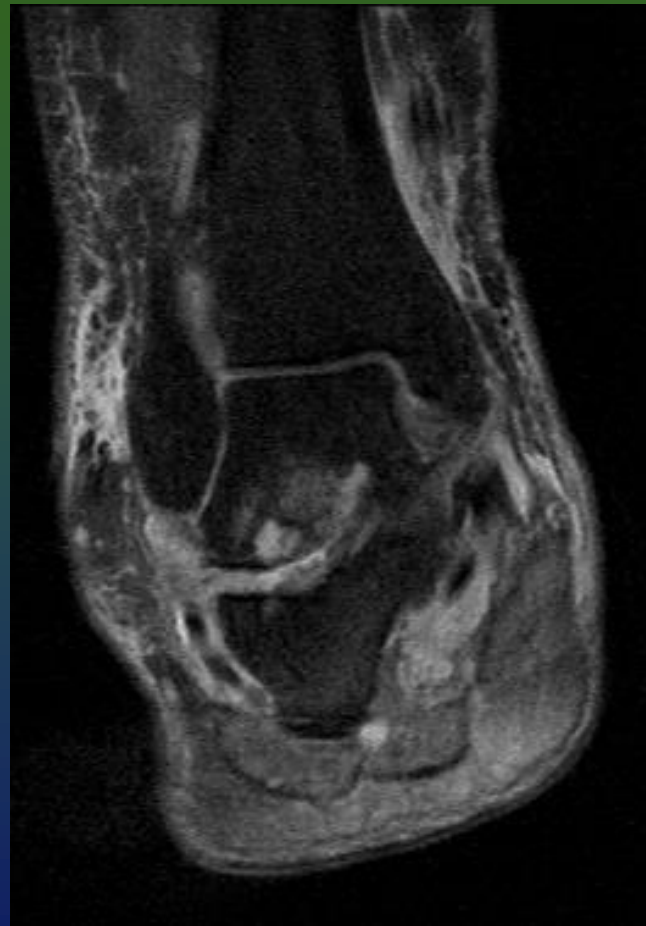
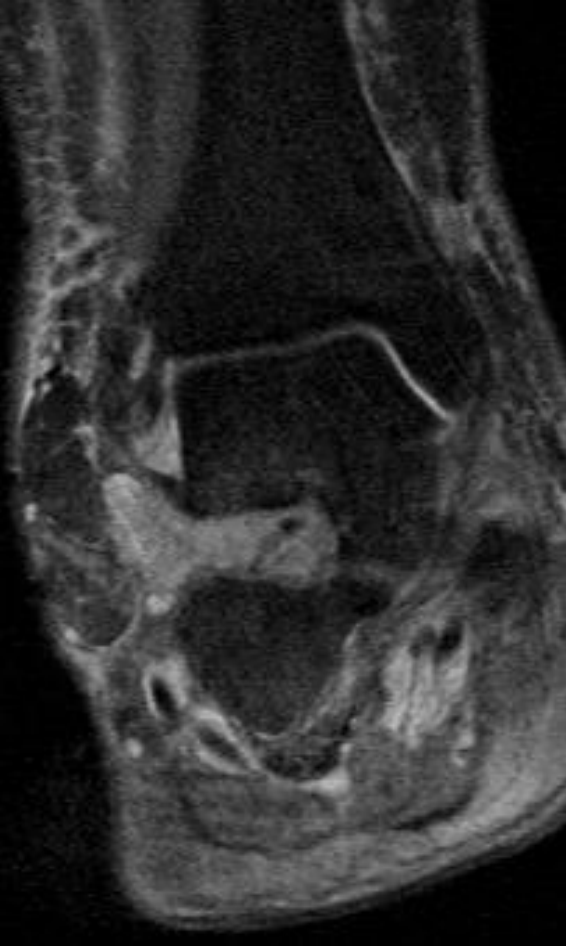
Subcutaneous rheumatoid nodule

MRI

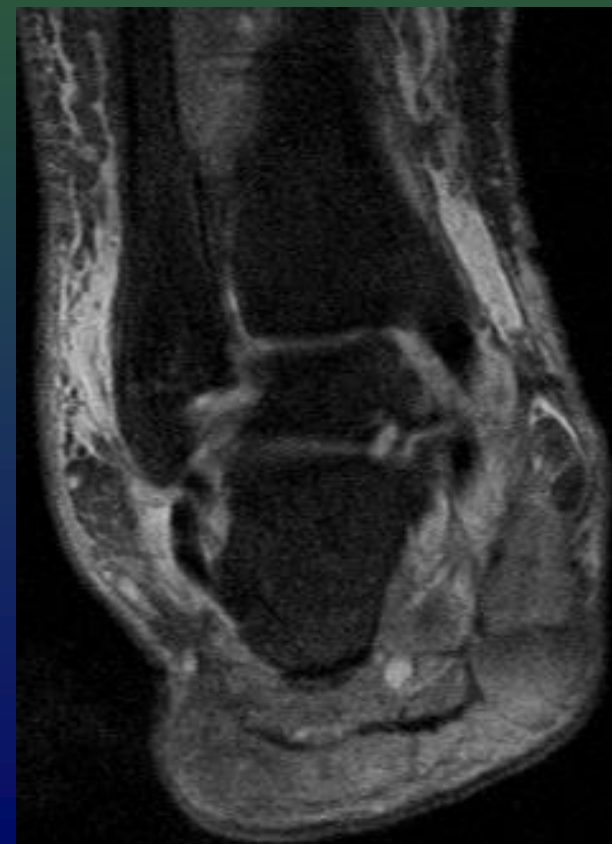


- Superb contrast resolution!!!
- Multiplanar imaging
- Detection of non-rheumatologic disorders
- BME!!!!

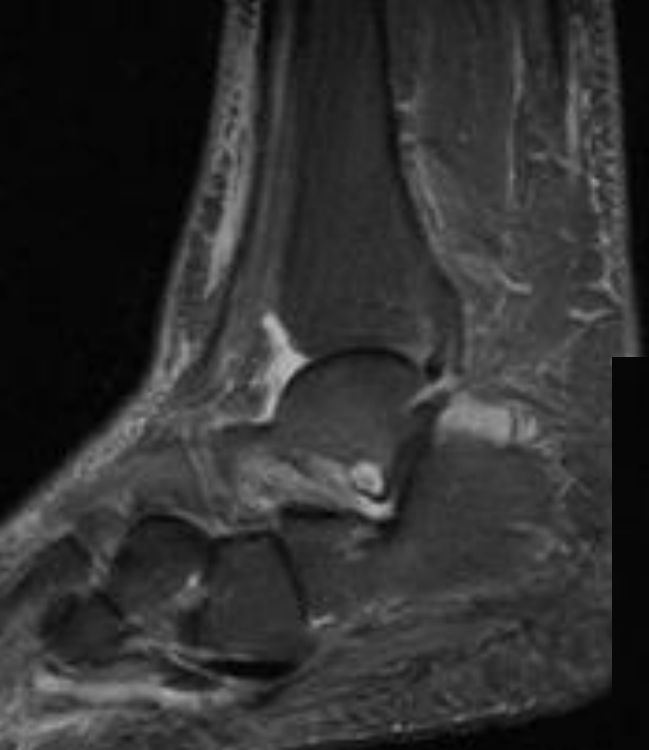
60f, 5y pain



Synovitis
Cyst
Tenosynovitis



fs pd

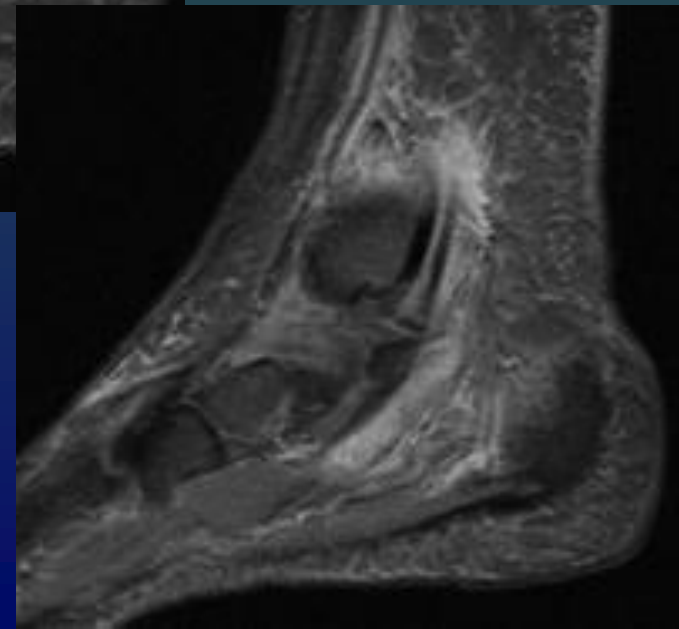
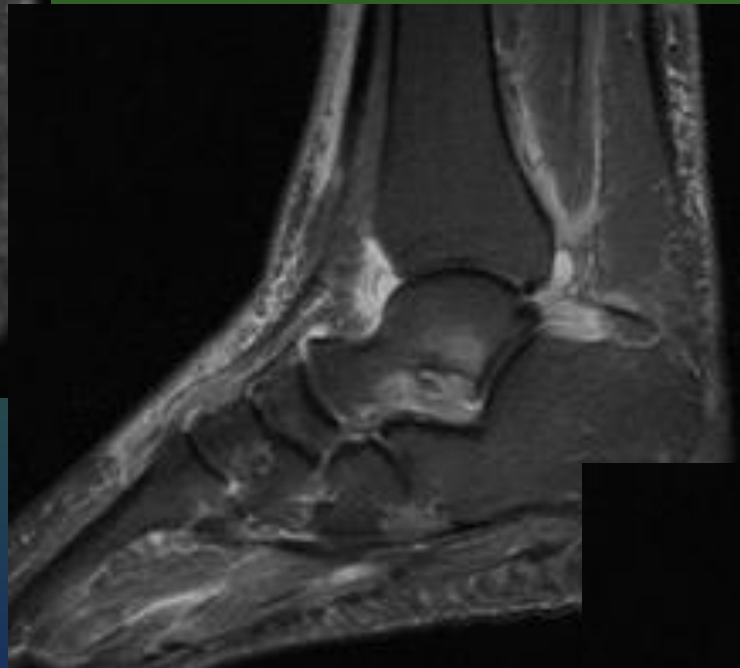


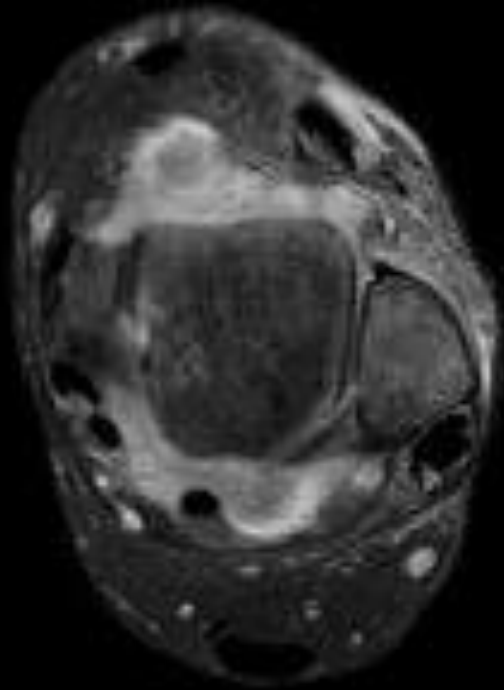
Bone cyst

BME

Tenosynovitis

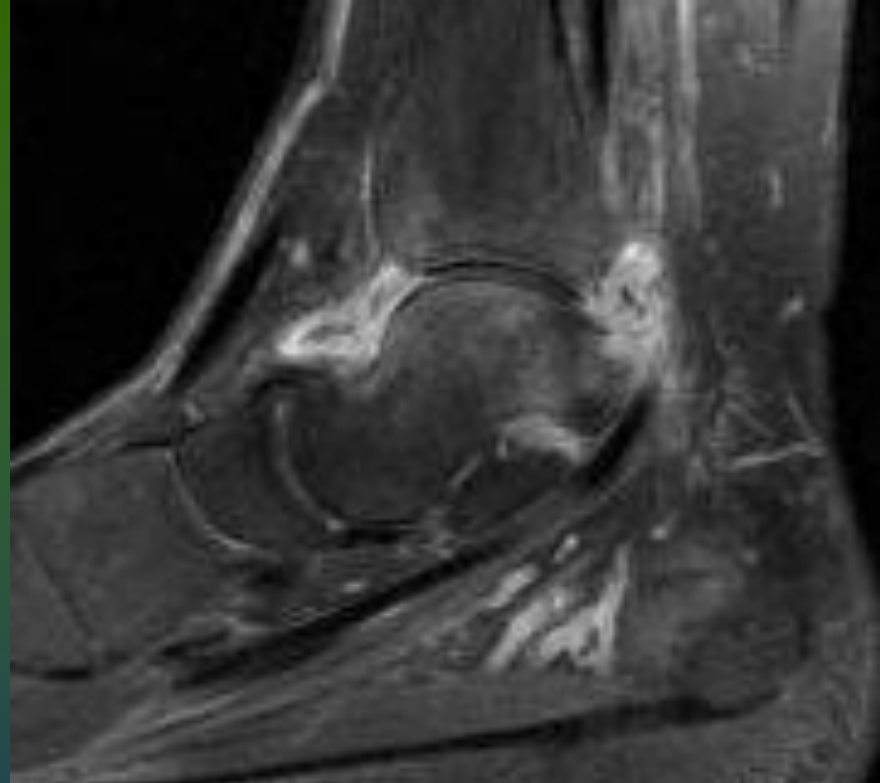
STIR



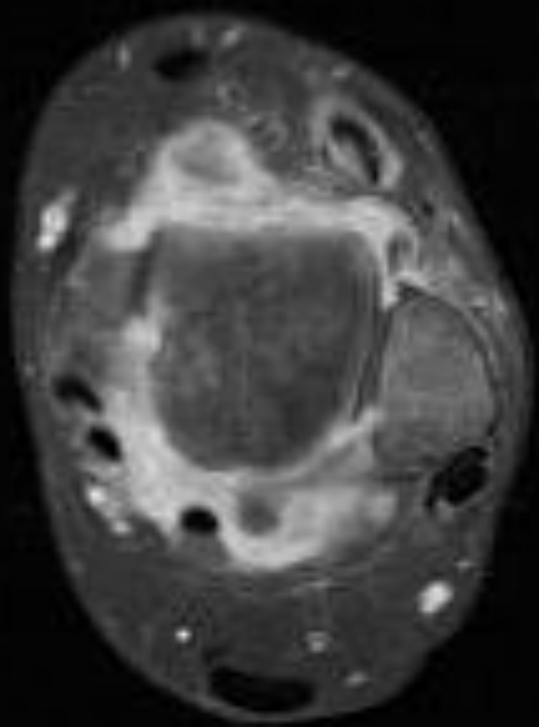


FS PD-w

Synovitis



BME

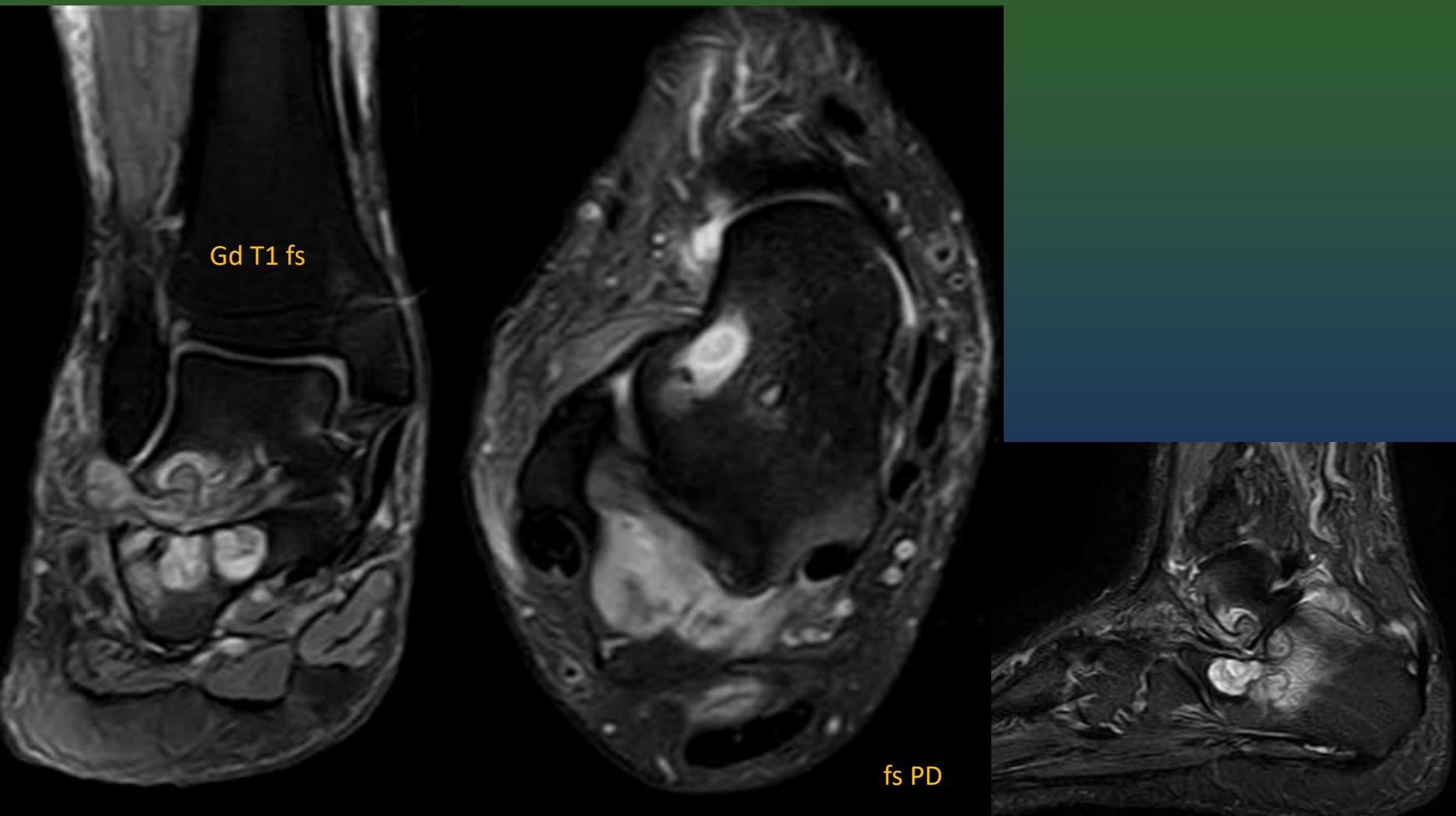


FS Gd T1-w

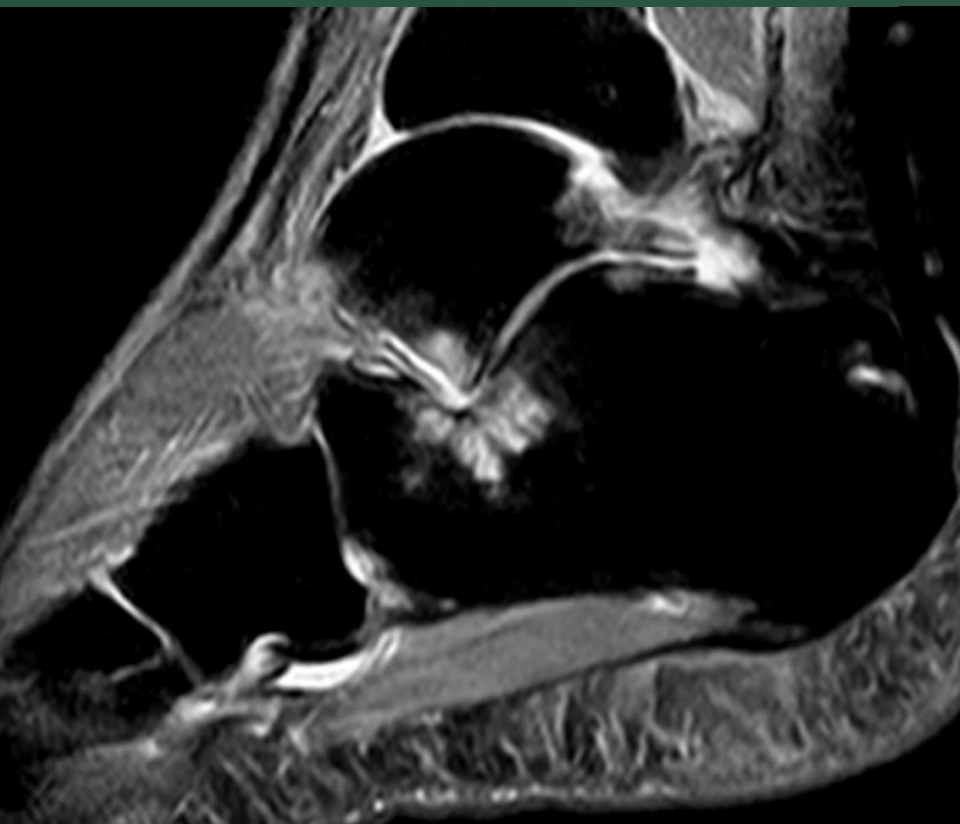


59f

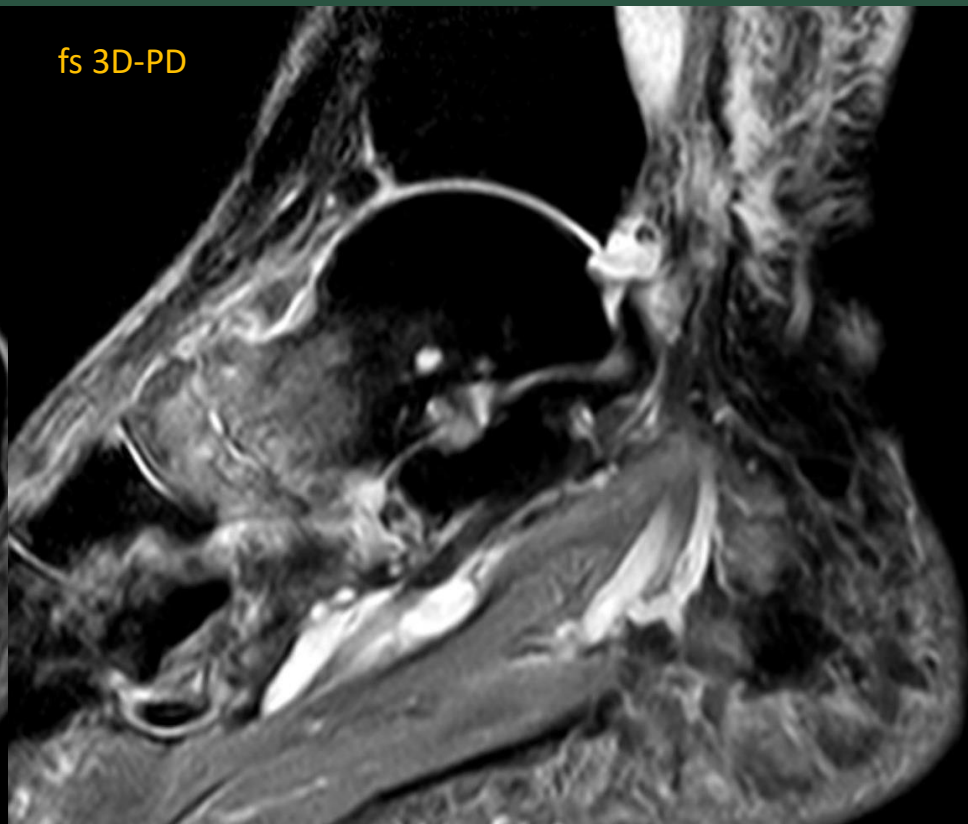
66m, +RA, pain 6m



60m



fs 3D-PD





BME

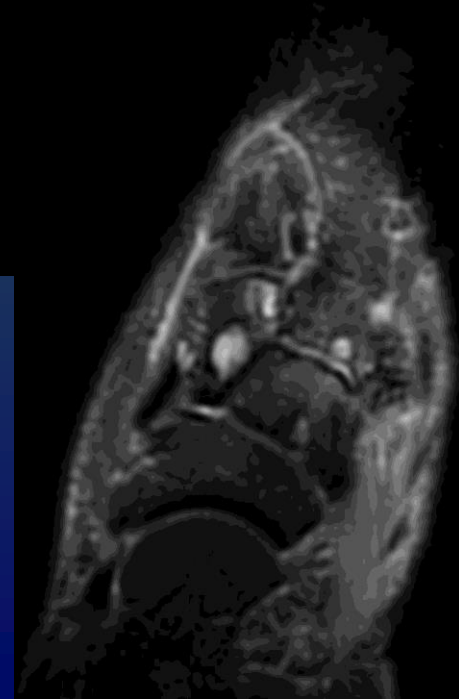
ST edema

Erosions

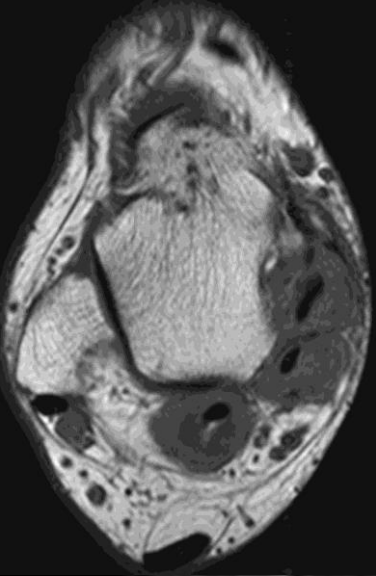
Subchondral cysts



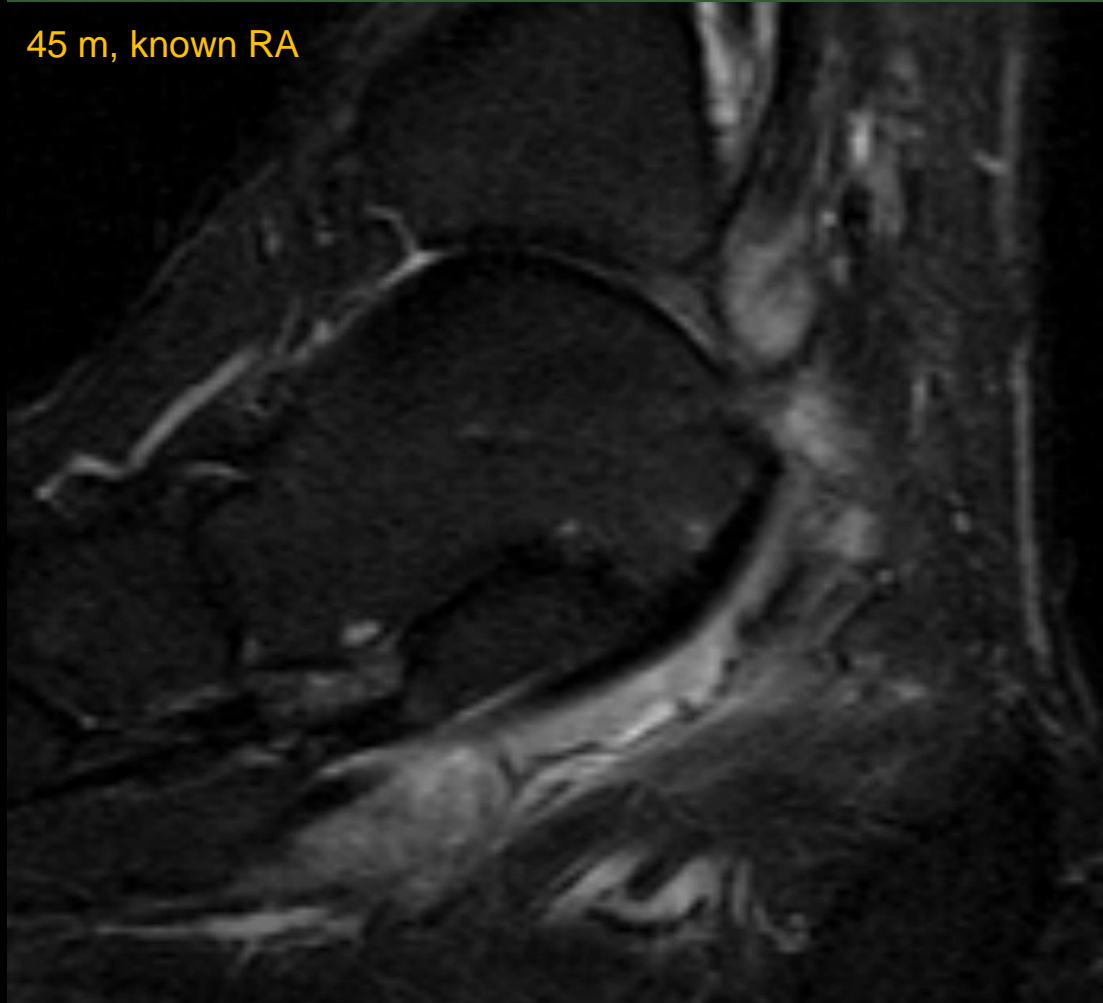
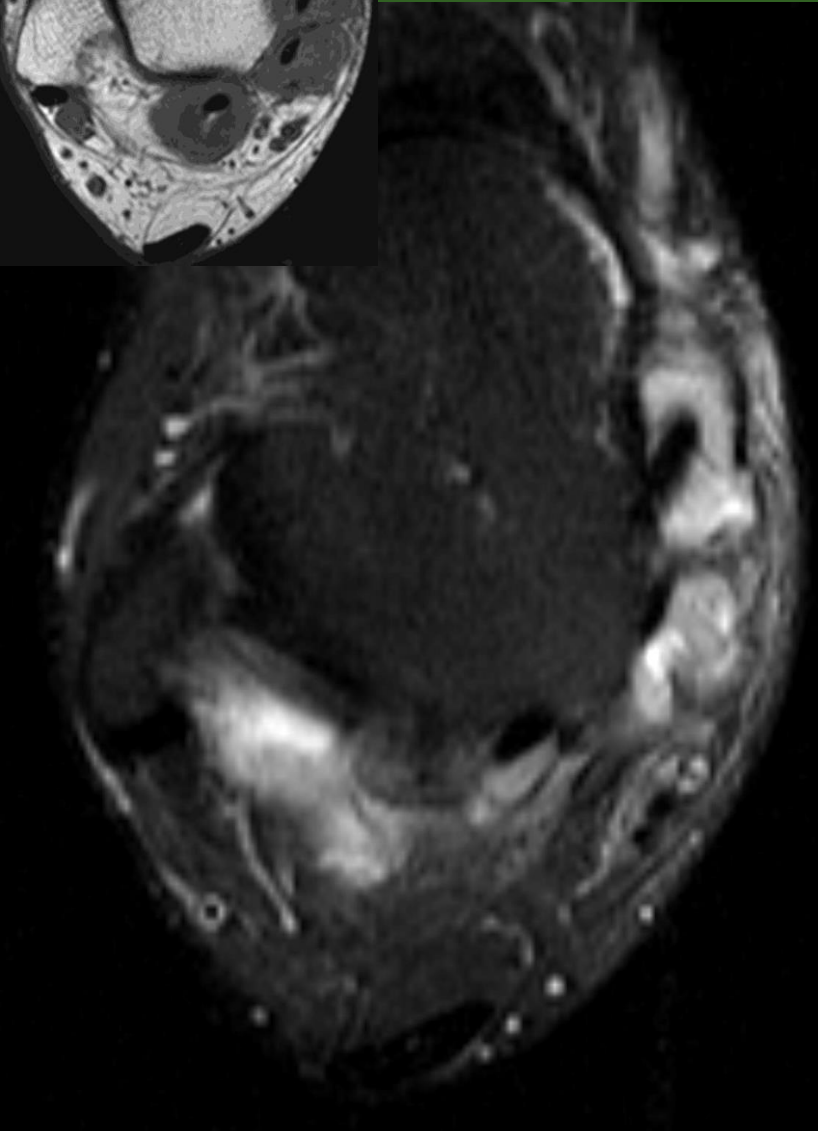
Concurrent involvement of midfoot joints



Flexor tenosynovitis



45 m, known RA



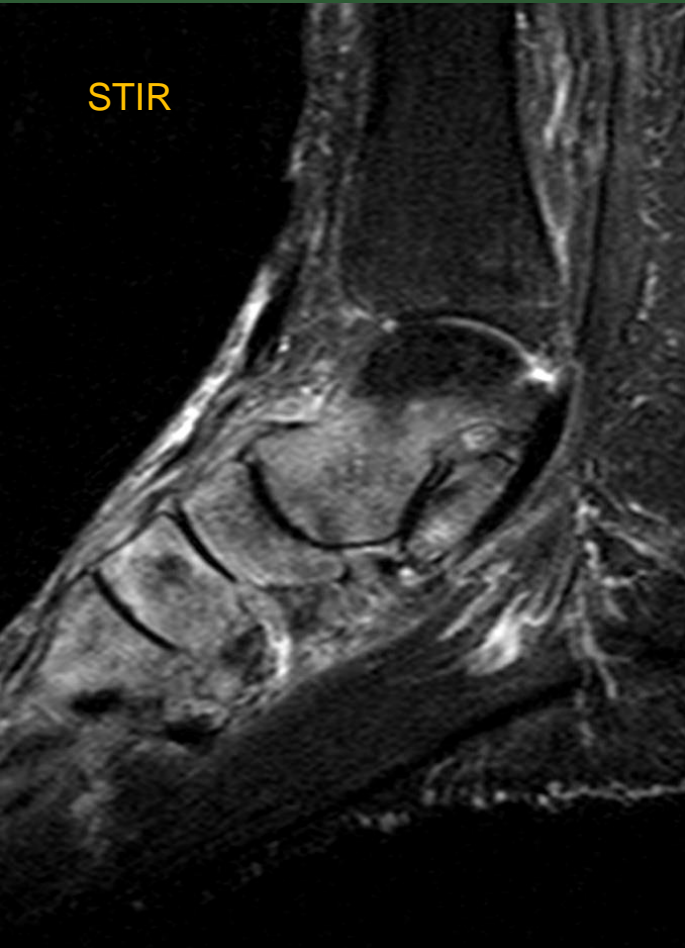
Hallux Valgus

28°

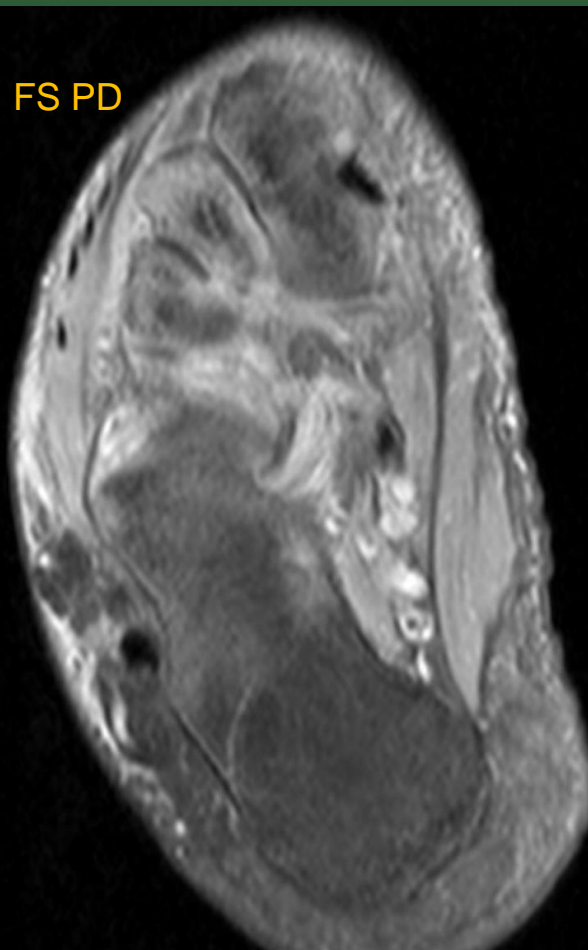
52f

57f, 9m pain

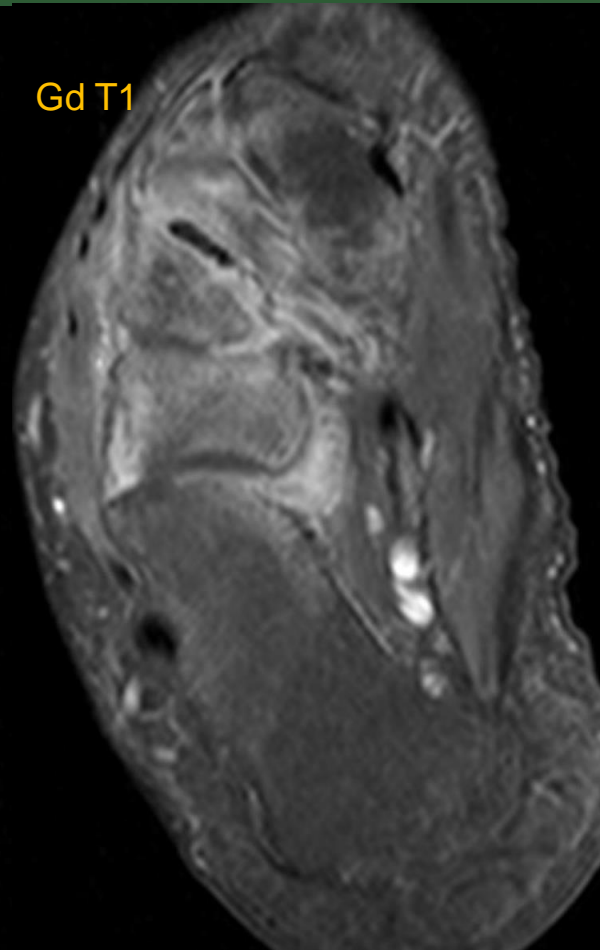
STIR



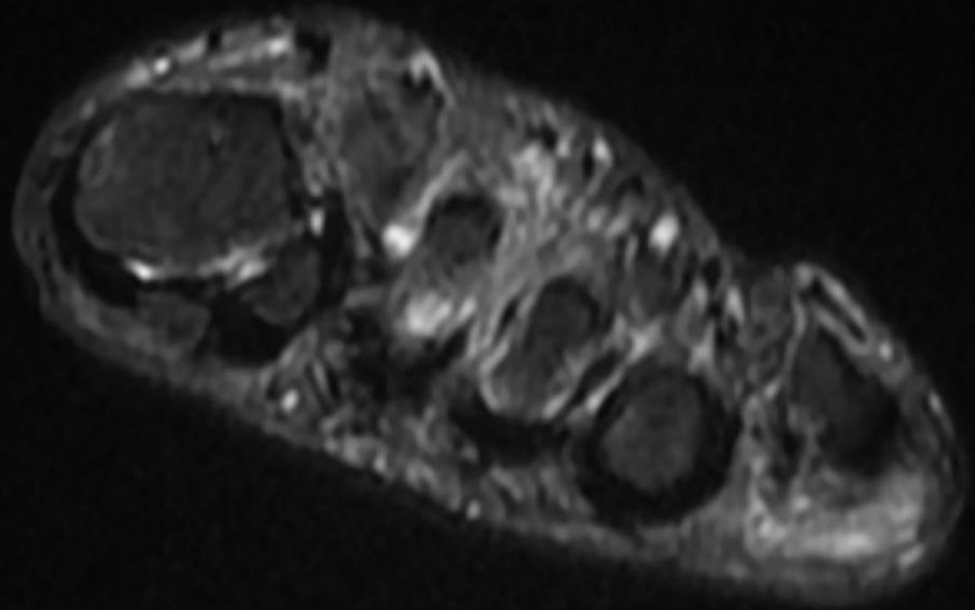
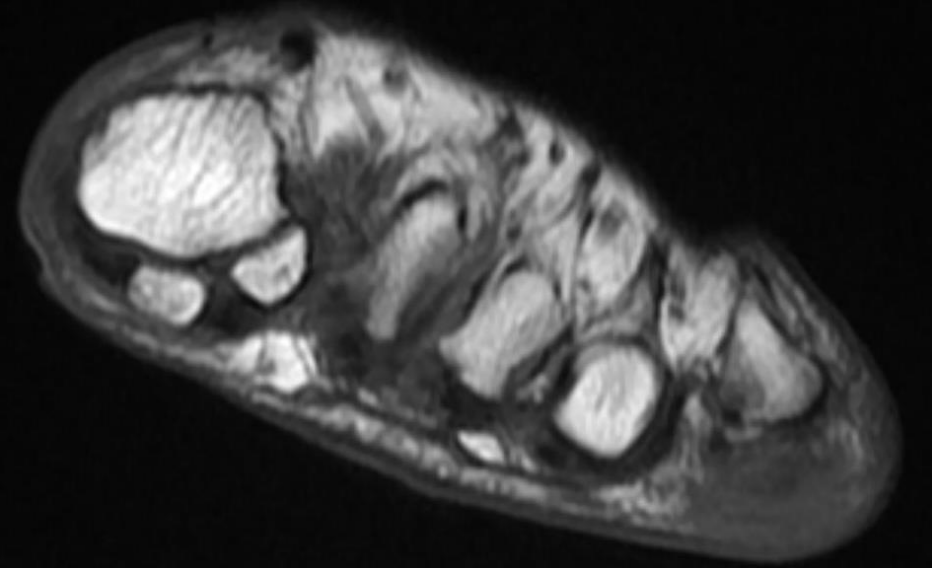
FS PD



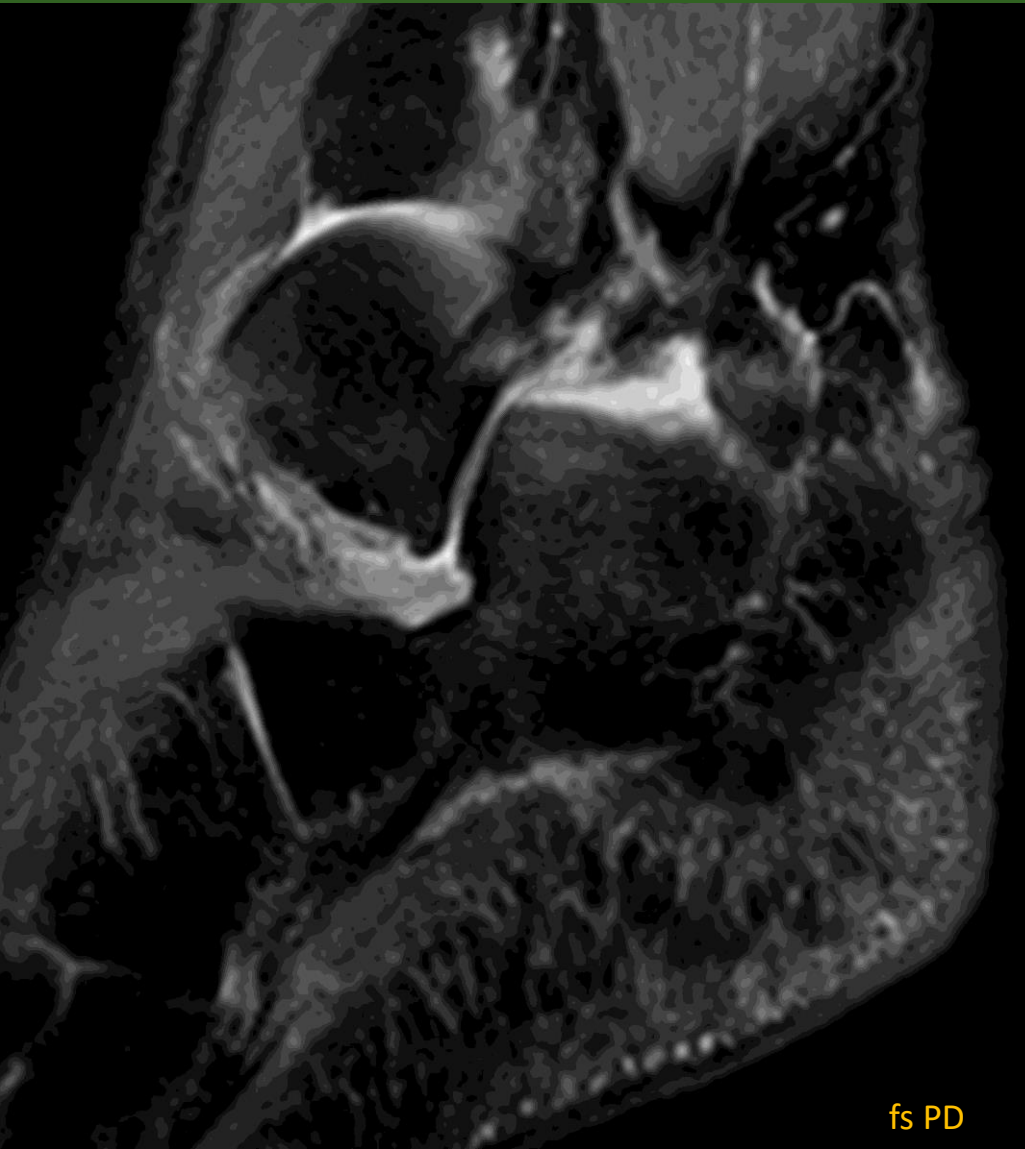
Gd T1



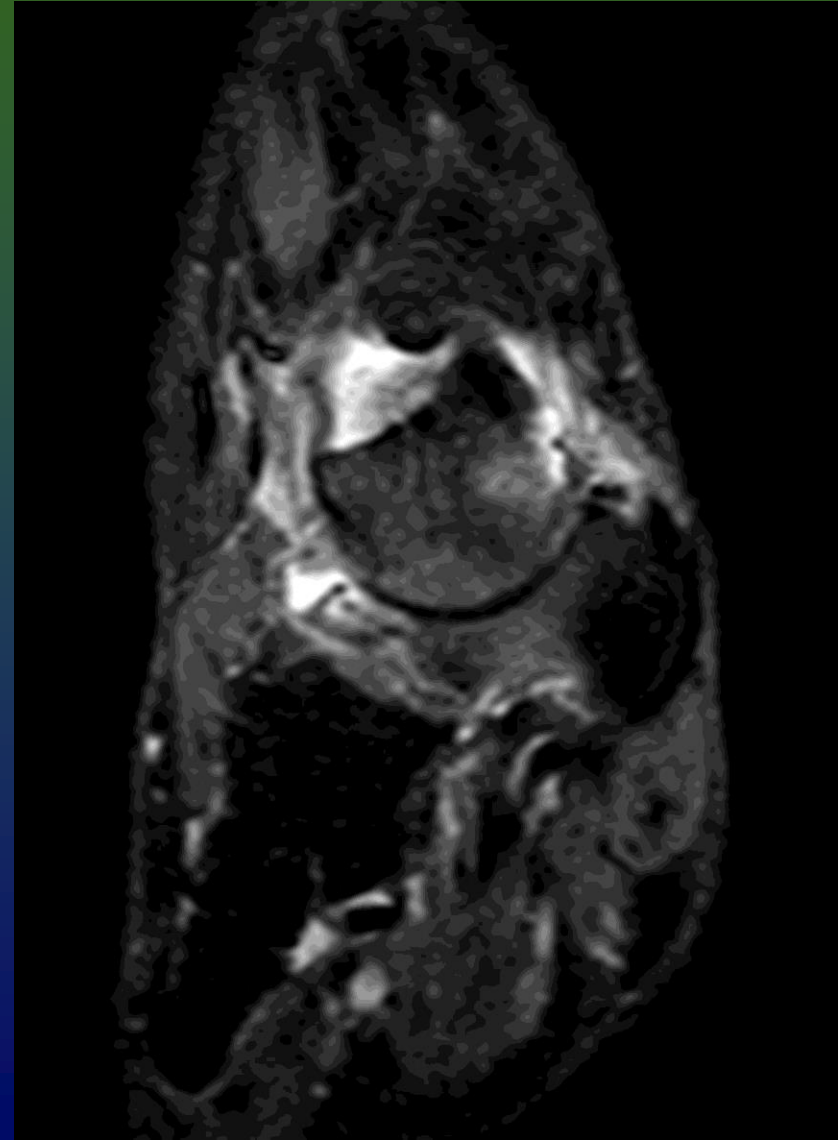
Rheumatoid nodules, 66f

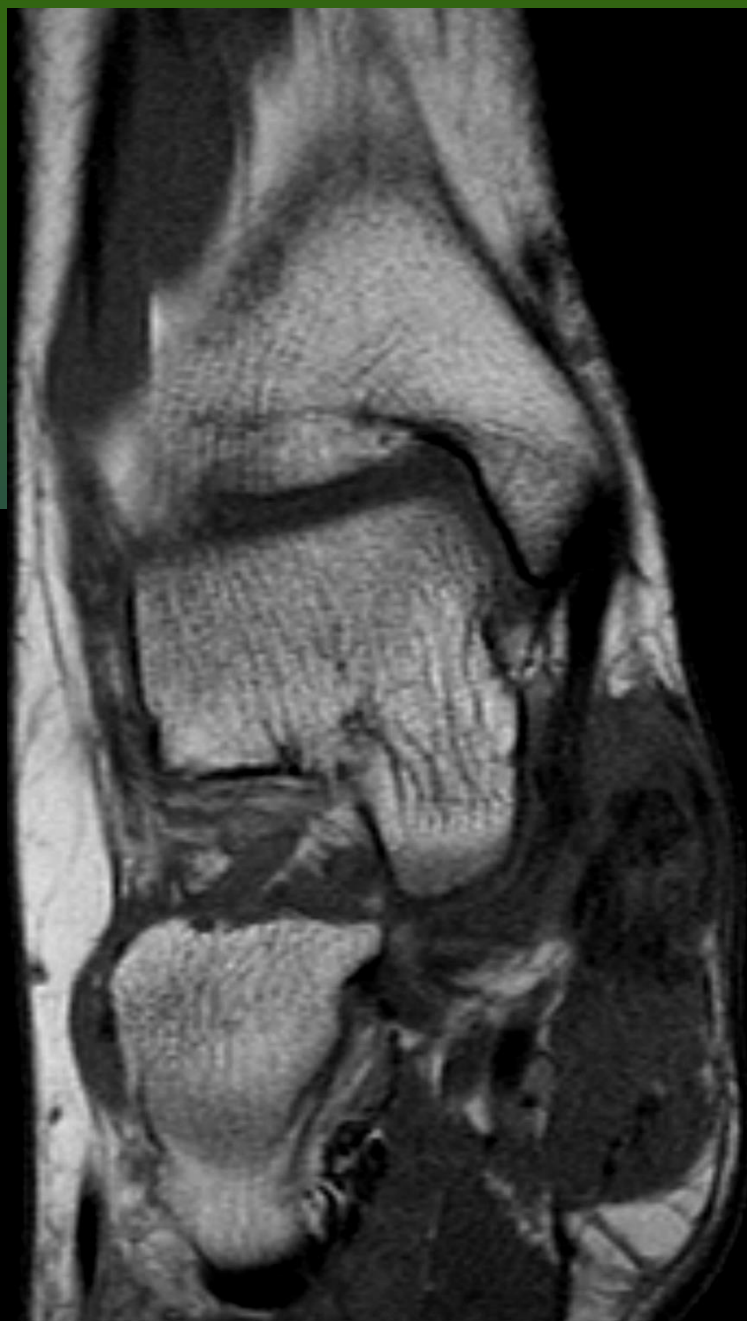
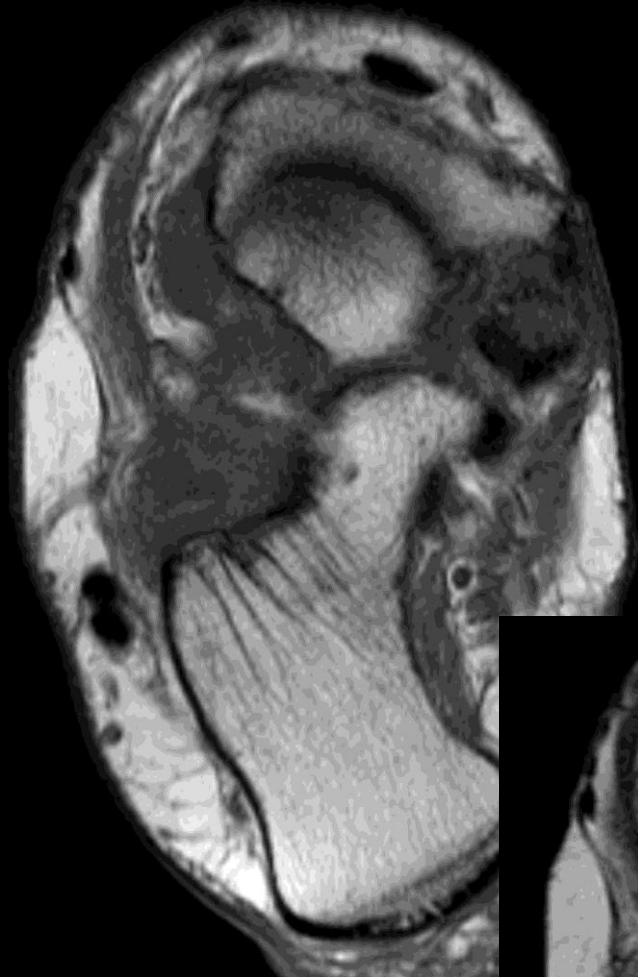


Flatfoot, PTt tear



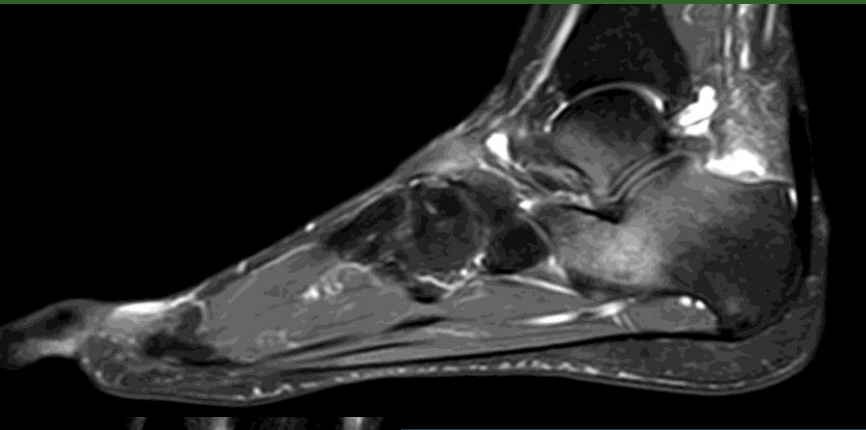
fs PD



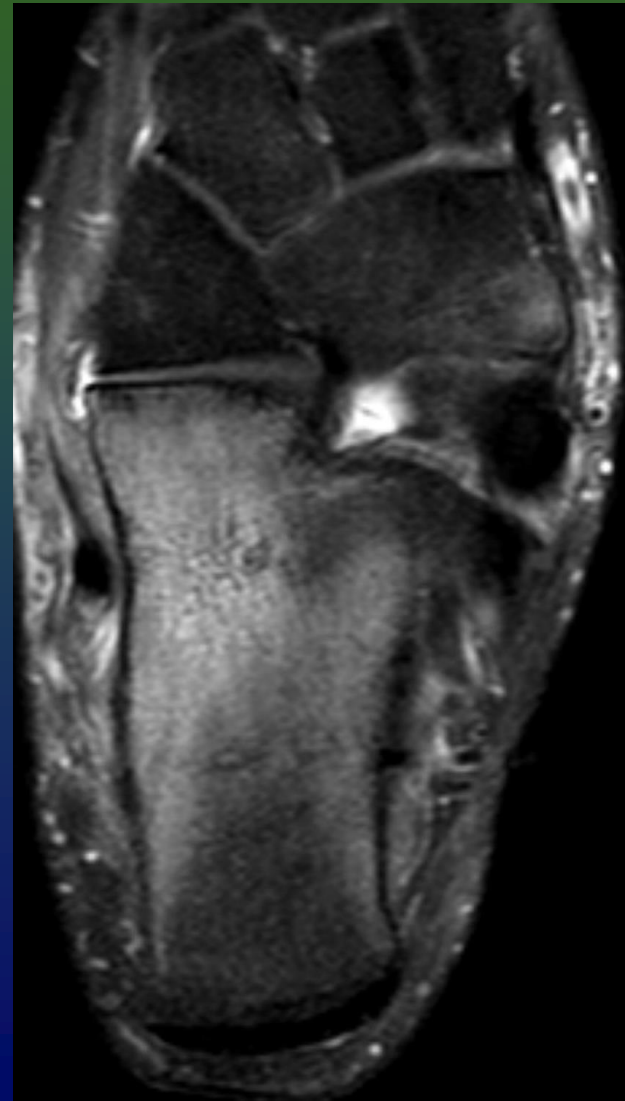


Quiz case

Pasty maker, 35m, pain 1y, +RF



fs PD-w



No synovitis, no erosion, no tenosynovitis

Diagnosis: 

Weight bearing protection for 6w

Clinical improvement



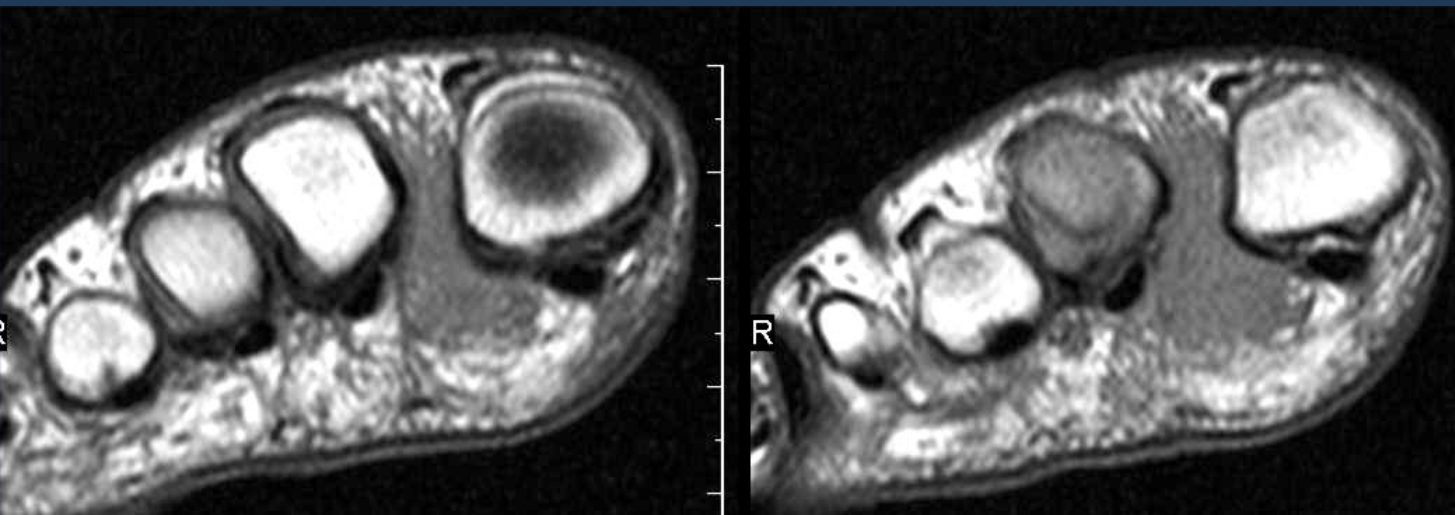
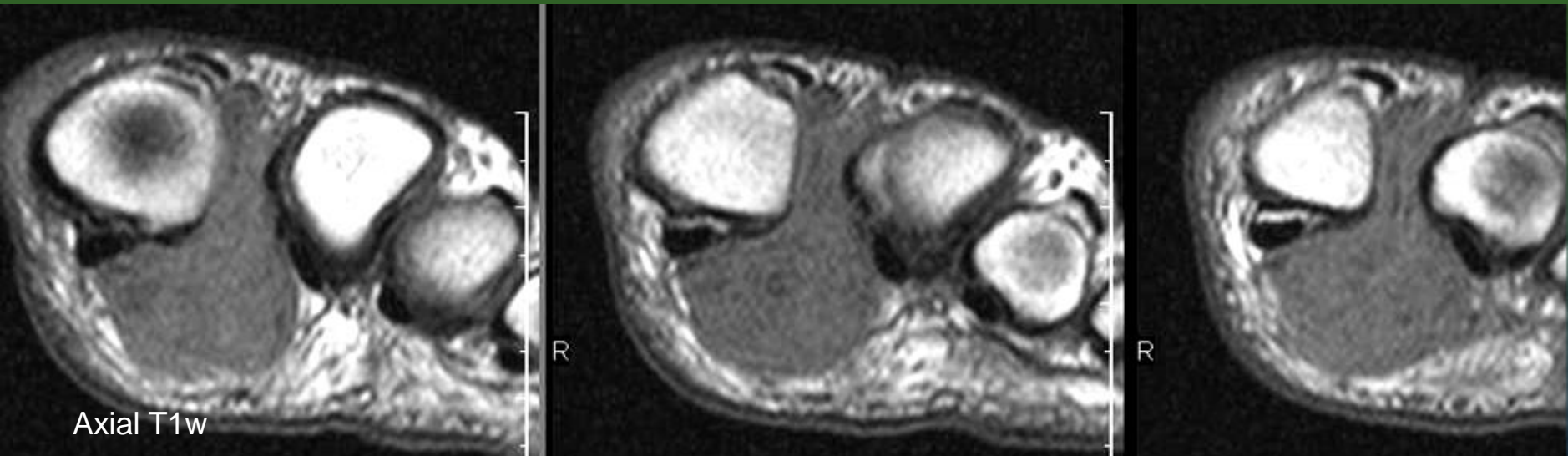
Gd fs T1

Stress reaction



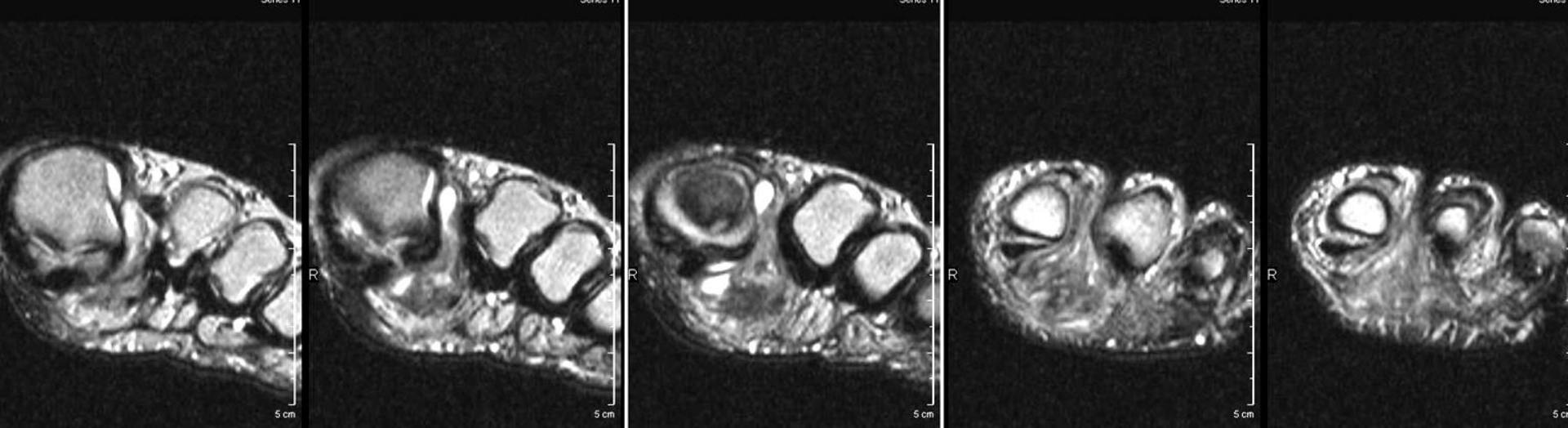
Quiz case

42-year-old woman. Pain inter-metatarsal I/II



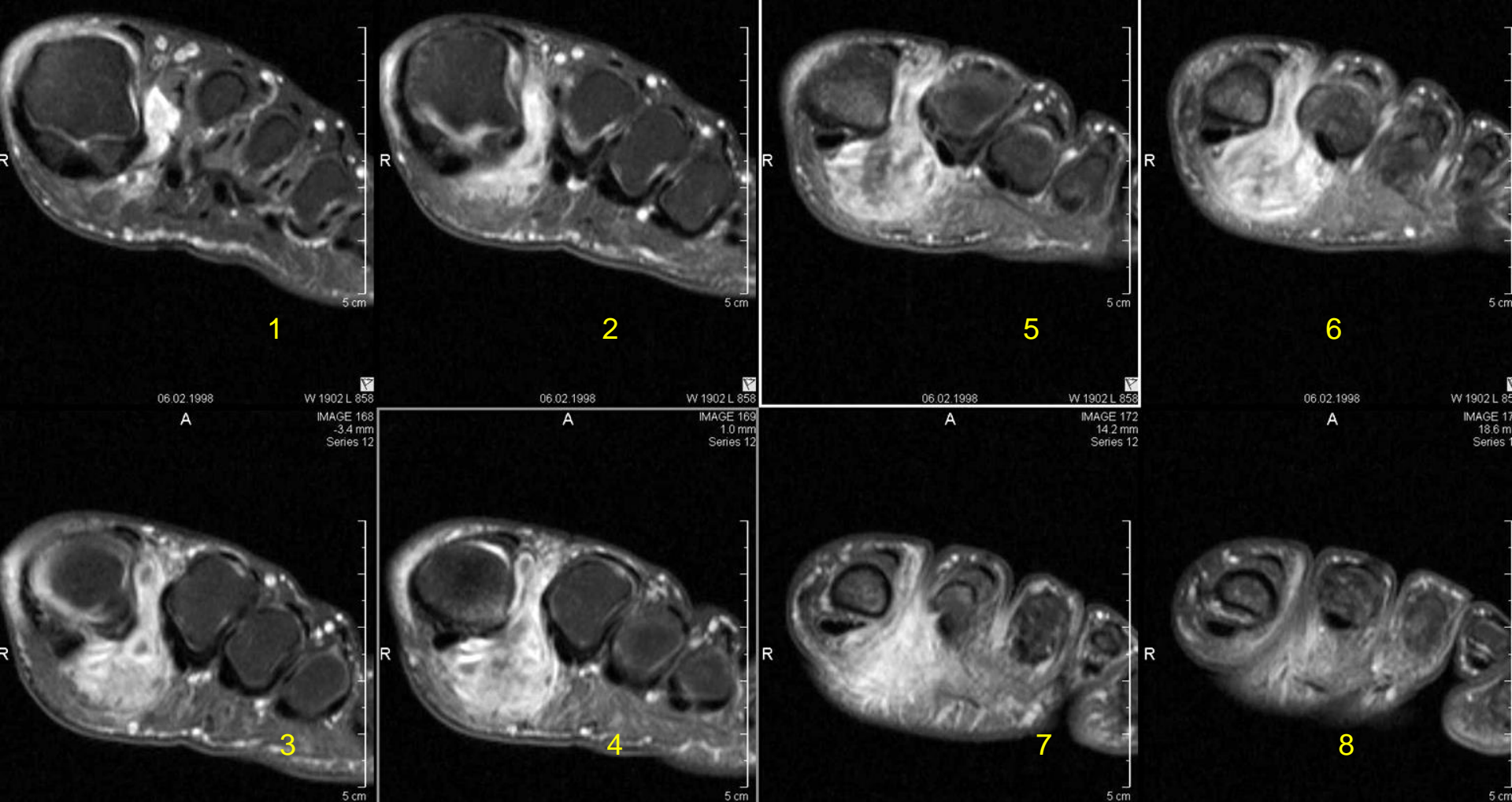
Symptomatic **left**

Asymptomatic right



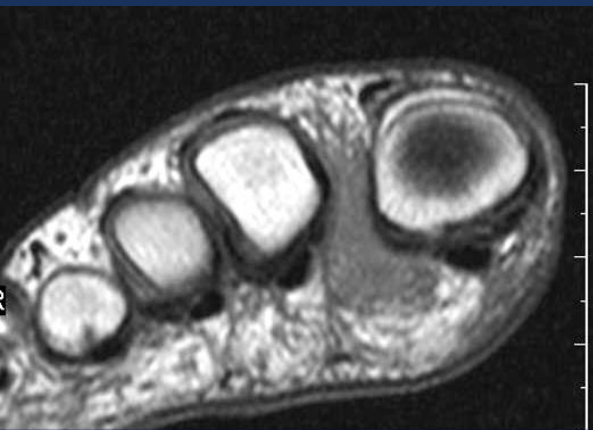
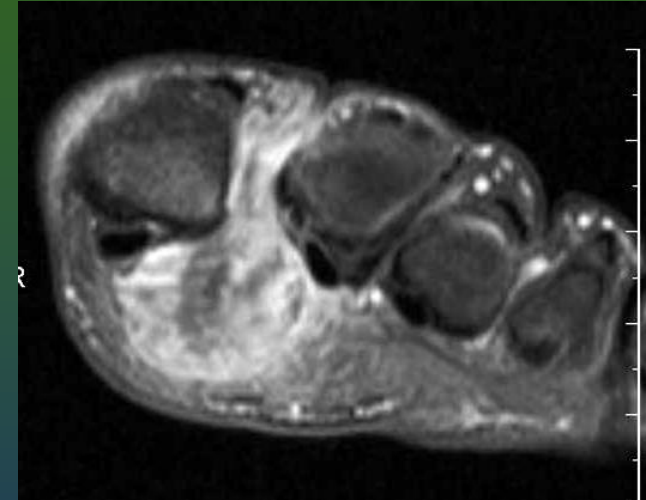
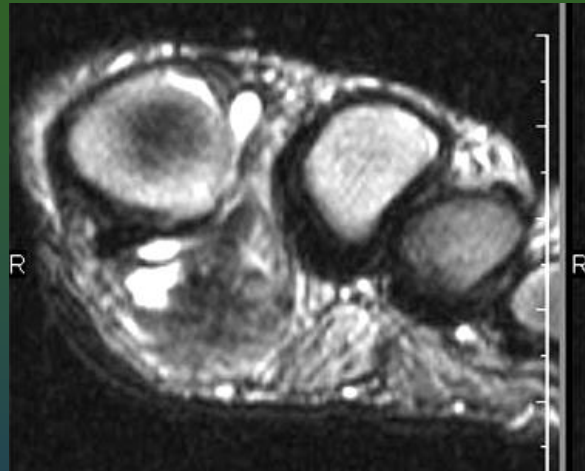
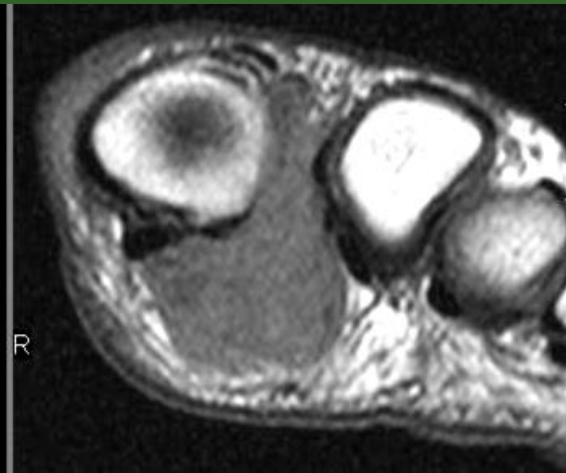
- Axial T2w

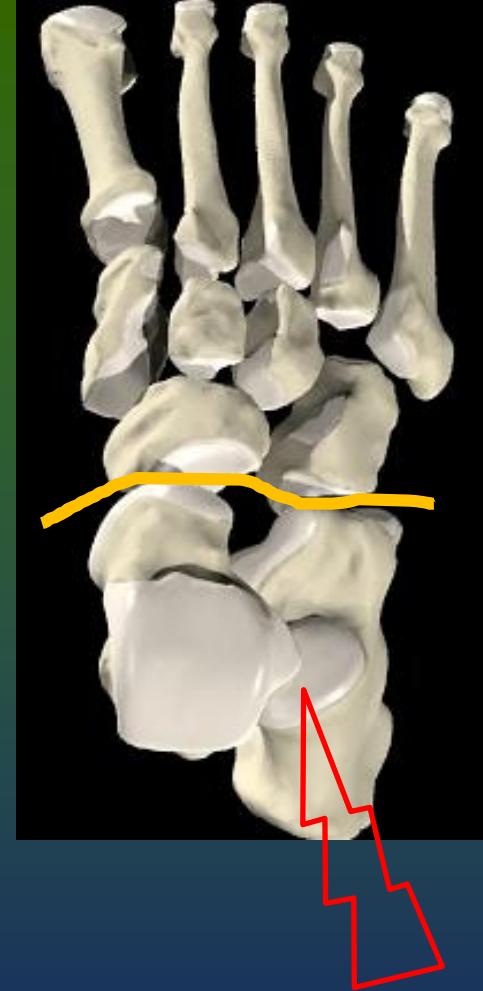




- Axial T1w fat sat after gadolinium

RHEUMATOID NODULES





Hindfoot:

Ankle joint, Usually symmetric, bilateral

Talocalcaneal joints

Periosteal reaction posterior tibial diaphysis

Rheumatoid nodules superficial to Achilles tendon



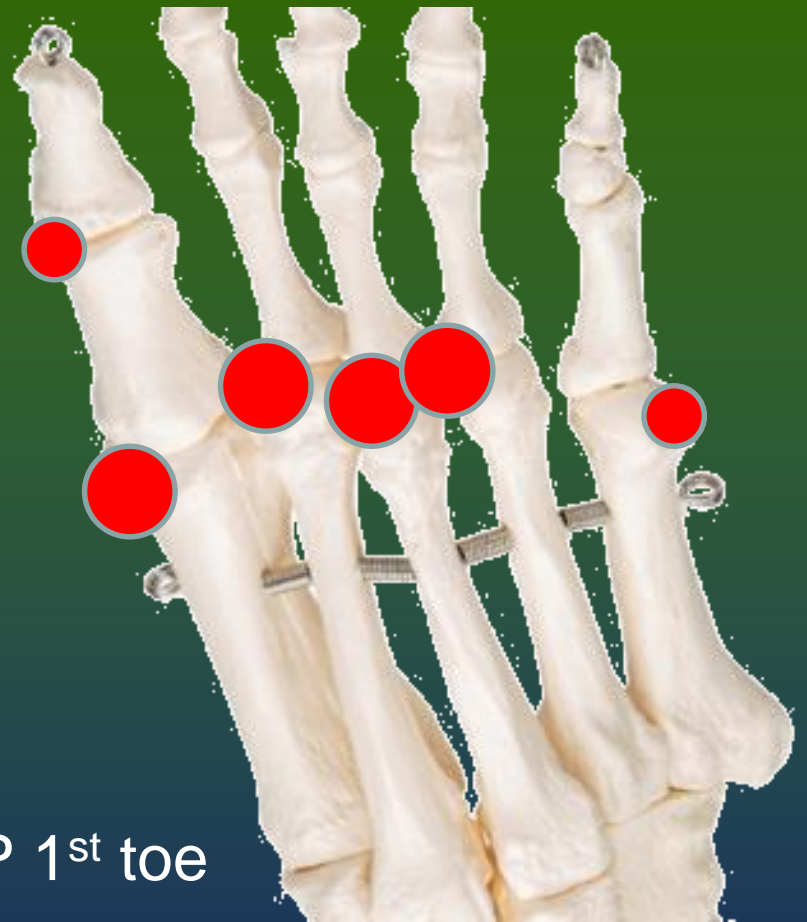
Midfoot:

Concurrent involvement of navicular, cuboid and cuneiforms

Often coexists with involvement of the wrist without hand and
forefoot involvement

PTt tear and flatfoot

1st tarsometatarsal joint degeneration, altered biomechanics



Forefoot:

Most common location

Erosions, medial aspect, typical PP 1st toe

Larger in MTP joints due to larger “bare area”

Lateral aspect 5th metatarsal head, may be earlier than in hands

Ευχαριστώ

- XR, baseline
- US, early diagnosis
- MRI, early diagnosis and dd

