

# ΑΠΕΙΚΟΝΙΣΗ ΣΤΗΝ ΑΞΟΝΙΚΗ ΣΠΟΝΔΥΛΑΡΘΡΙΤΙΔΑ



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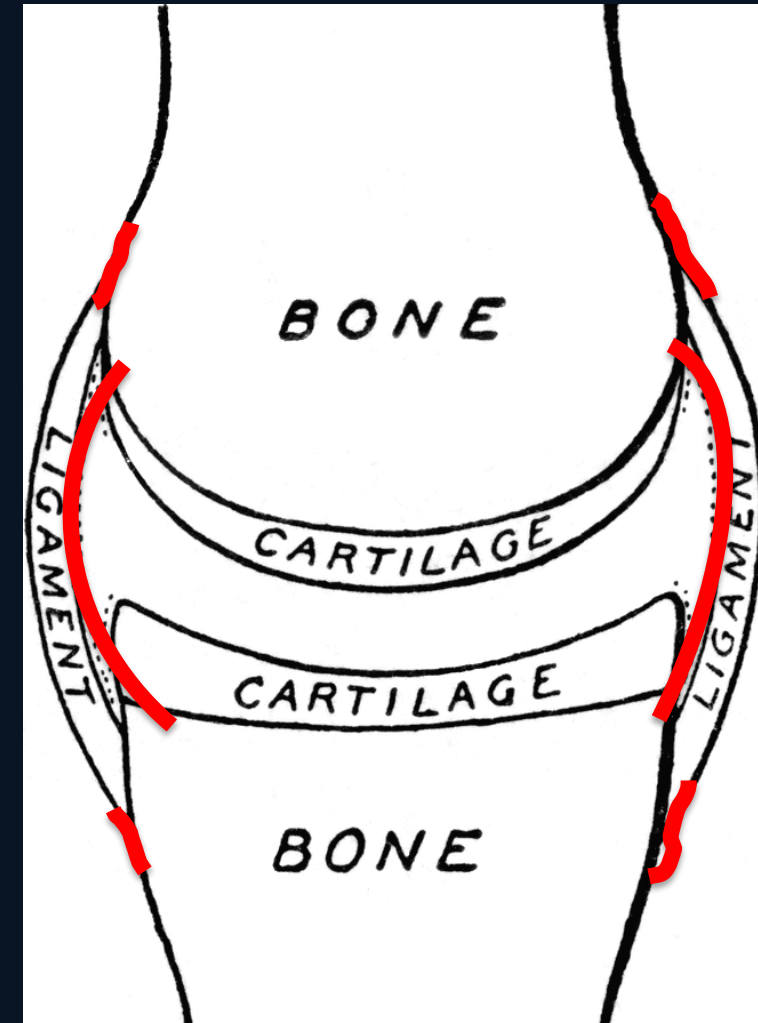
# Περιεχόμενο

- Βασικές γνώσεις
- Καθημερινά ερωτήματα

# 1. Inflammatory arthropathies vs spondyloarthropathies

Inflammatory arthropathy: inflammation of the  
**synovium**

Spondyloarthropathy: inflammation of the  
**entheses**

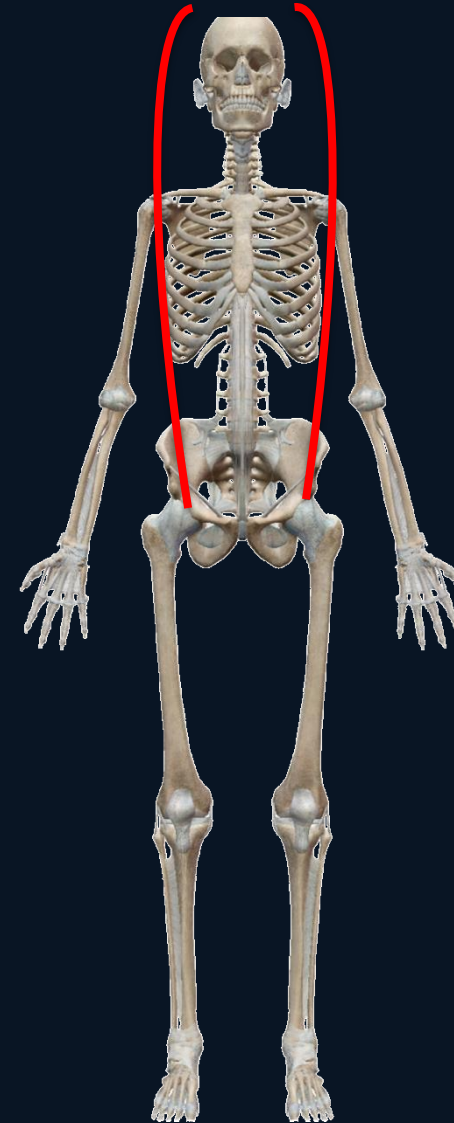


## 2. axSpA - location

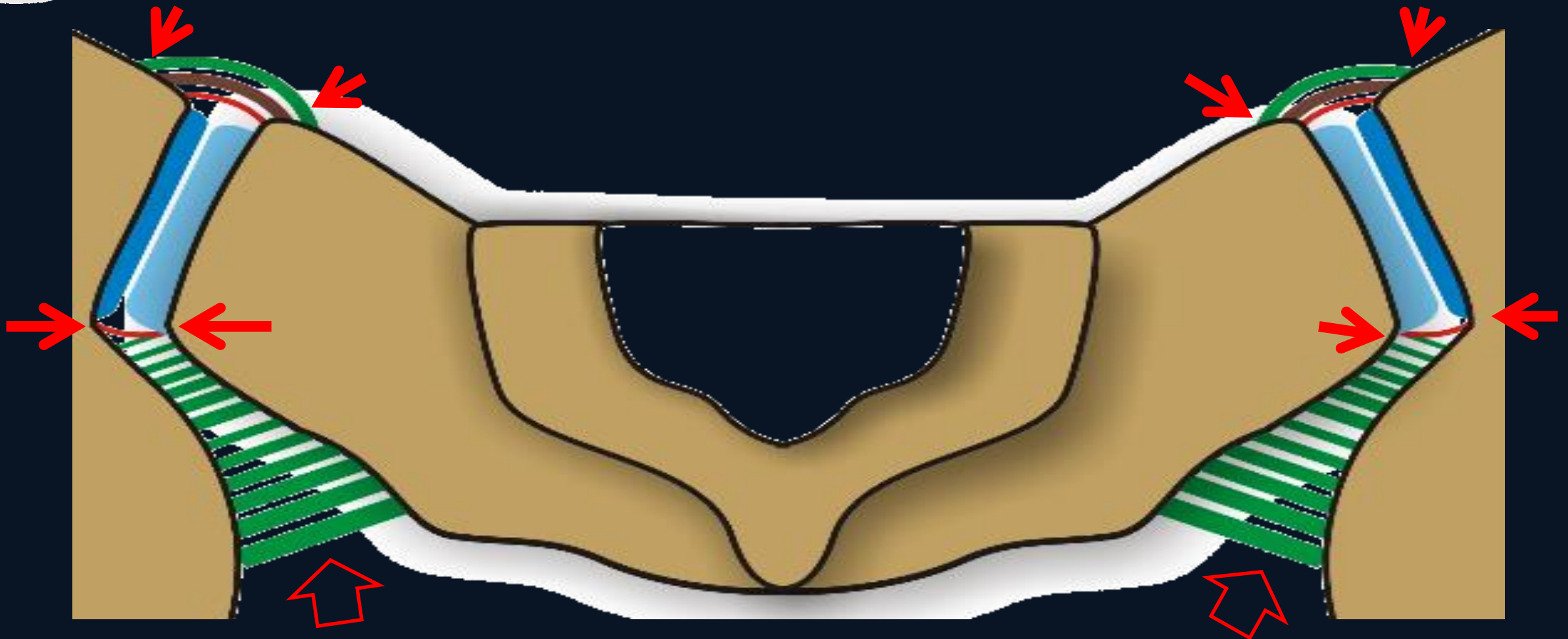
Dominant involvement of the **SIJs** and the **Spine**

**Radiographic:** Positive pelvic radiograph, sacroiliitis

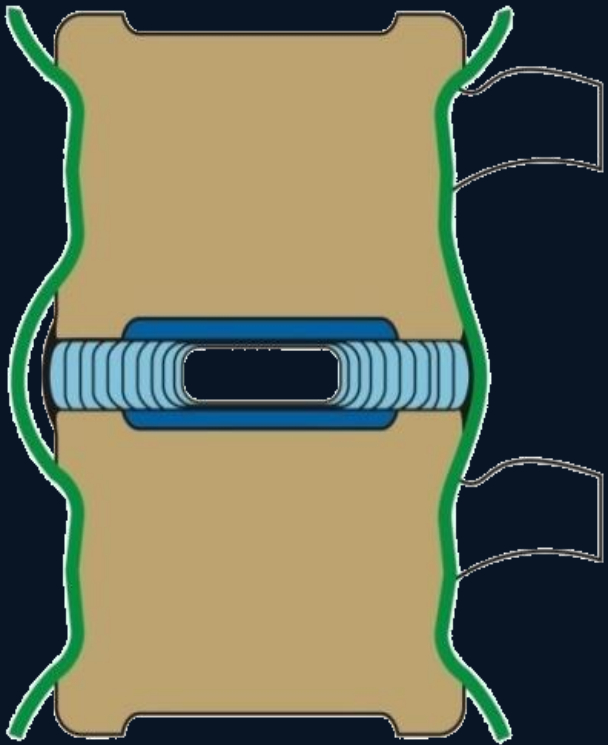
**Non radiographic:** Normal pelvic radiograph



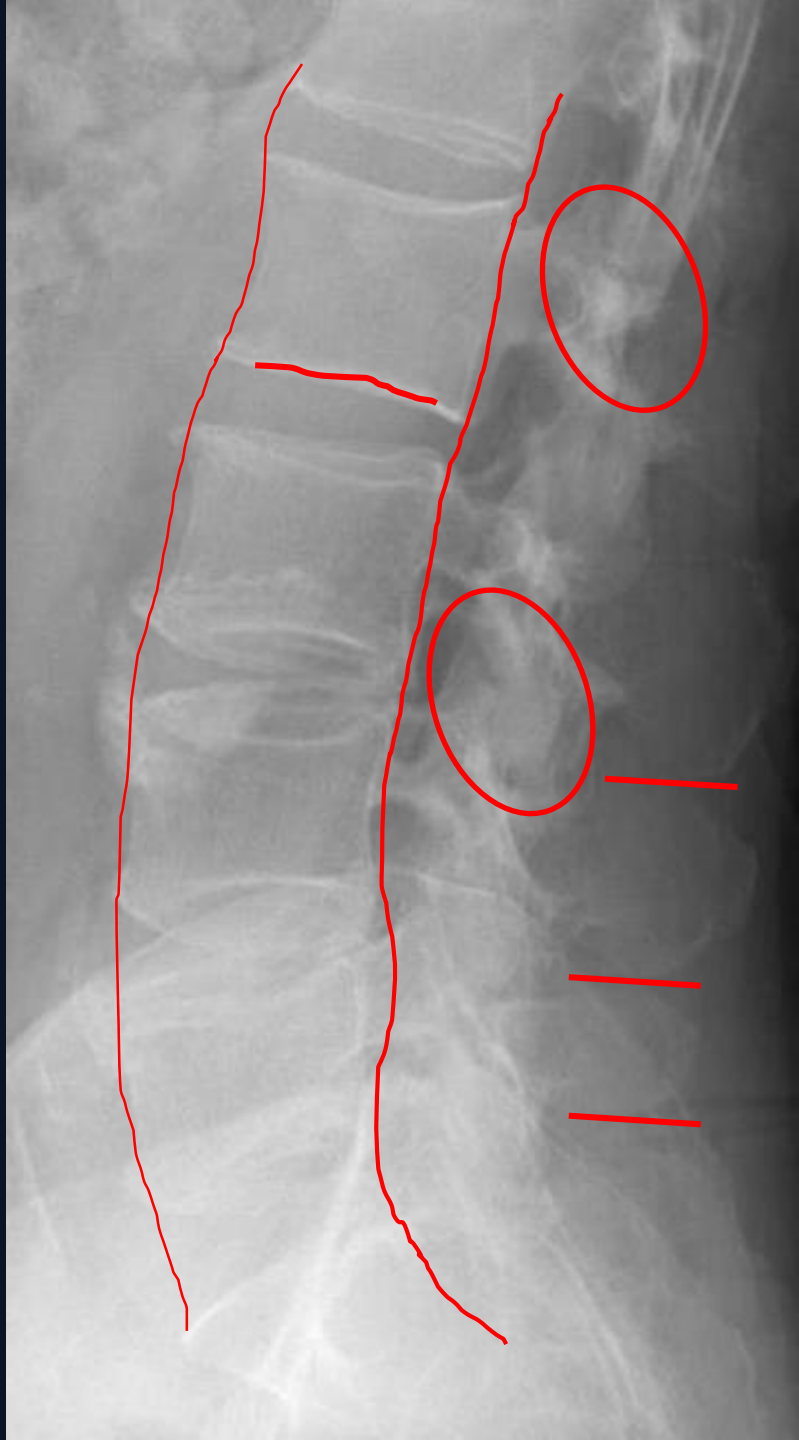
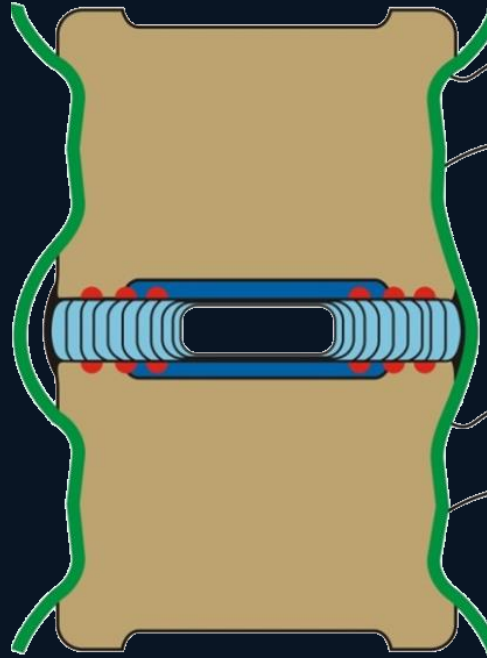
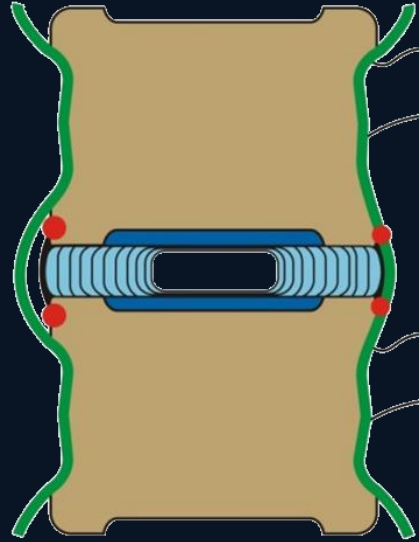
### 3. Which are the Important entheses



Iliac side: **thin** fibrocartilage 1mm, first involved  
Sacral side: **thick** hyaline cartilage 3-5mm



Lucas Meiri 2011



# 4. What is the role of imaging in axSpA?

Radiograph positive path



Sacroiliitis on radiograph  
Plus  
1 or more SpA features

**“Established” AS**

**MRI positive path**



SIJ BME on MRI  
Plus  
1 or more SpA features

**Clinical path**



HLA B27 +  
Plus  
2 or more SpA features

**Non-Radiographic SpA**

Heterogenous group

- Patients don't always progress to structural SpA
- MRI findings is an important predictor



# 5. Which is the optimum imaging protocol?

Ferguson AP SIJ: 30°- 35° cranial inclination  
5cm below ASIS





# CT

Not routinely applied

To explore incidental SIJ findings

**MPR** perpendicular and parallel

to the upper rim of the 1<sup>st</sup> sacral vertebral body



CT

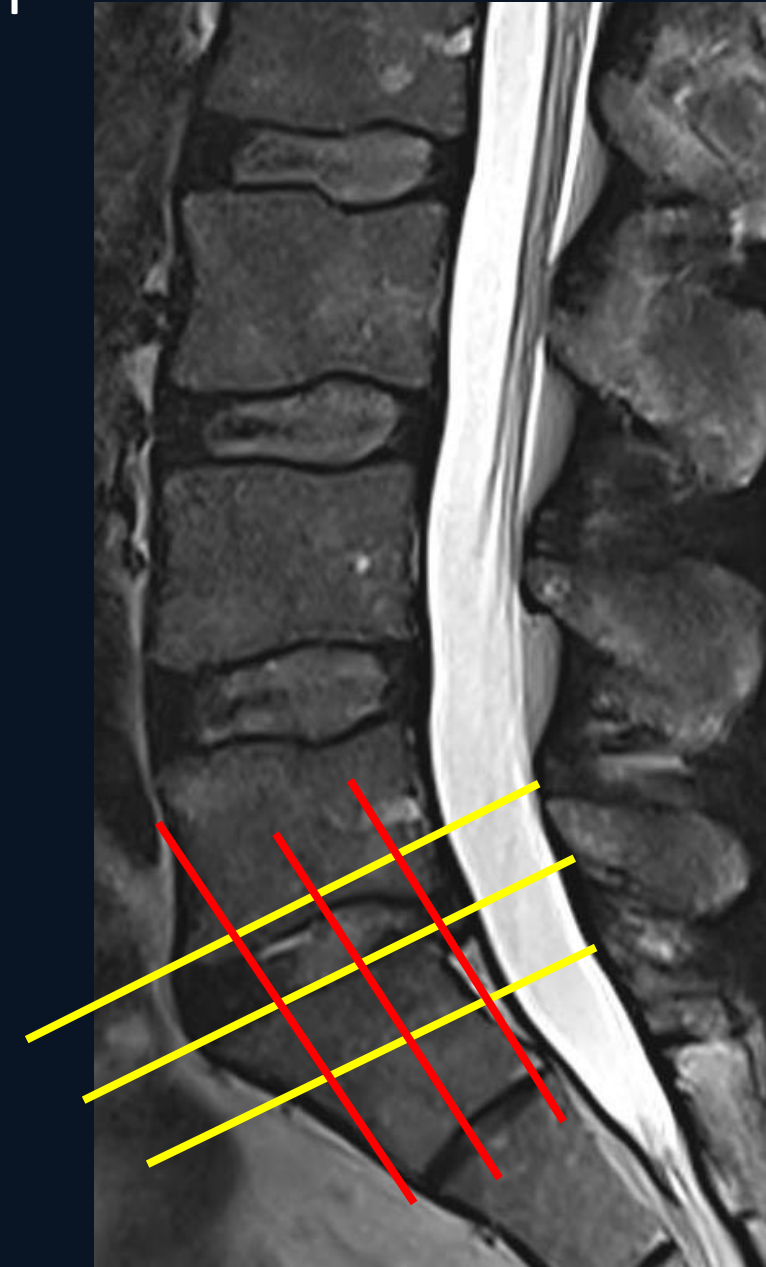
Oblique coronal

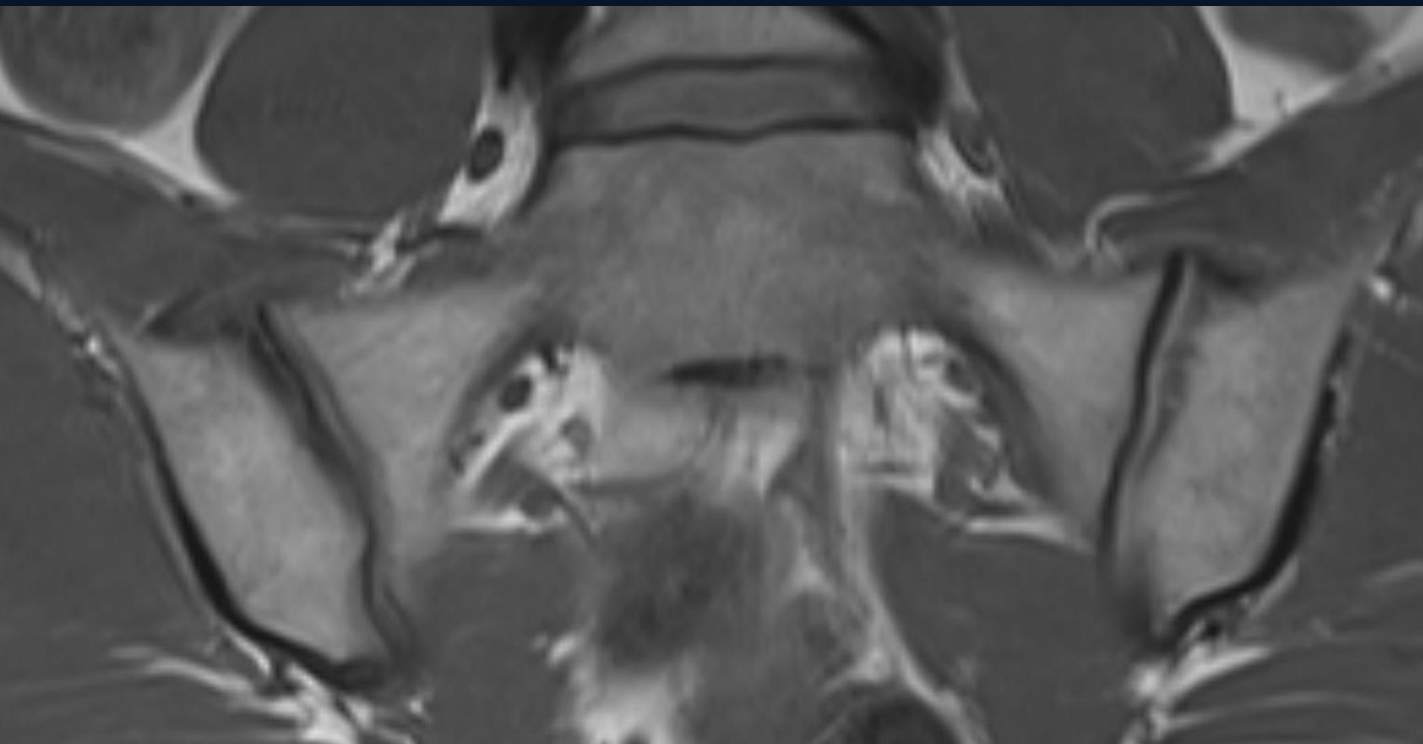
Oblique axial



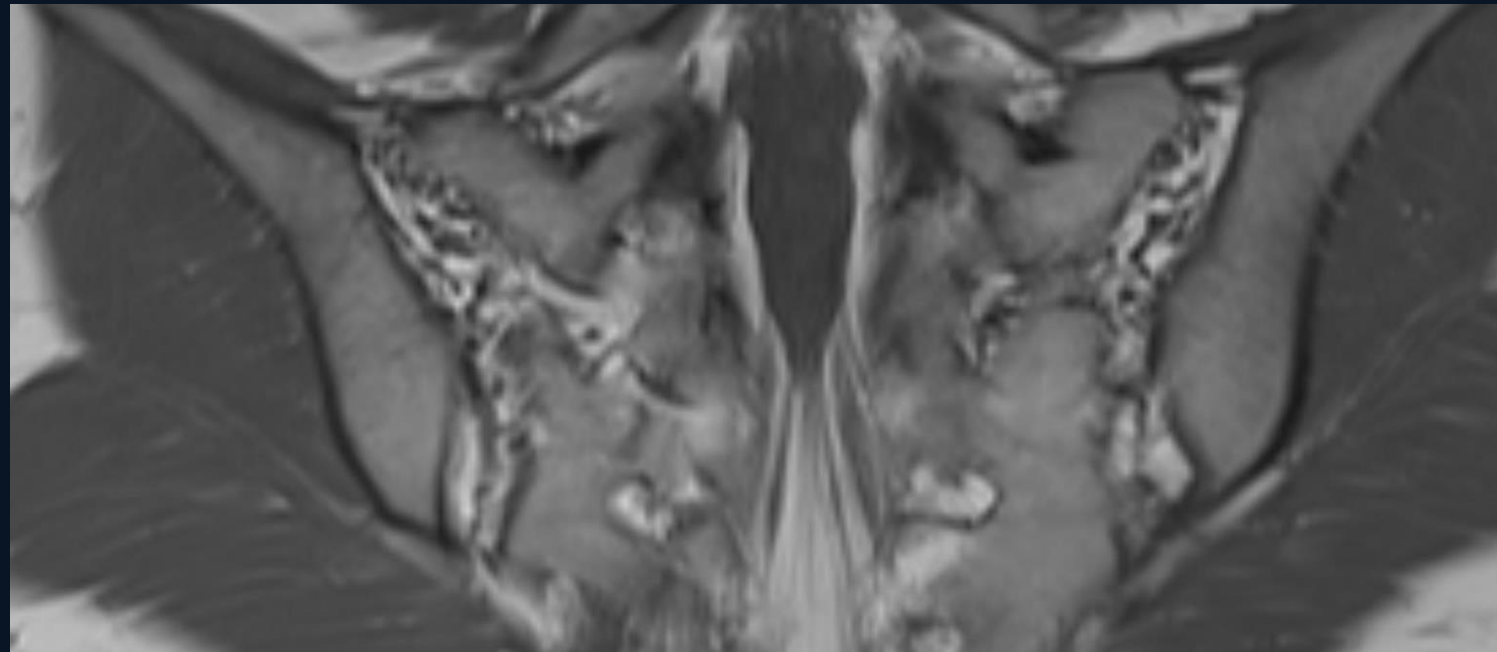
**MRI:** perpendicular and parallel to the upper rim  
of the 1<sup>st</sup> sacral vertebral body

- *Oblique coronal*
  - *T1-w*
  - *STIR*
- *Oblique axial*
  - *FS PD/T2 or STIR*

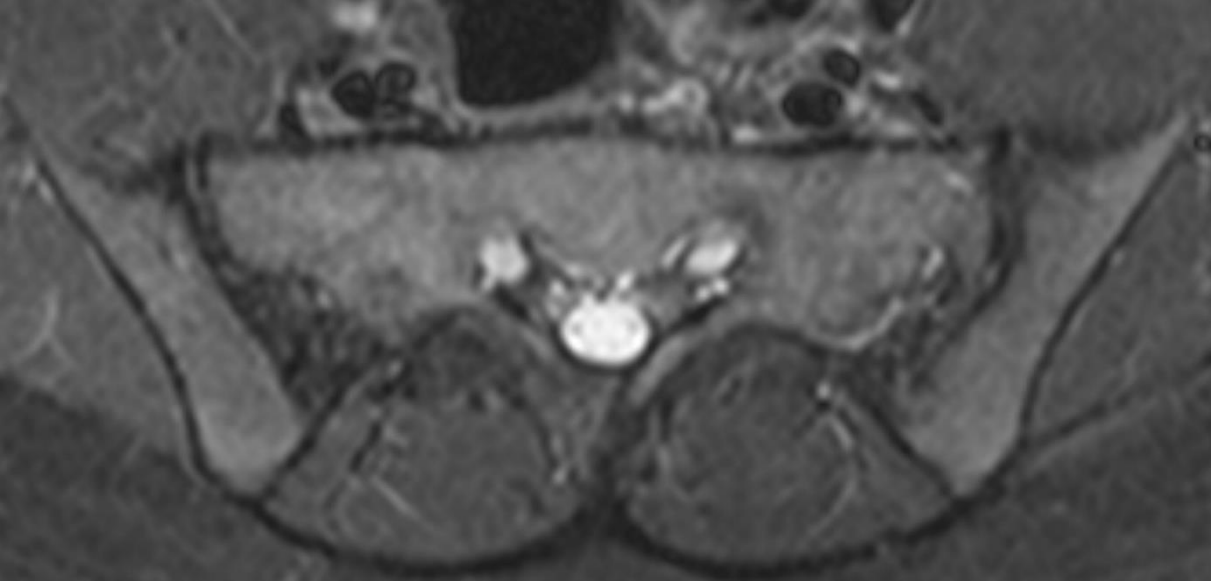




Oblique coronal T1







Oblique axial

Normal SIJ

STIR



Oblique coronal

## 6. Which information is provided by each imaging modality?

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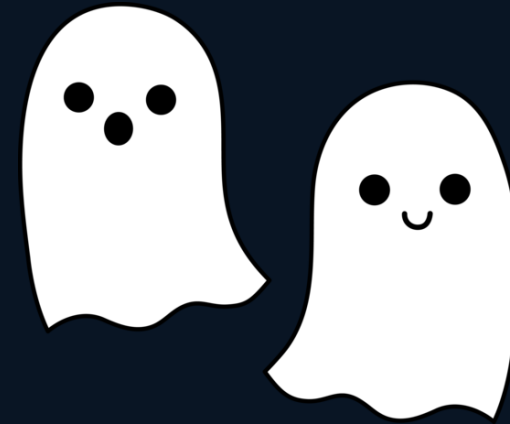
**XR:** chronic or structural lesions

**CT:** .. .. .



**MRI:** chronic and active lesions





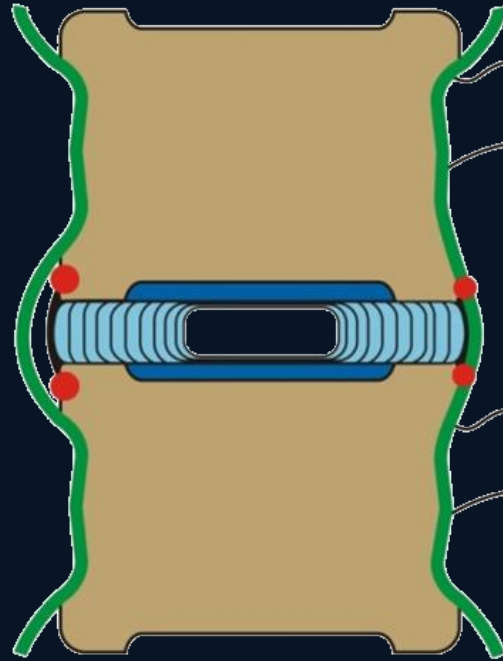
“Ghost” sign



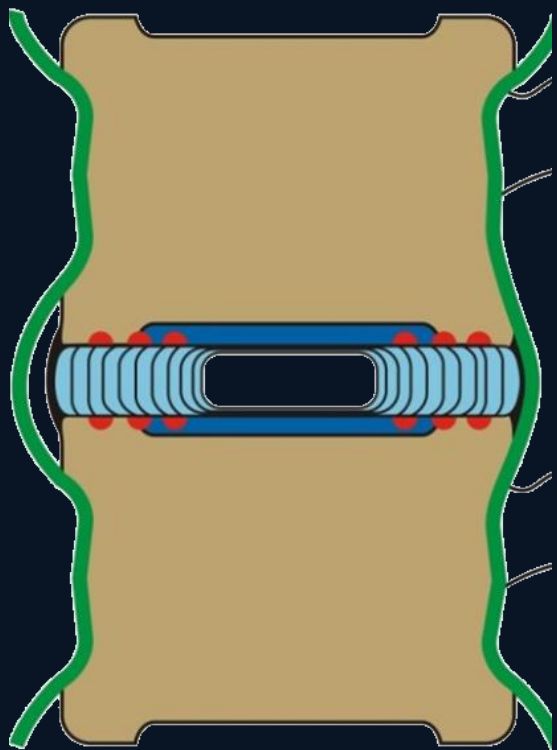
# Which are the findings in the Spine?



Romanus lesion

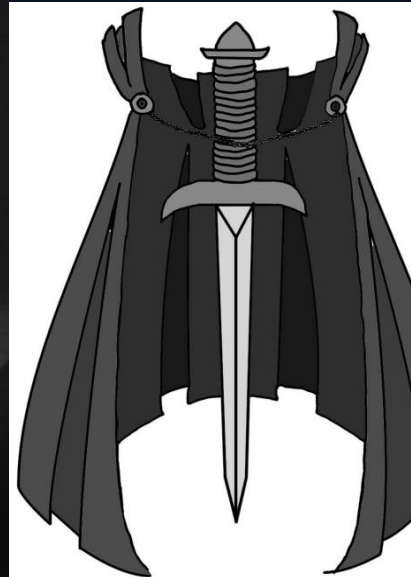


Aseptic spondylodiscitis  
(Andersson's lesion)





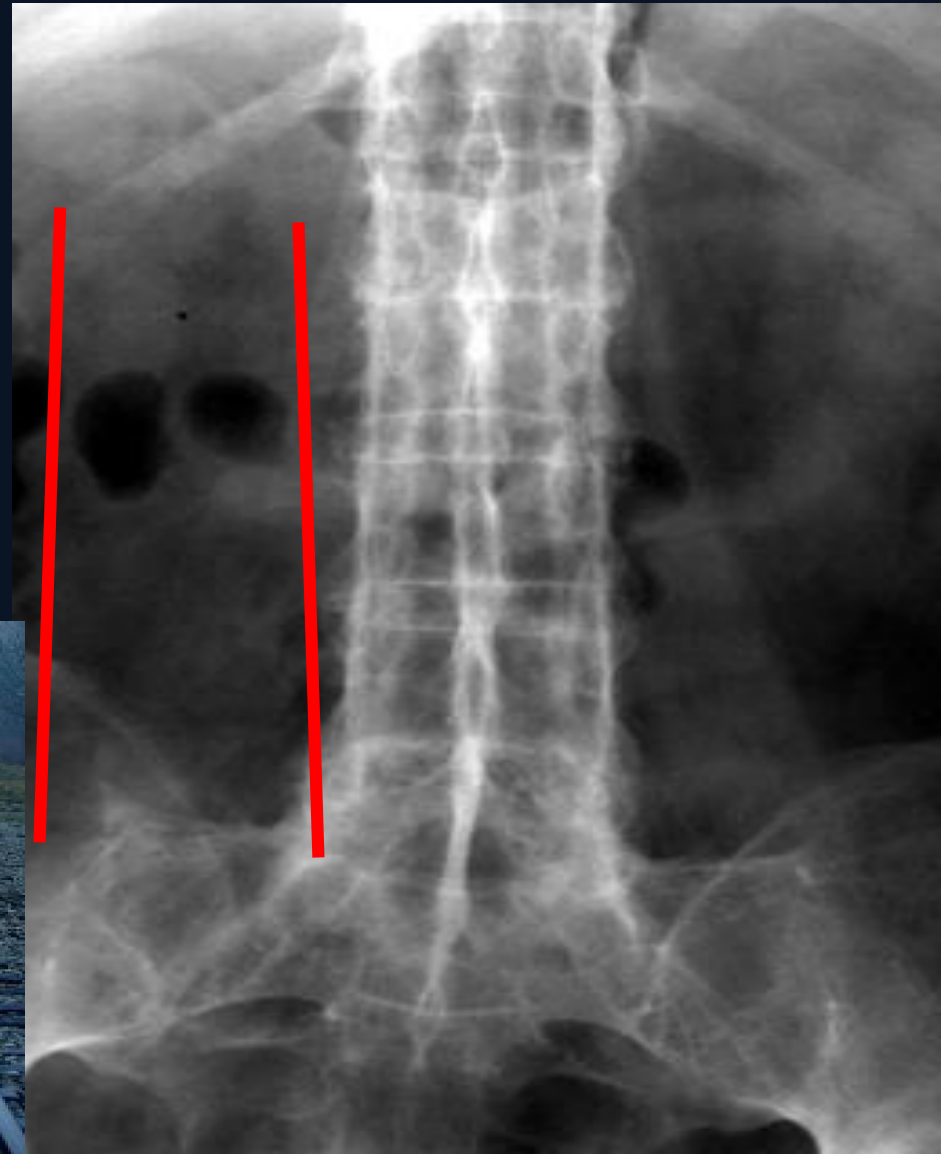
# “Dagger sign” : ossification of posterior interspinous ligaments



Syndesmophytes



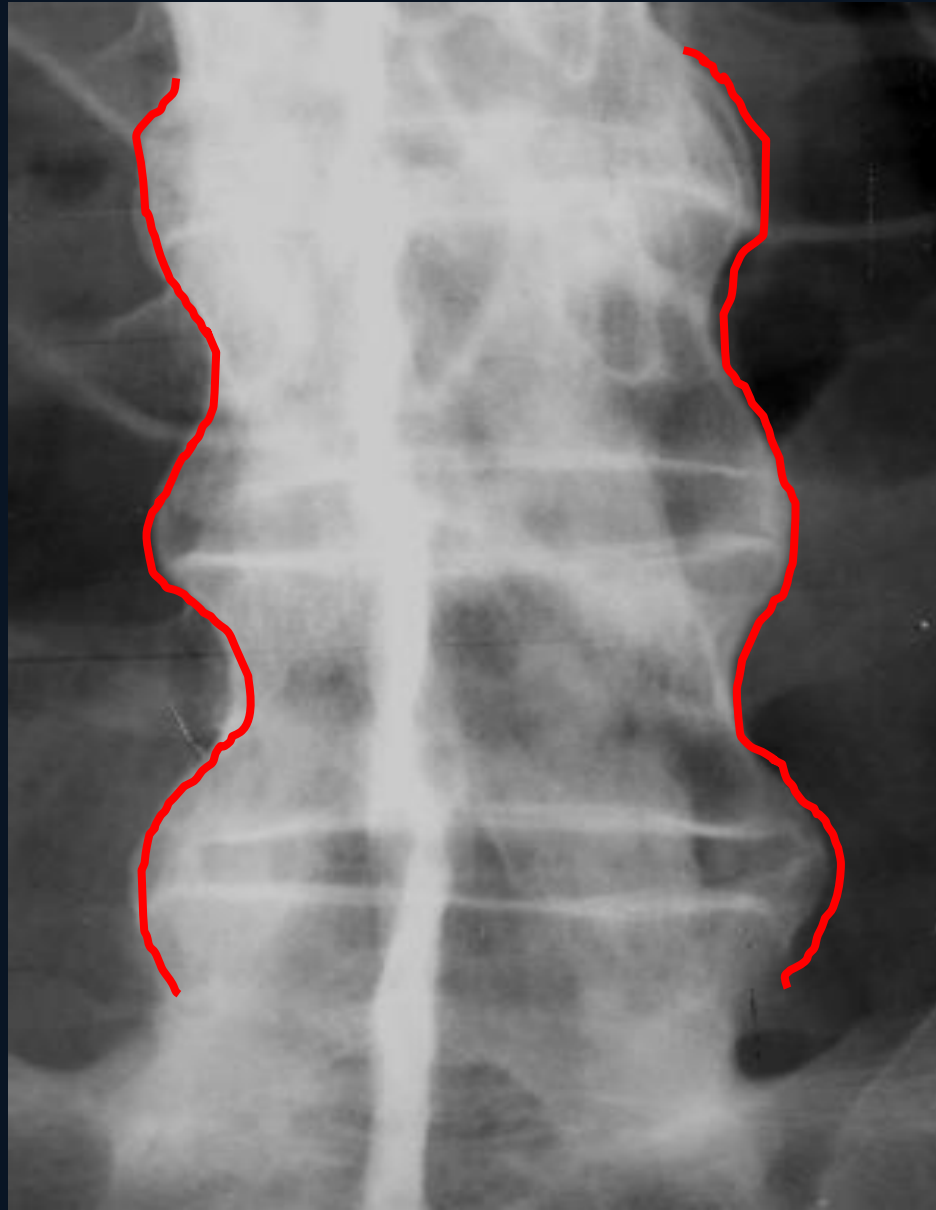
# “Trolley track” sign: ossification of facet joints





# Bamboo spine

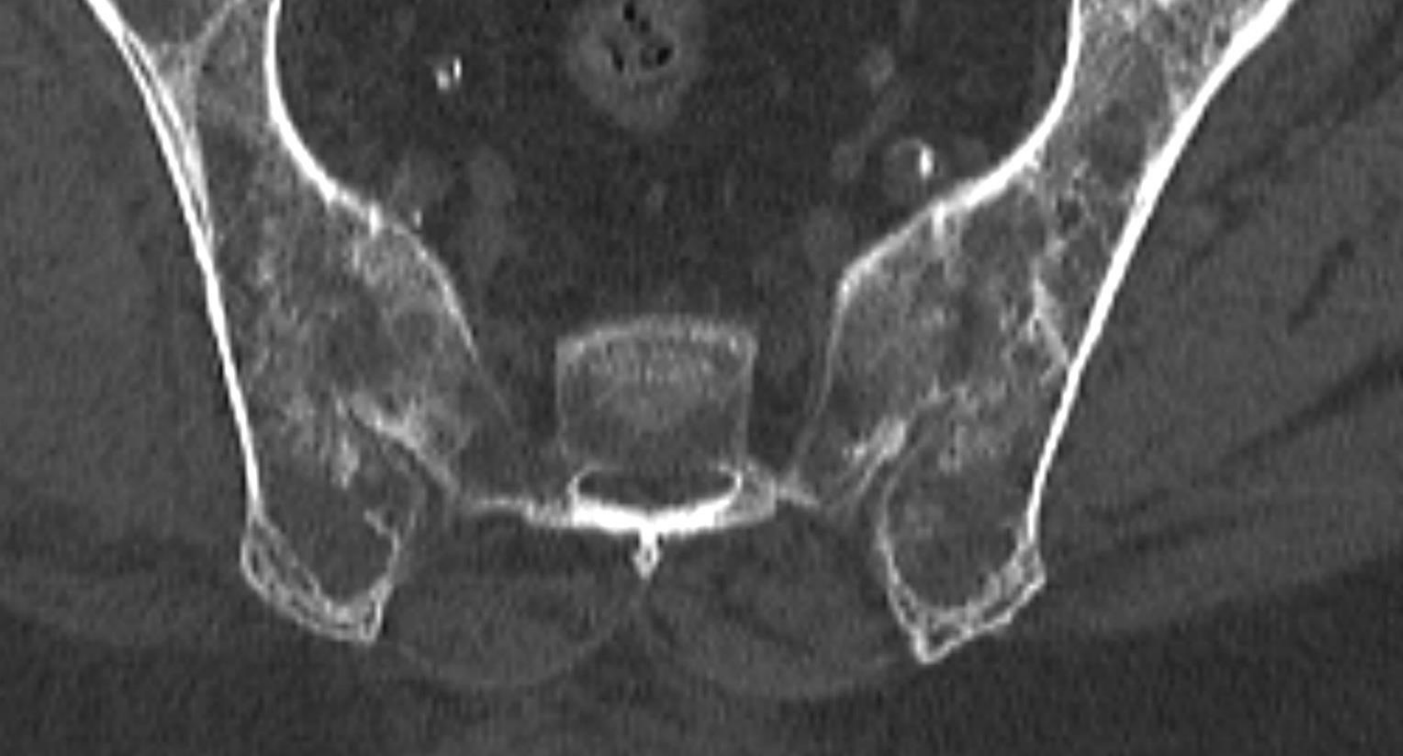
“Ghost” SIJ





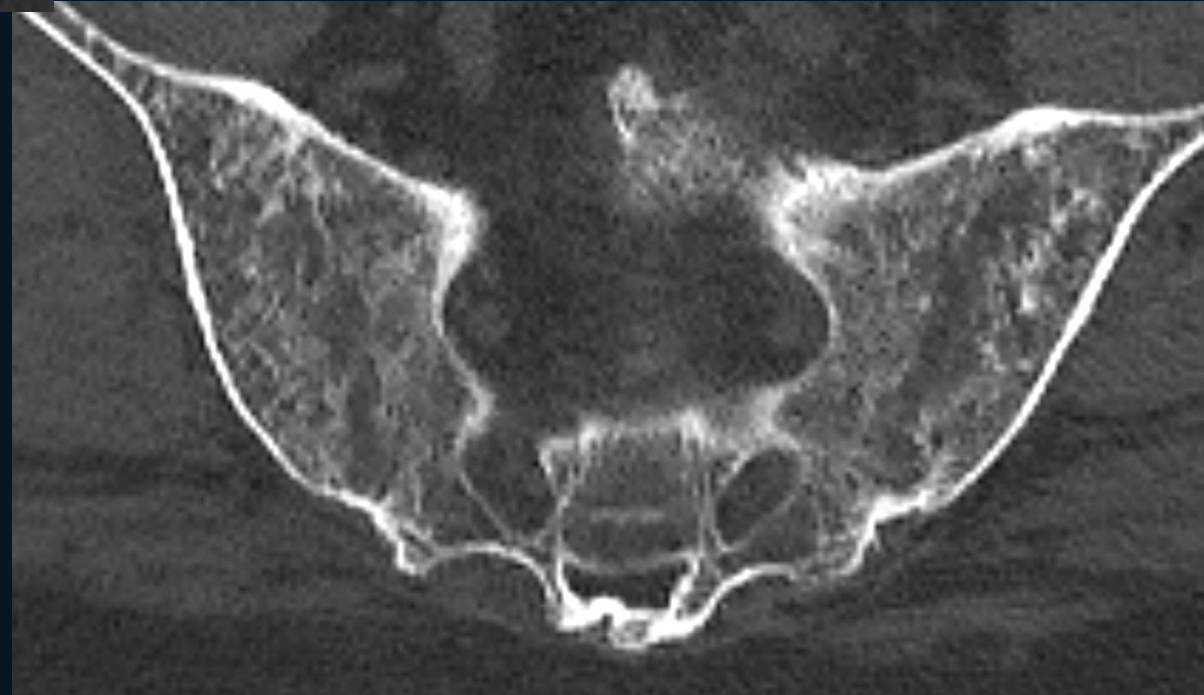
CT

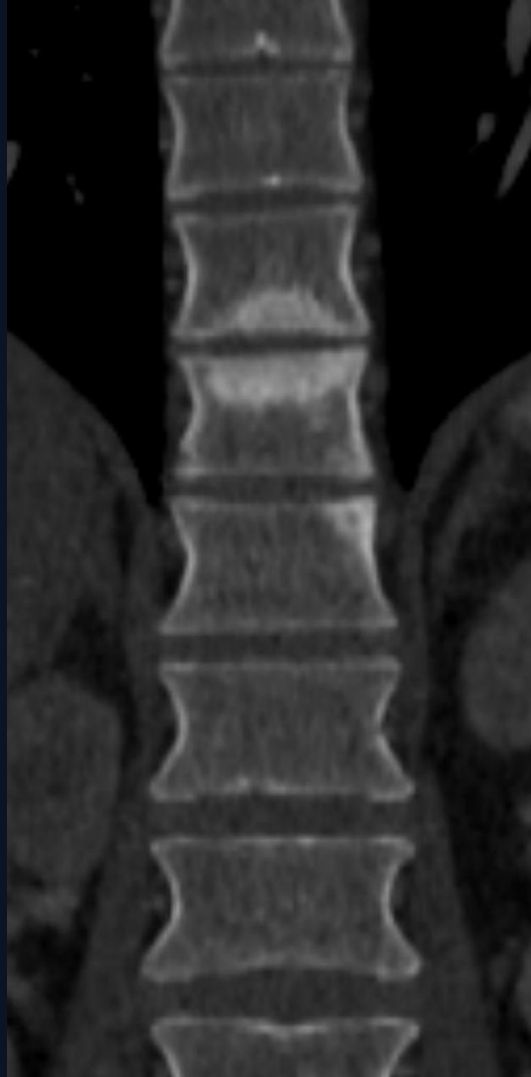




Ankylosis

CT



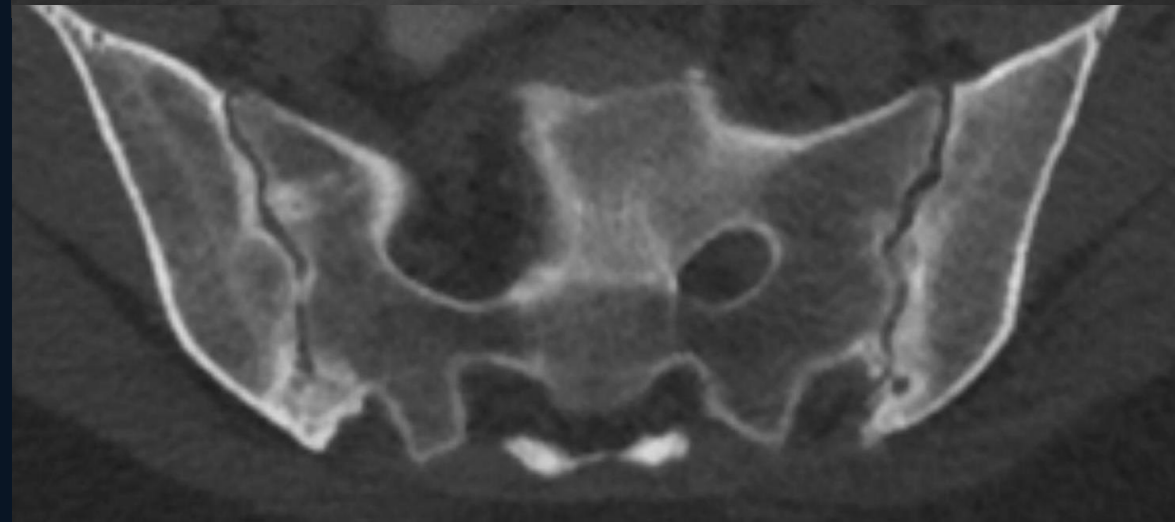
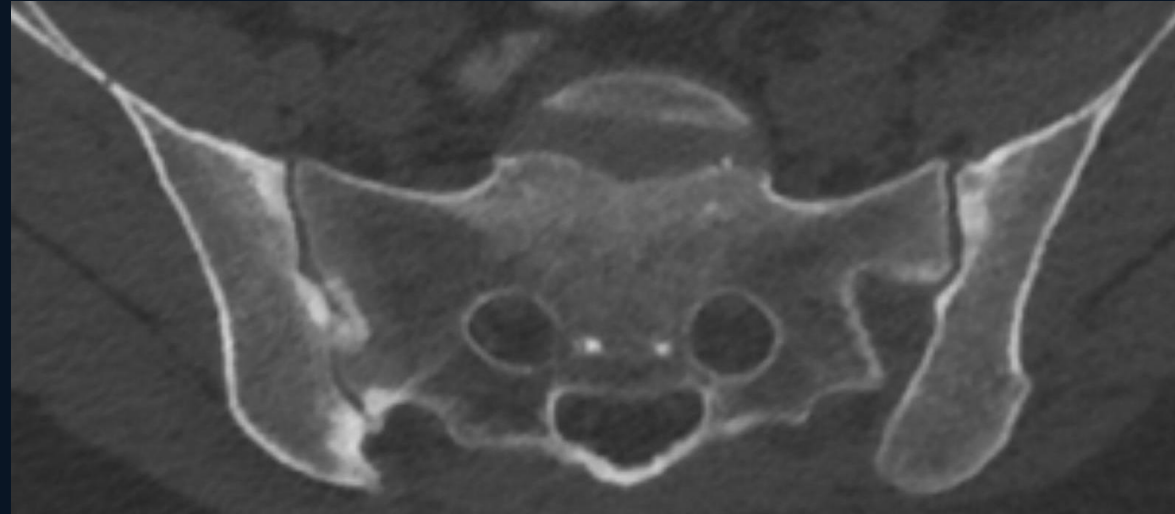


*Old osteitis (Romanus)*

*“shiny corners”*

*Subarticular sclerosis SIJ*

*Erosions, ankylosis SIJ*

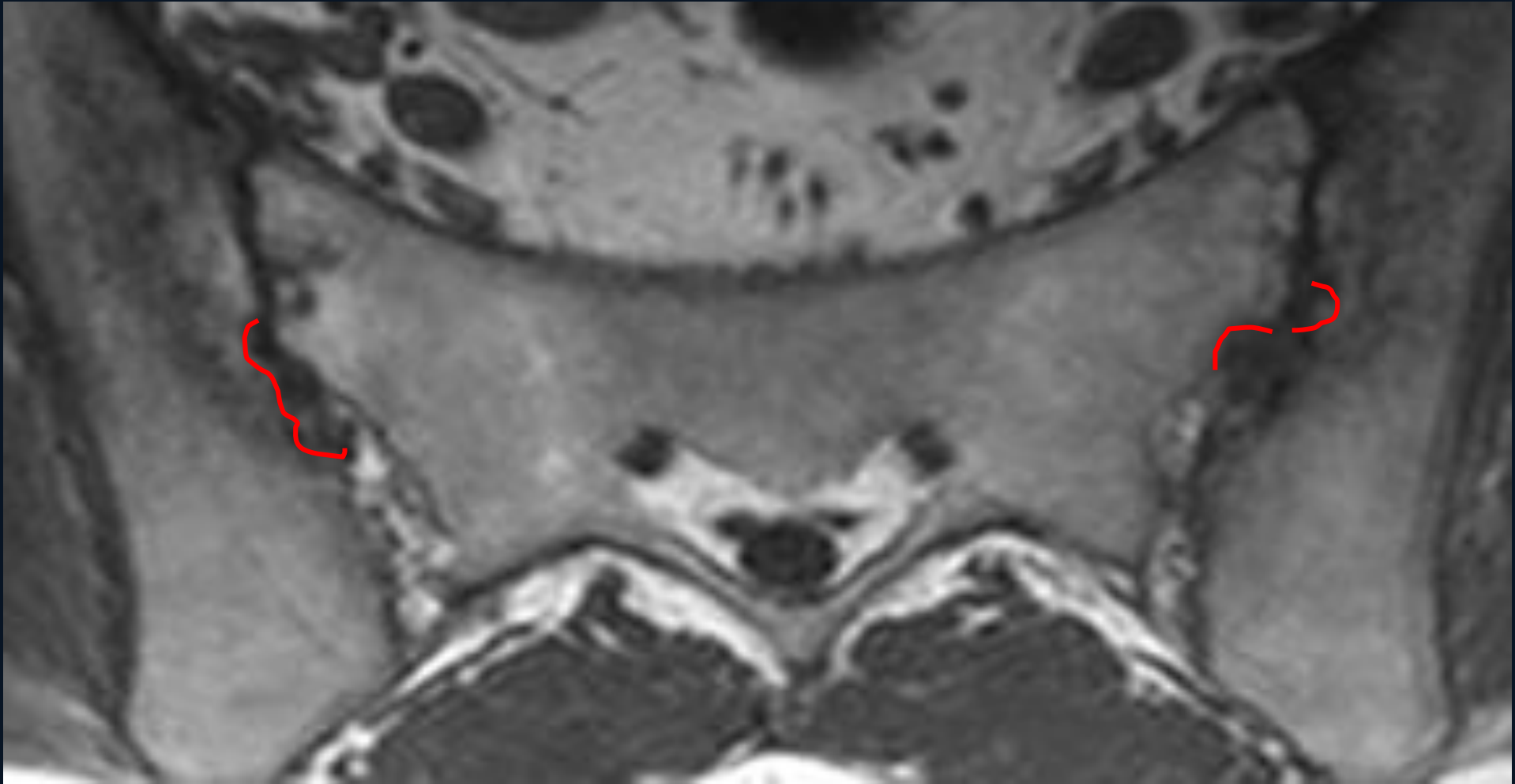


# Structural changes on MR imaging

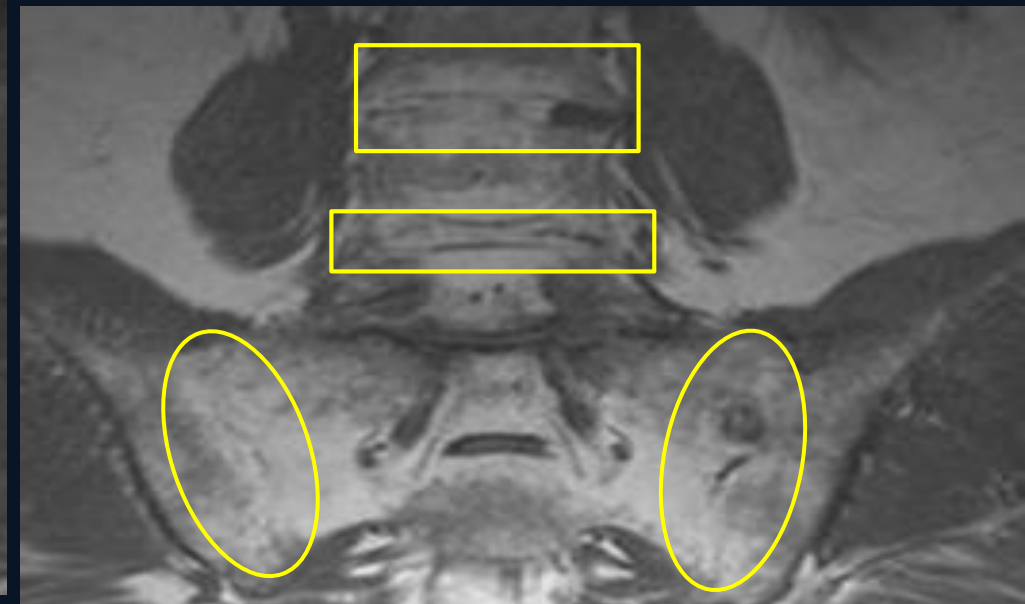
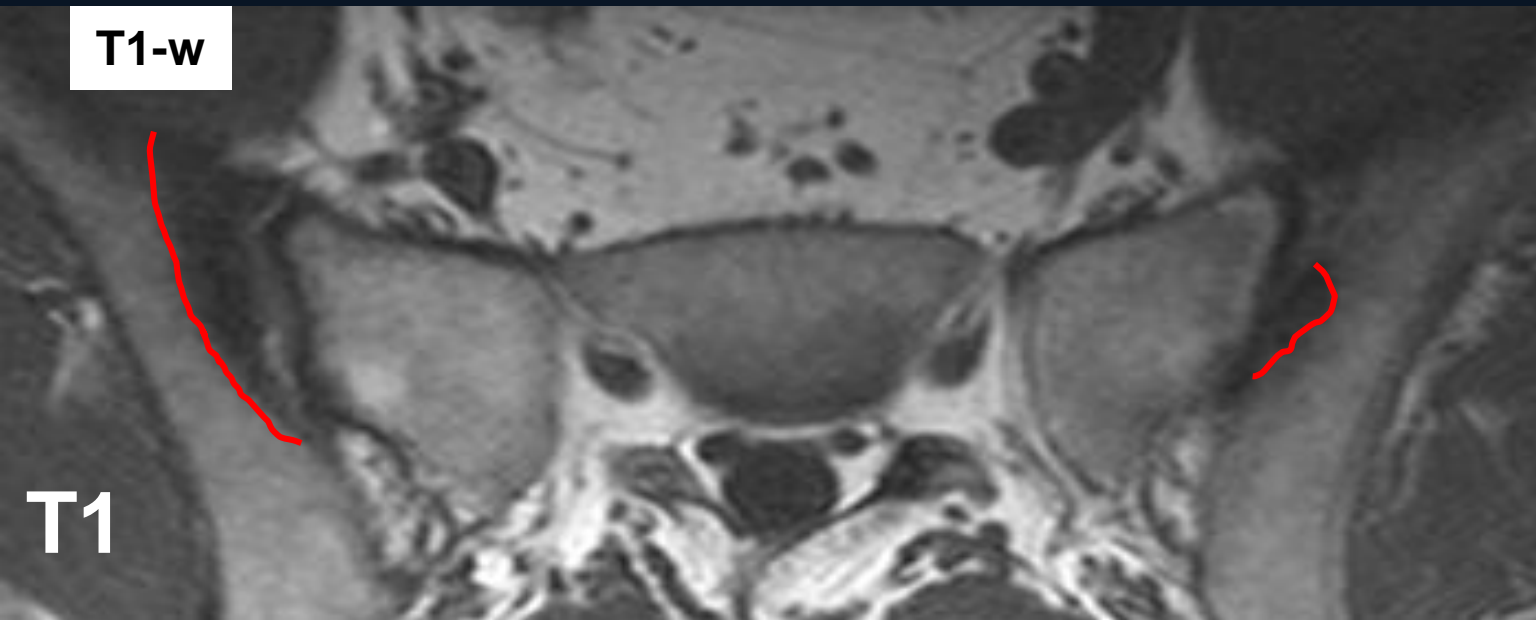
## Erosions

Confluent lesions cause a false widening

T1



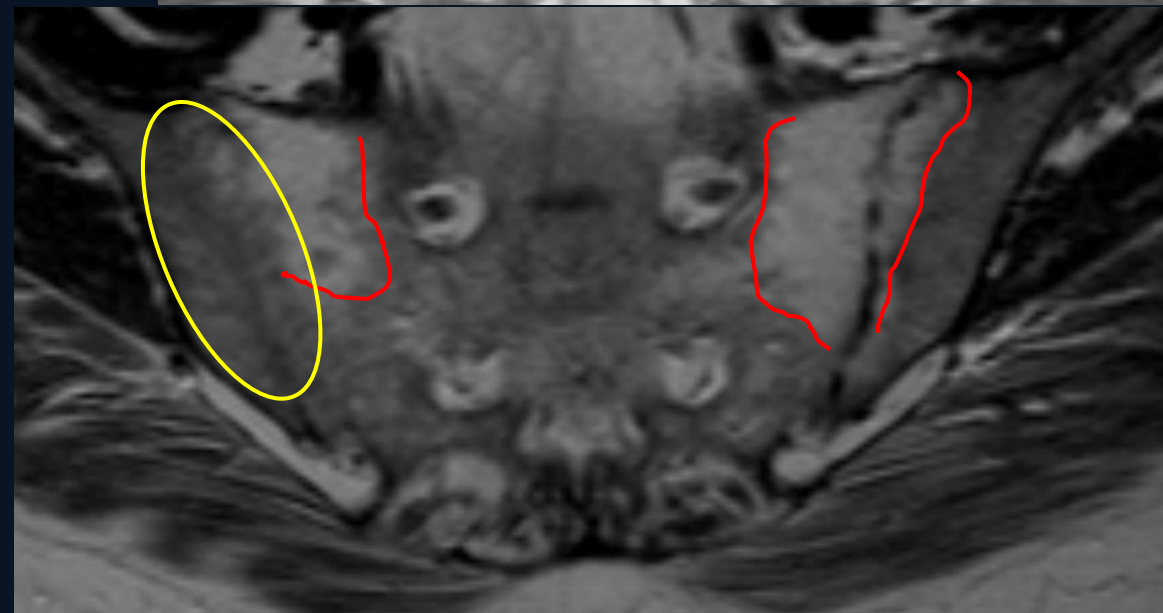




### Subarticular sclerosis

- Low SI on T1-w/STIR, not enhancing
- Typically extends >5mm from the joint surface

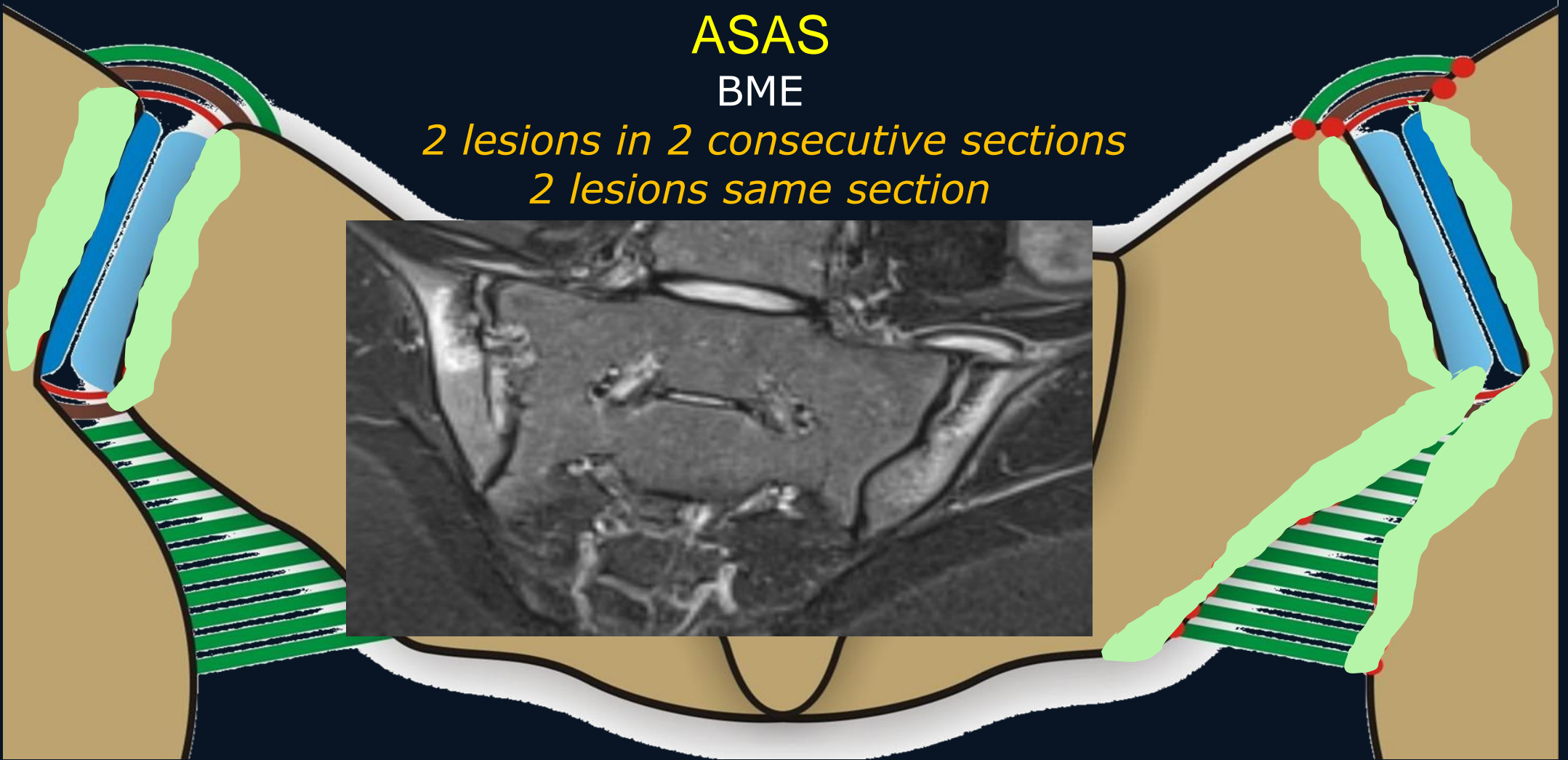
### Fatty metaplasia / ankylosis



# ASAS

BME

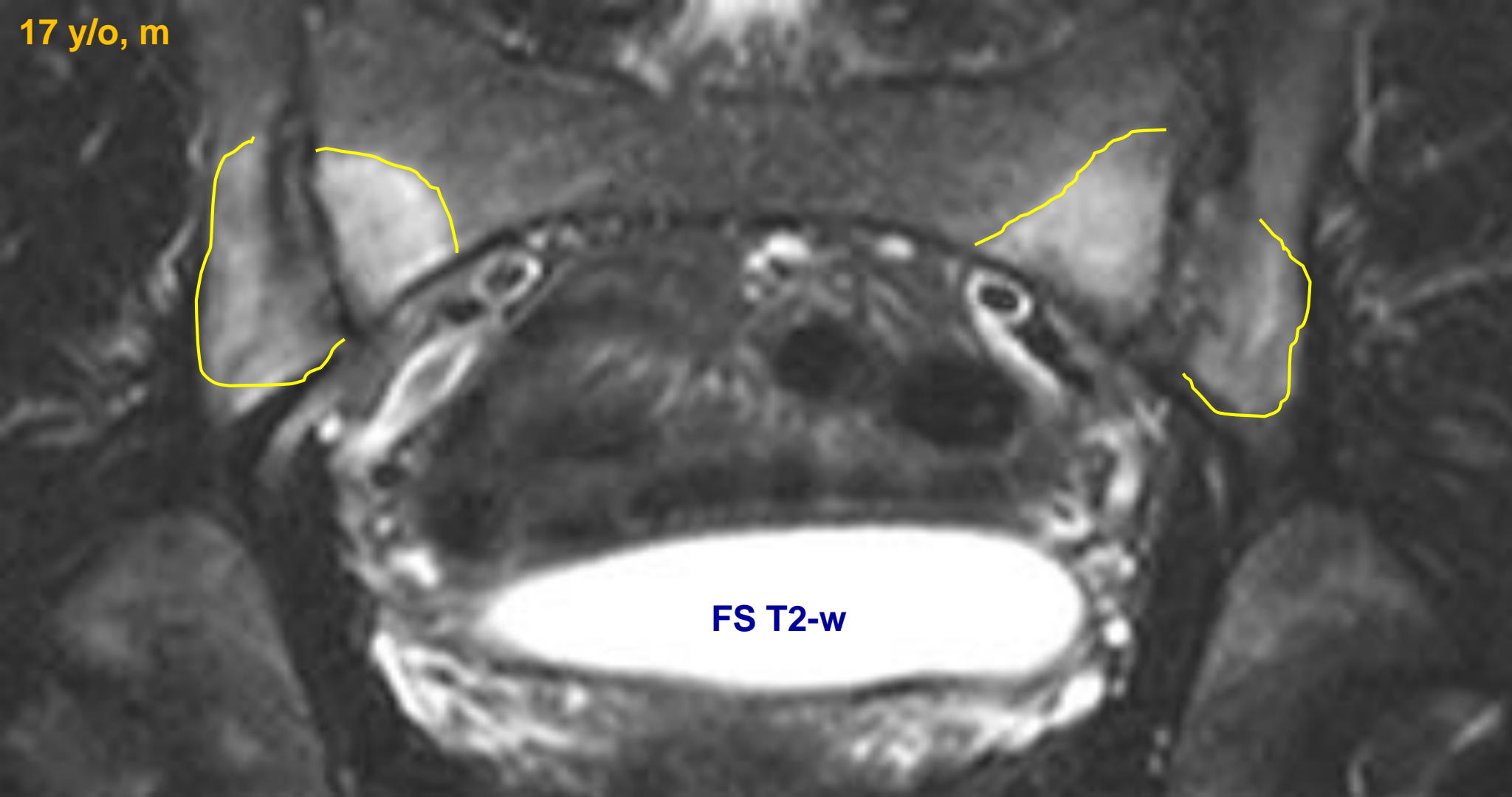
*2 lesions in 2 consecutive sections  
2 lesions same section*



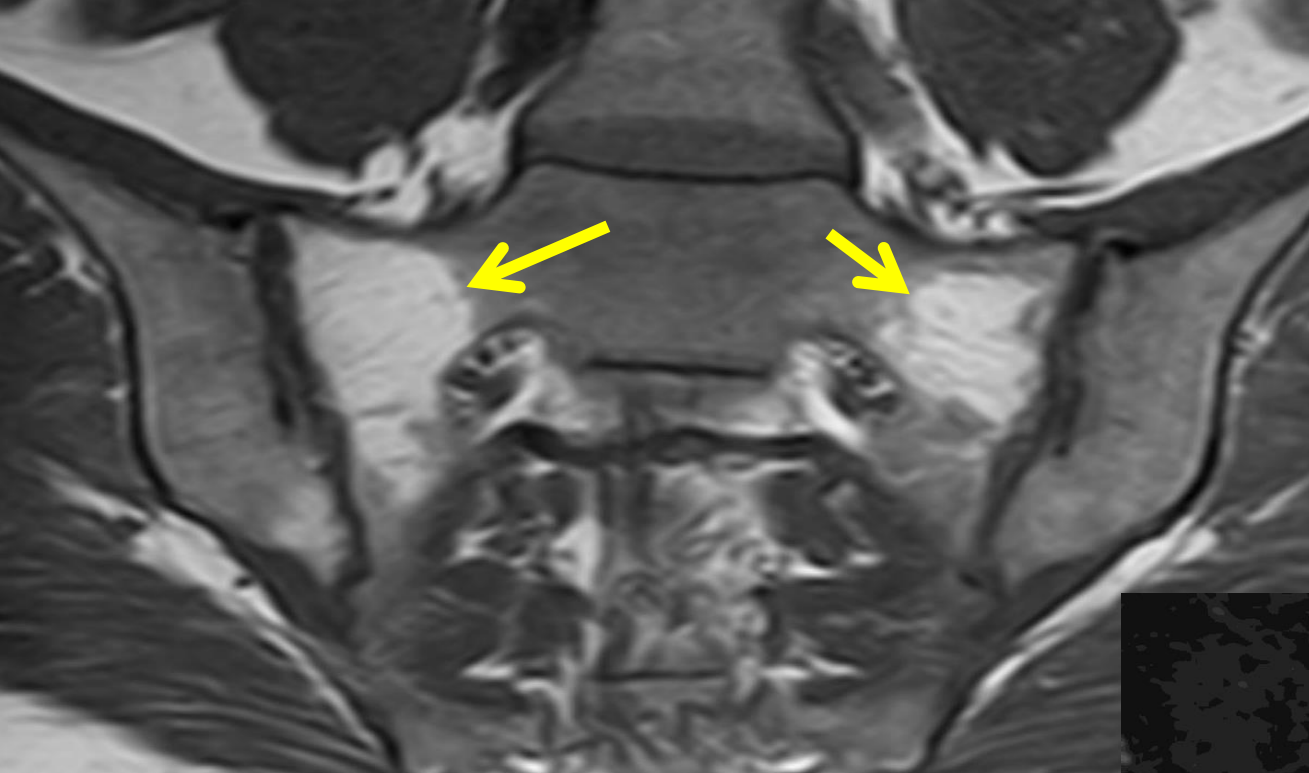
Synovitis, enthesitis, capsulitis, chronic lesions **CAN NOT** be used as diagnostic criteria



17 y/o, m



High SI on fluid sensitive sequences



30y

Pregnant 26w

Chronic and active lesions

Be aware of osteitis condensans ilii

T1-w

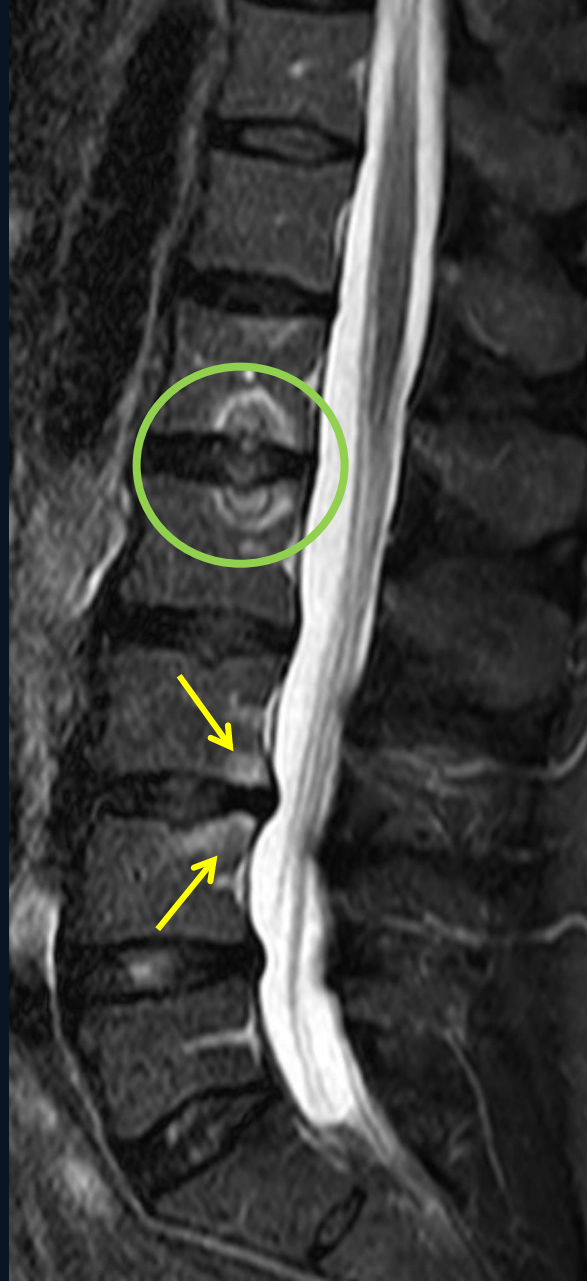


STIR

Romanus lesions: 67% of pts with axSpA



Non radiographic

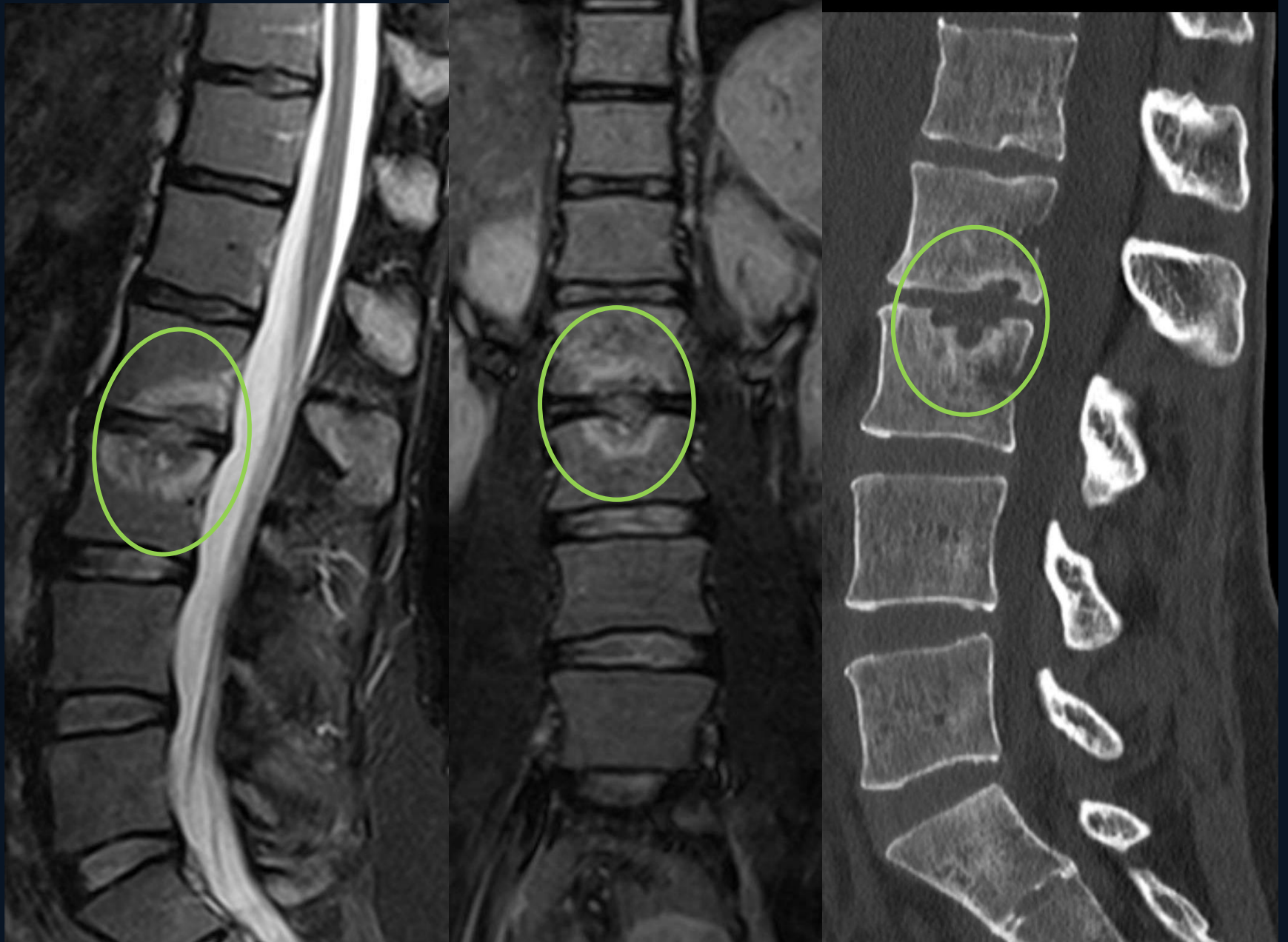




# Andersson lesions: Erosions within intervertebral spaces

33% of pts with Spa

Specificity 59%

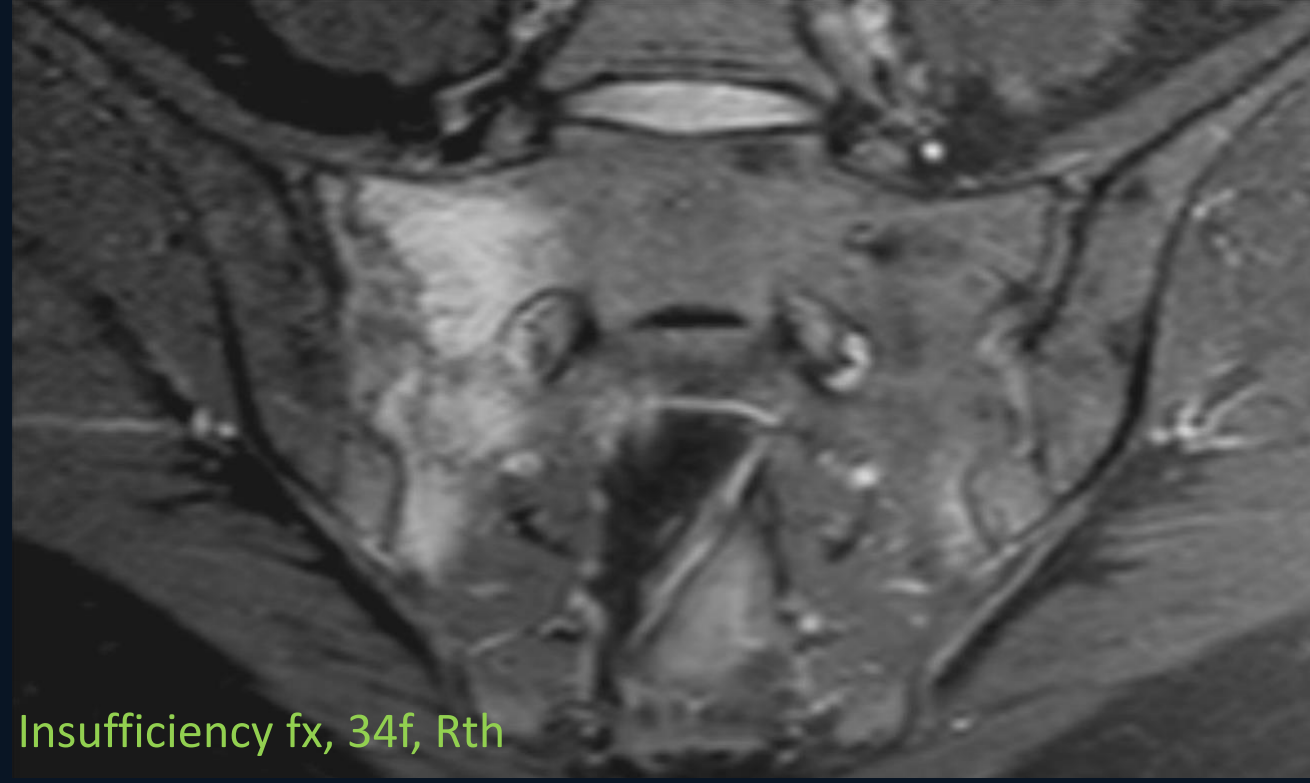
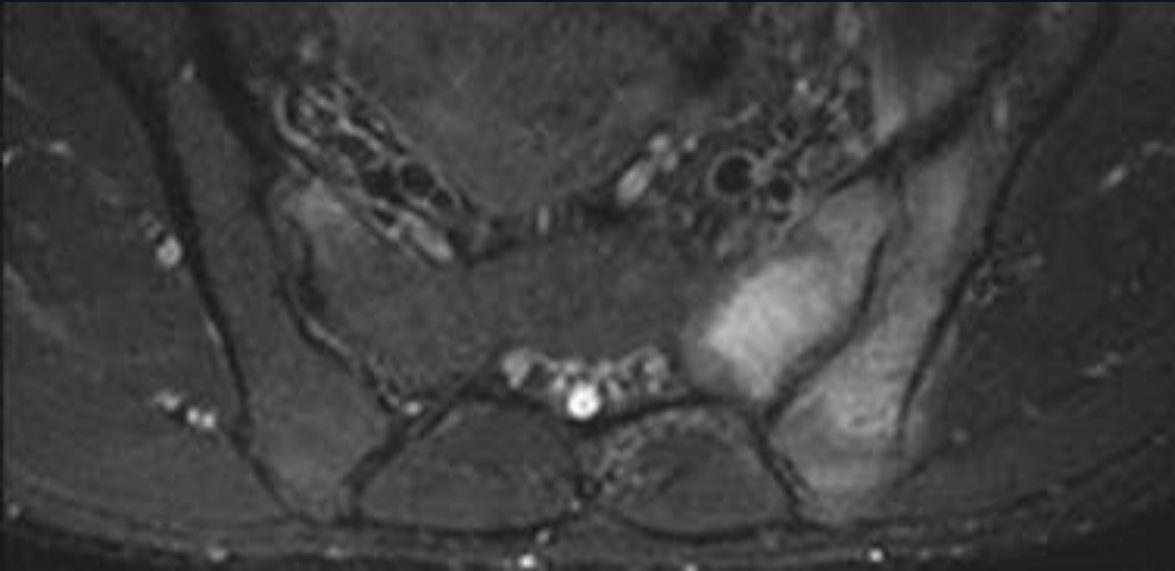


# 7. Mimickers

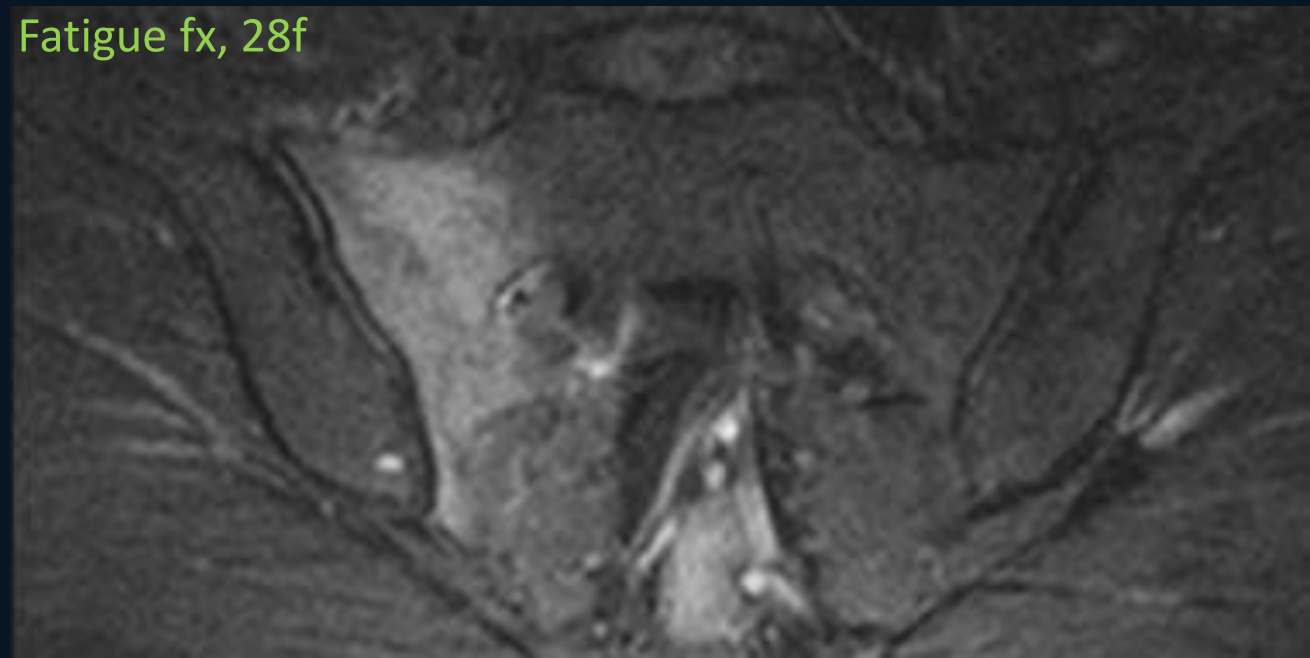


- Insufficiency fxs, fatigue fxs
- Recent pregnancy / condensans illii
- Infectious sacroiliitis
- MODIC changes and fatty islands in the spine

Infection, 34m

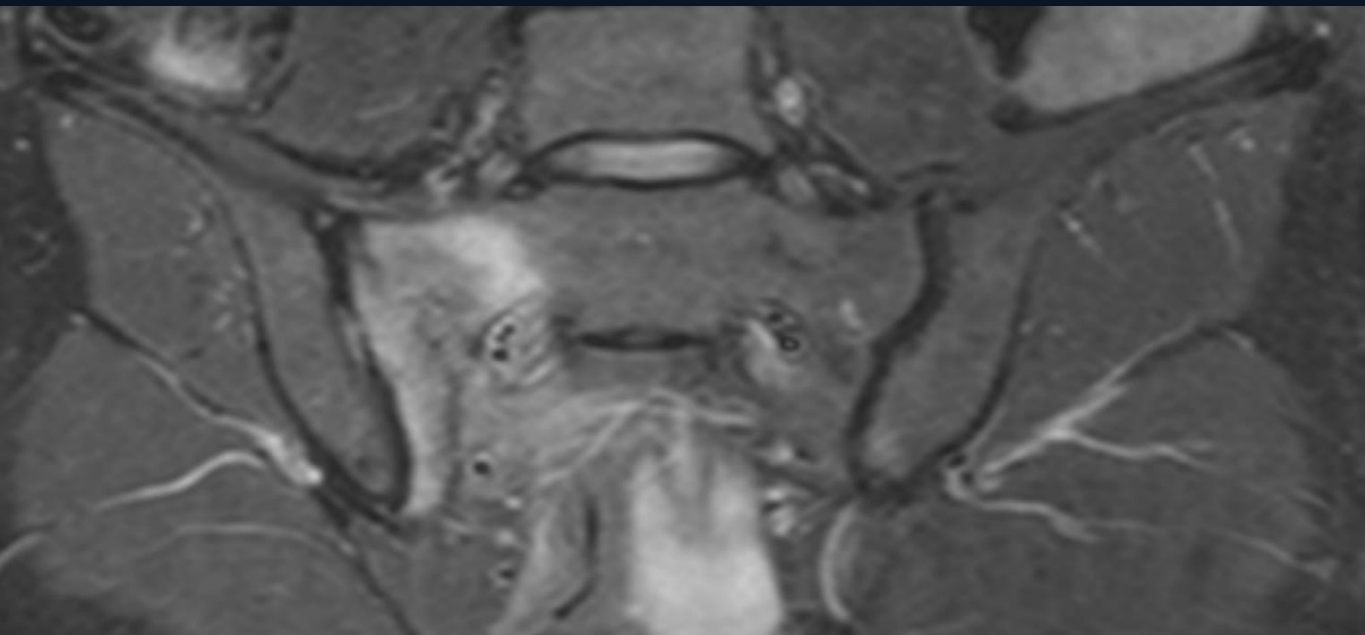


Insufficiency fx, 34f, Rth



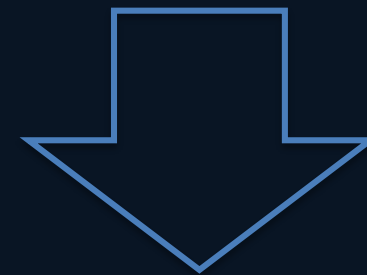
Fatigue fx, 28f

# Mimickers

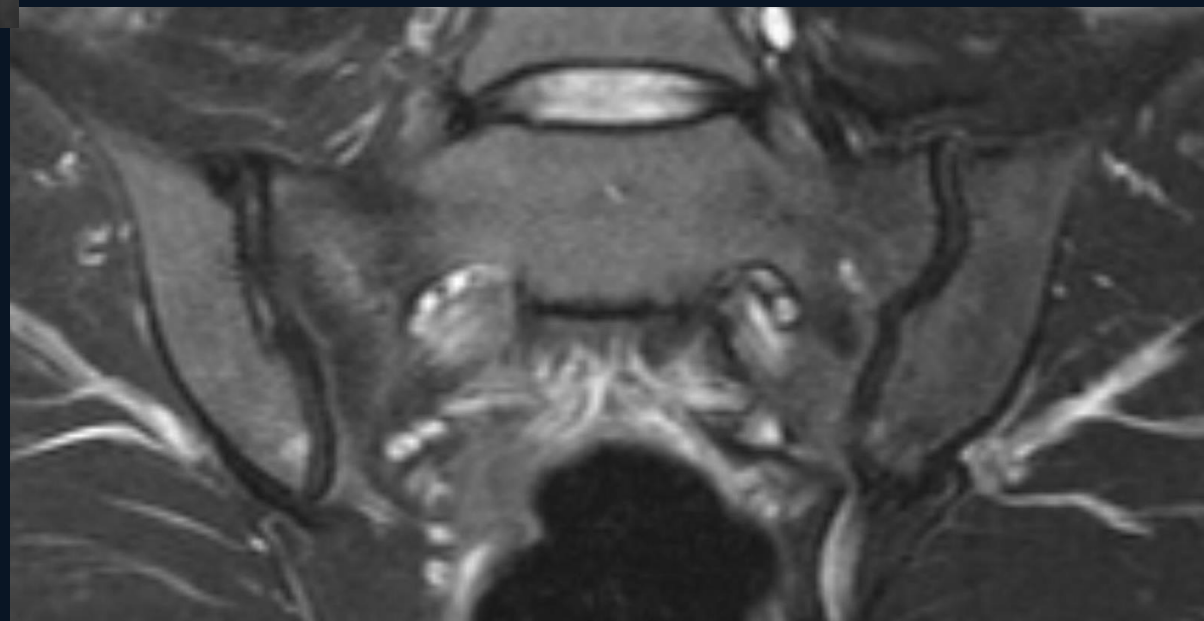


Insufficiency and fatigue fx, 37f

Osteopenia

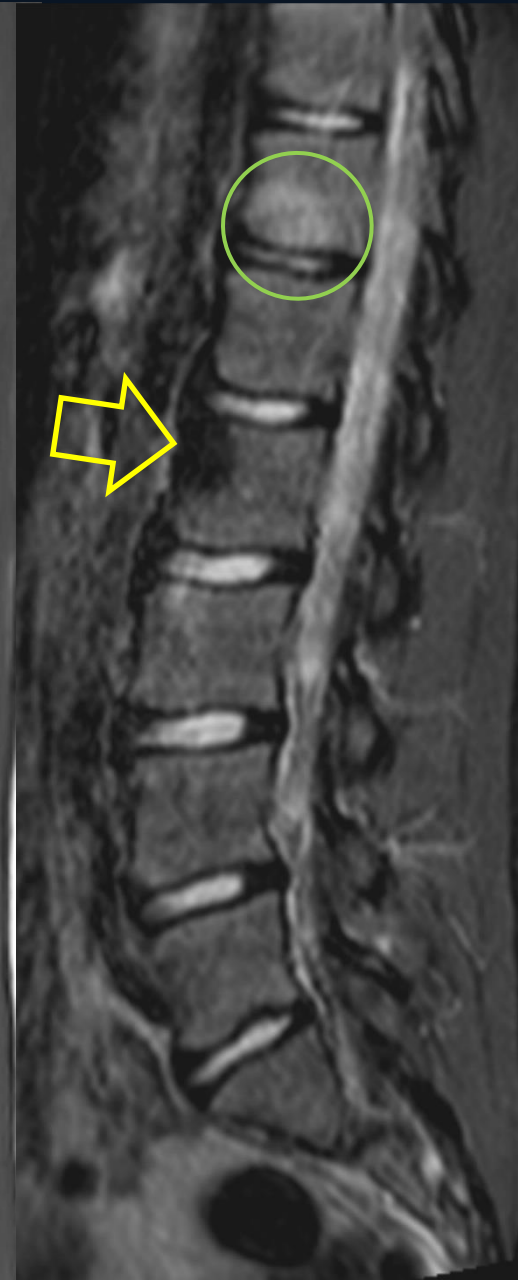
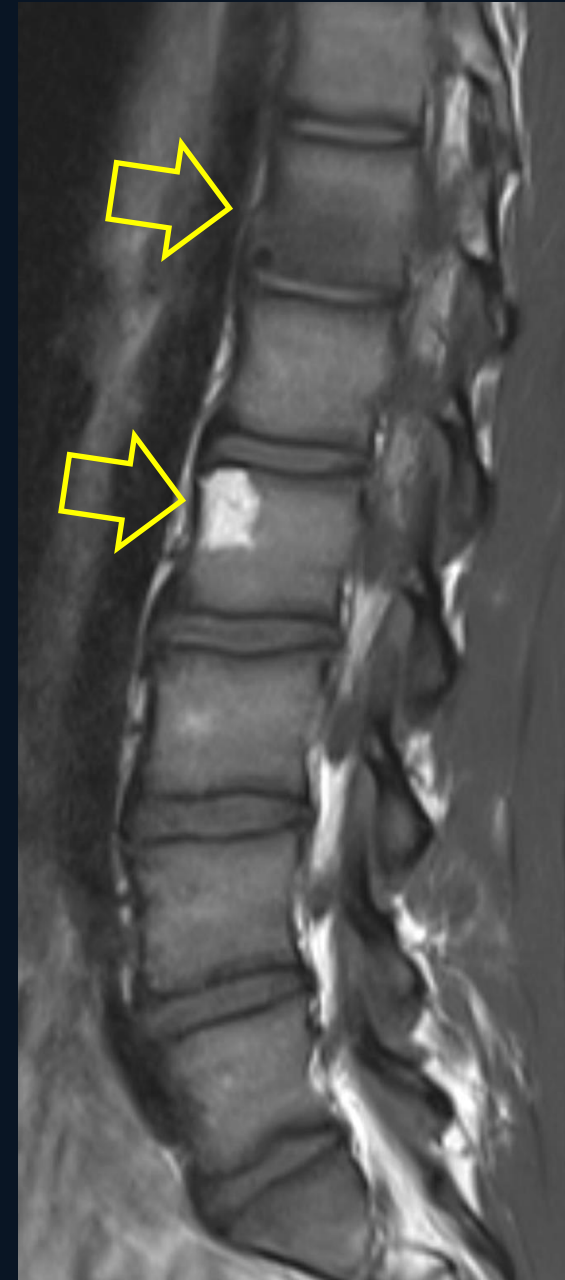
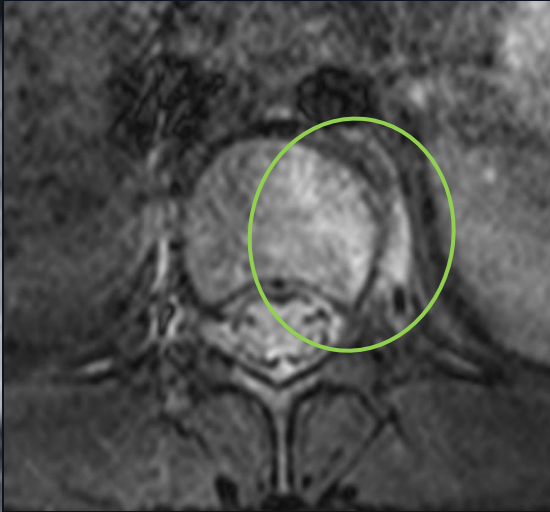


5 m f/up



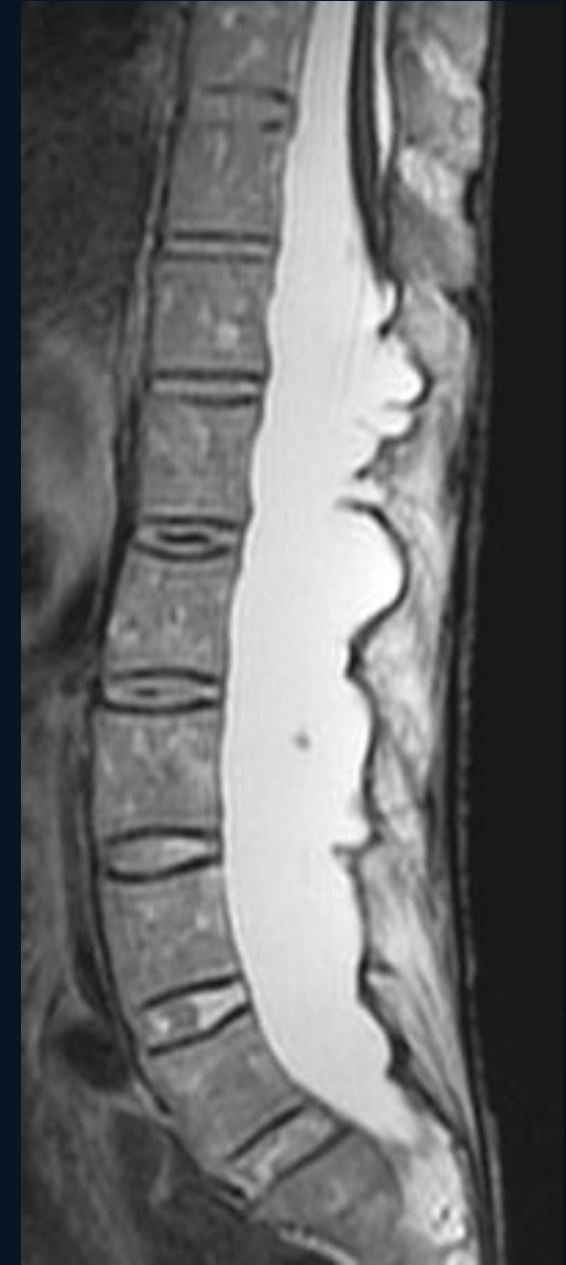
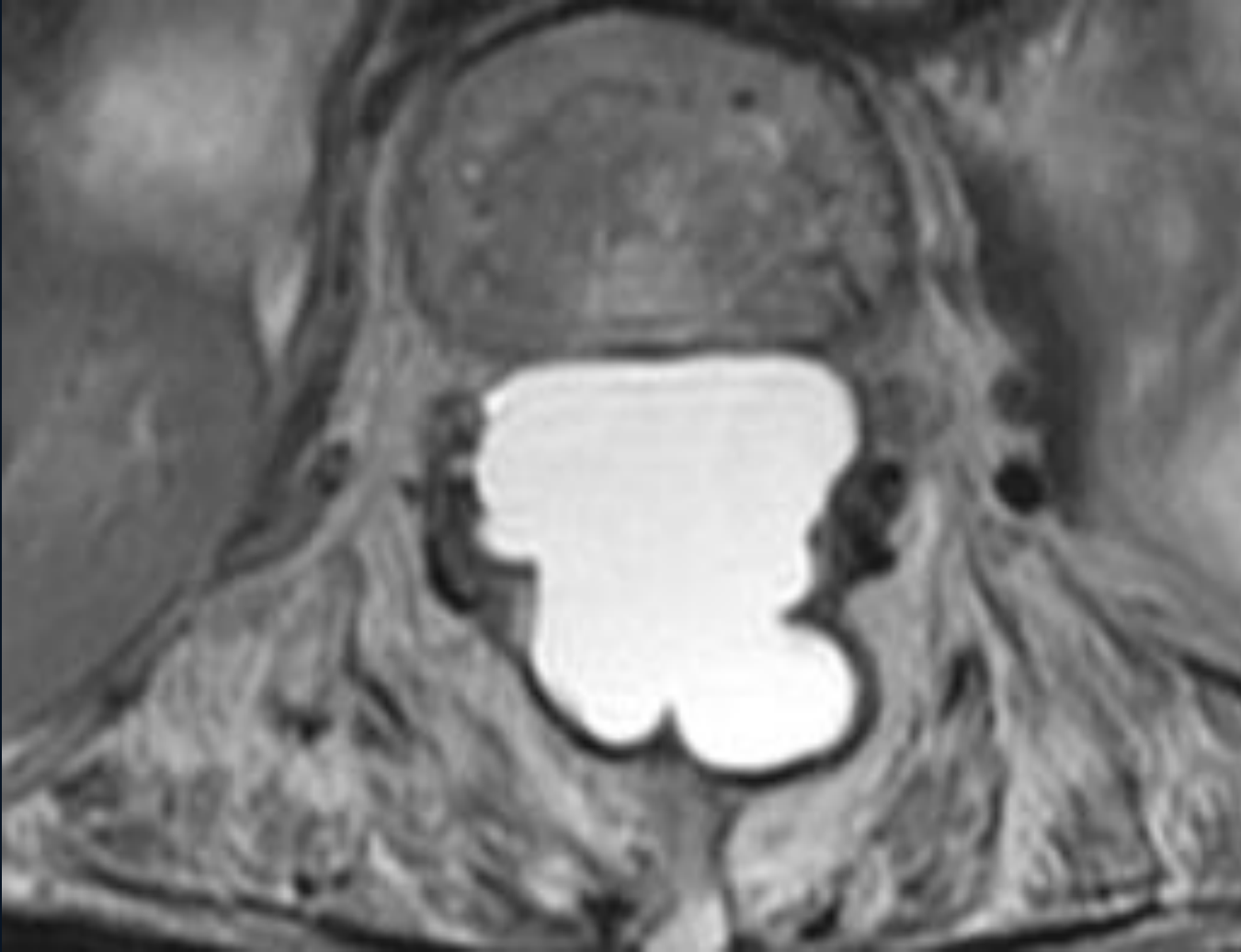


# Mimickers



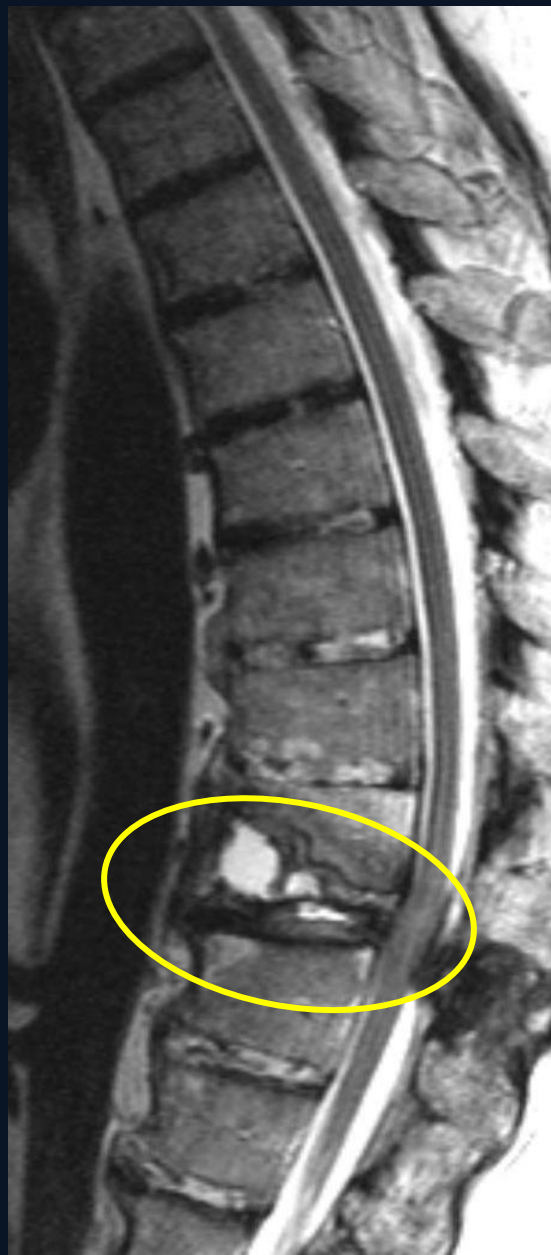
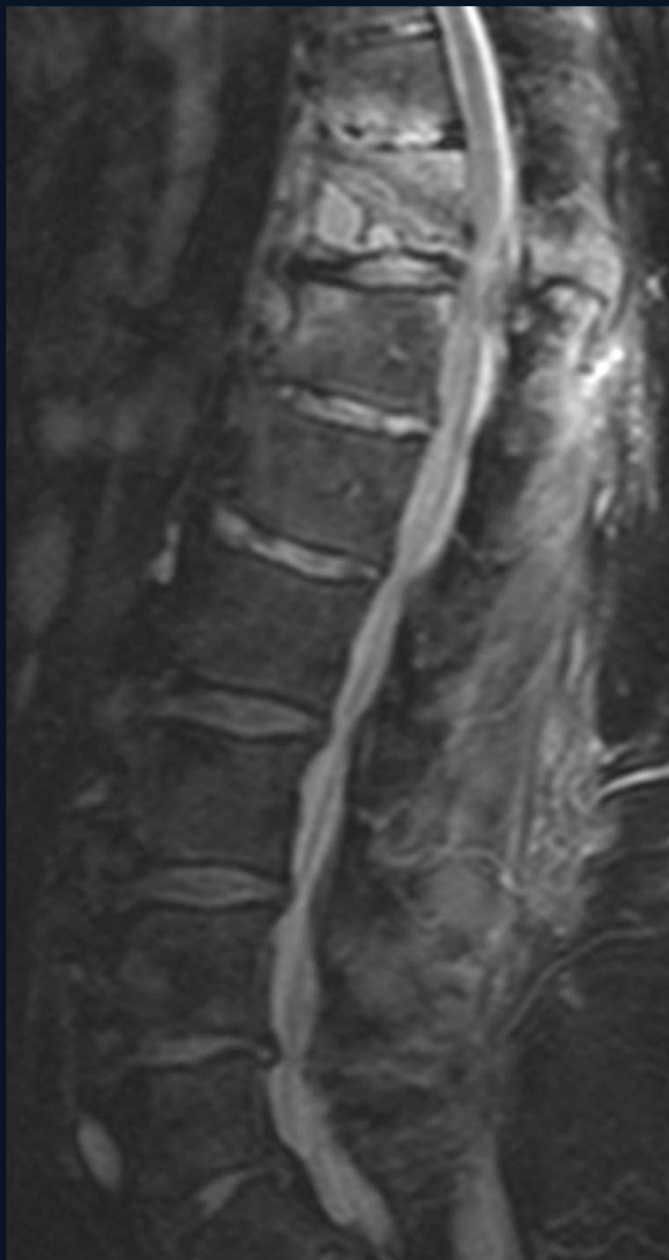
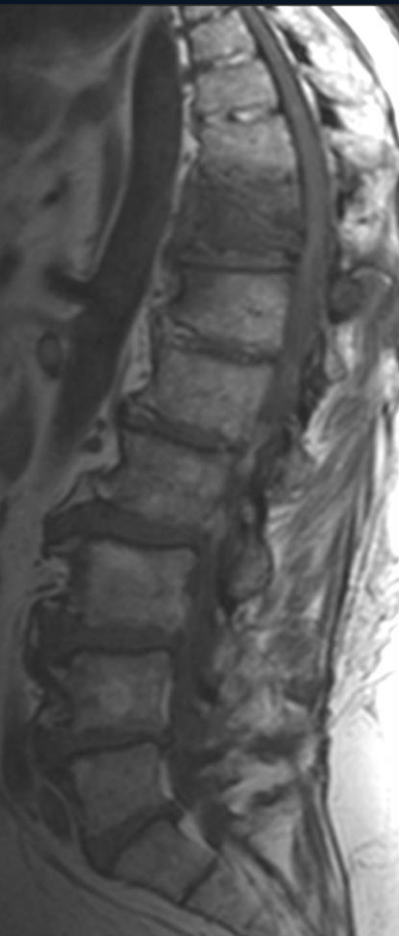
Young female elite athlete  
Long jump  
Stress reaction and hemangioma

## 8. Know the complications of advanced disease



Cauda Equina Syndrome

58m, known AS, Acute back pain, Clinically myelopathy



Osteoporotic fx

With pseudarthrosis -  
osteonecrotic cavity

“Fluid “ sign



70m, low energy fall, paraparesis

62m, MVA low energy, paraparesis

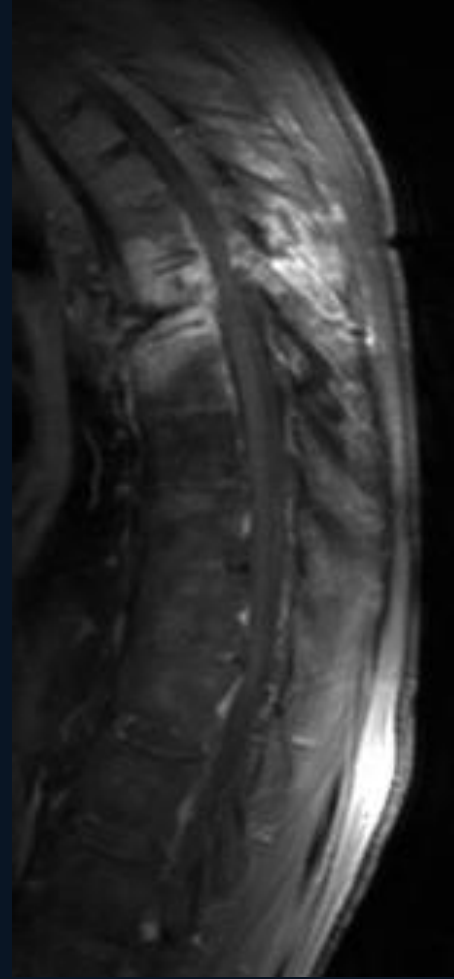
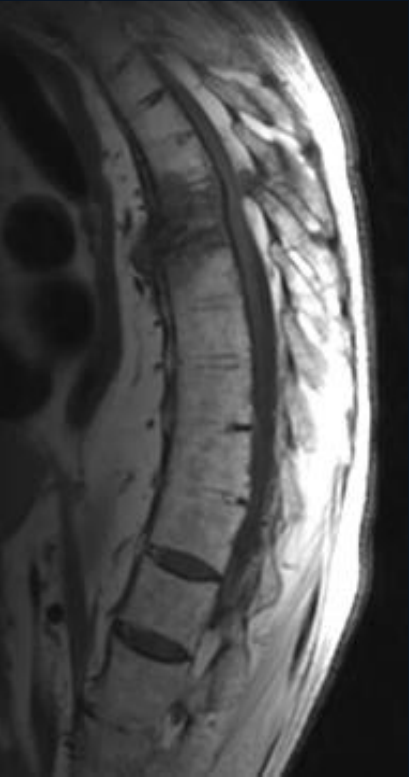
T1

STIR

T2

Gd T1 fs

CT

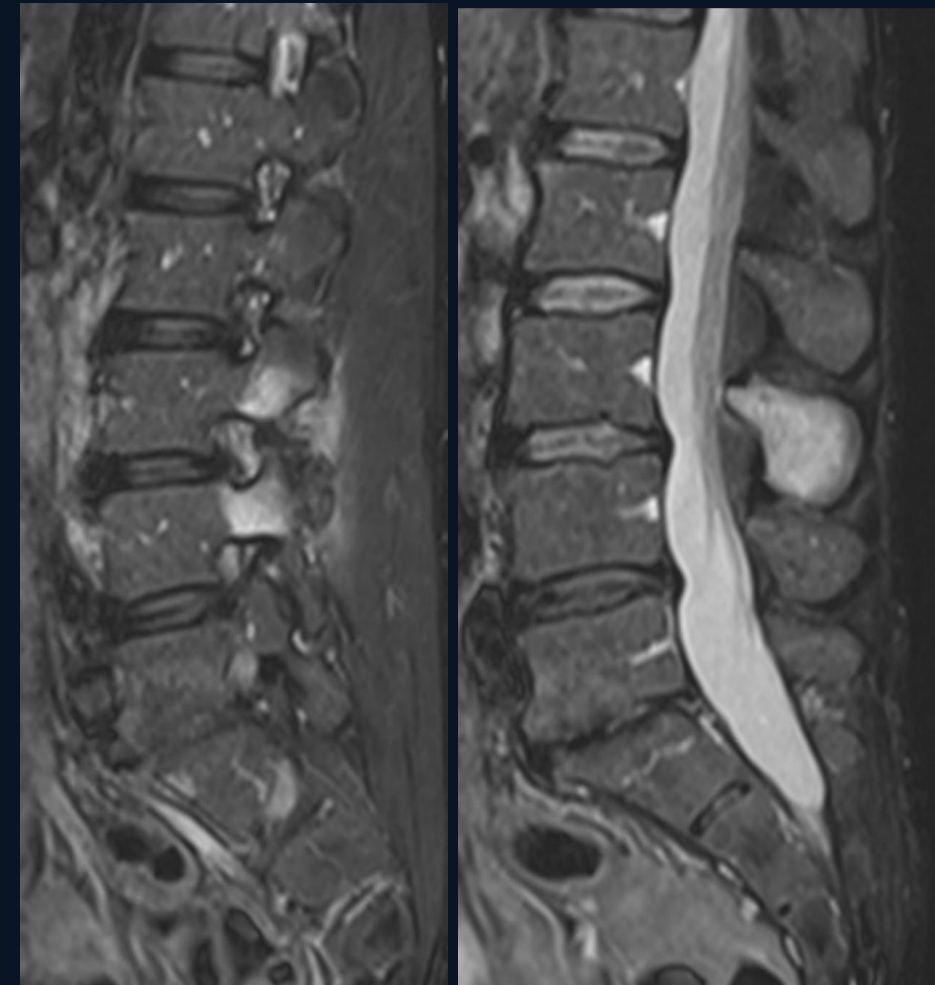


# 9. Do we need to perform MRI of the whole spine in addition to MRI of the SIJ in suspected axSpA?

The incidence of isolated in the spine axSpA changes is <1%

MRI of the spine is reserved for pts with spinal symptoms with negative SIJ, and uncertainty in the clinical diagnosis

STIR, 47y/o, f

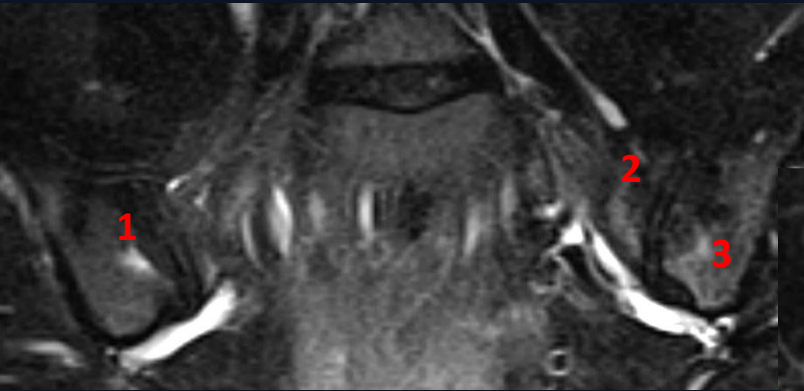


*Weber U, et al. Ann Rheum Dis 2015*  
*Ez-Zaitouni Z, et al. Ann Rheum Dis 2017*  
*Naqvi J, et al. Clin Rad 2019*

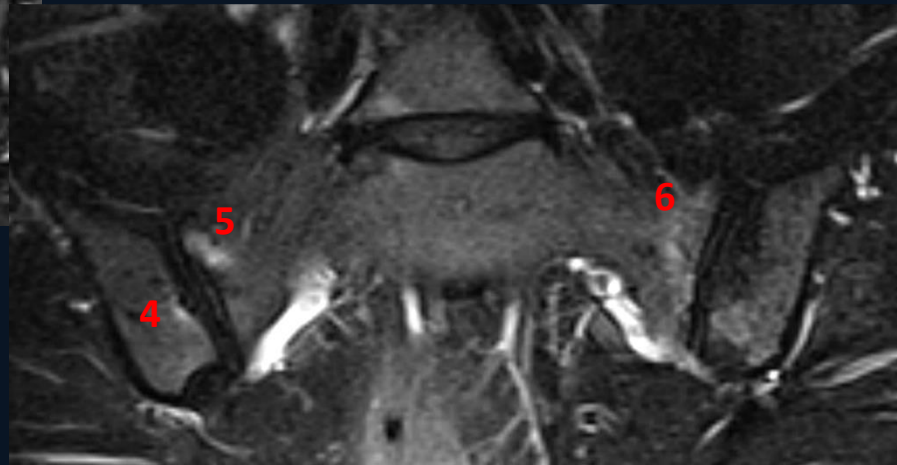


# 10. Are we overcalling sacroiliitis on MRI?

Yes, thus History and clinical examination by radiologists is important



Final diagnosis: fibromyalgia

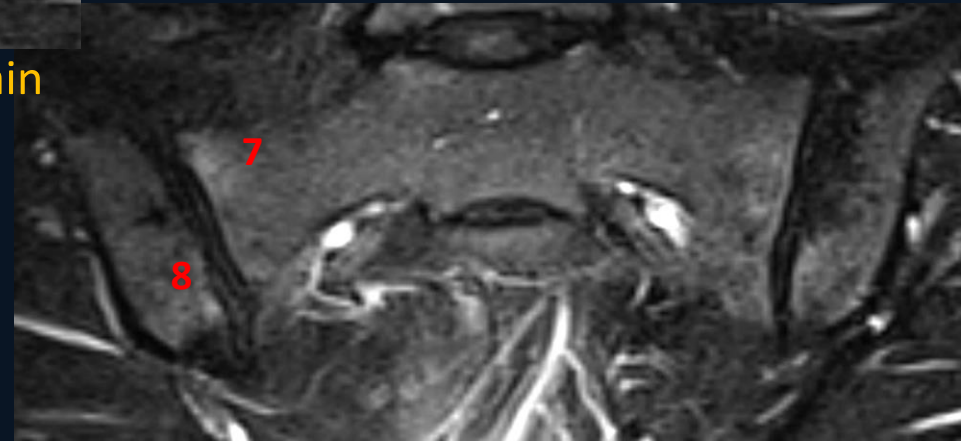


43 f  
3m pain, +/- inflammatory  
CRP, ESR, HLA B27, all negative



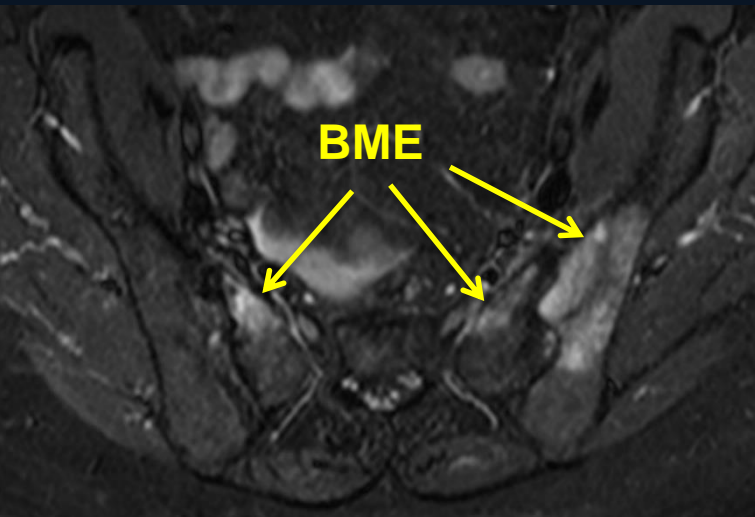
Non-inflammatory disease is more common than sacroiliitis on MRI of the SIJs in patients with inflammatory type back pain

*Jans L, et al. , JBR-BTR 2014*

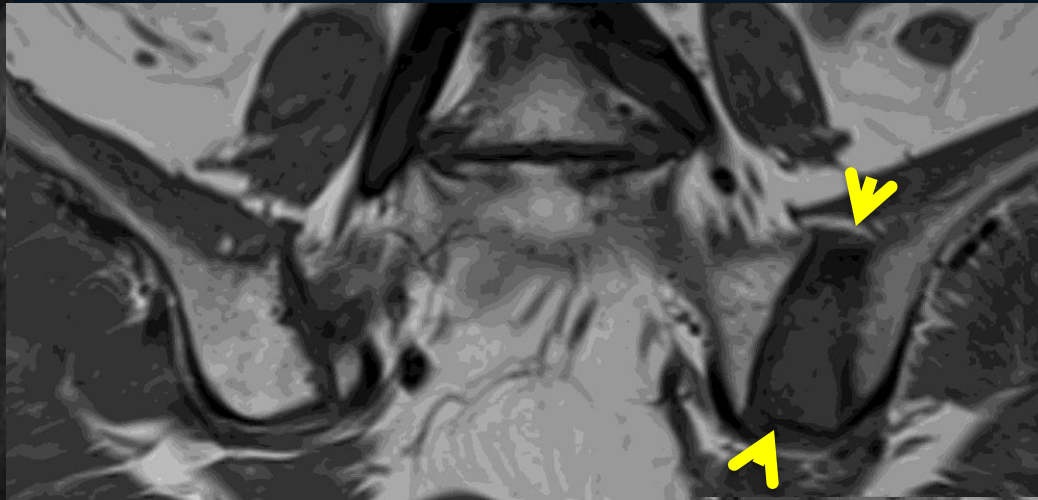


# Real life case

48f, endometrial ca, Rth, sudden pain during biking



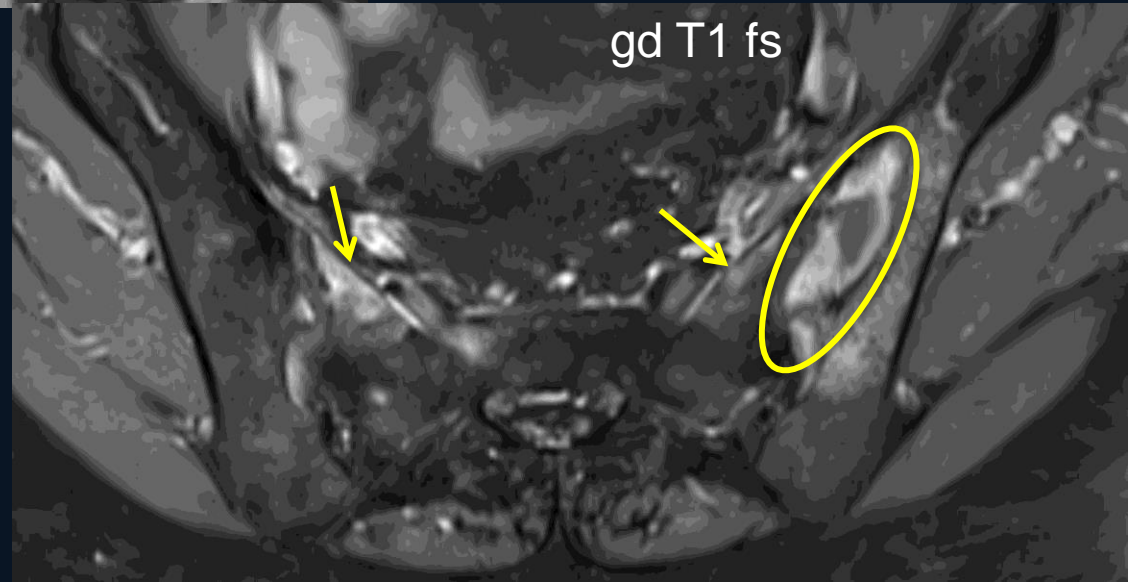
STIR



T1

Metastatic lesion

Overuse or/and microtrabecular insufficiency fxs due to RTH



gd T1 fs

# Conclusions

axSpA: imaging is critical - early recognition!!!

MR imaging: Powerful tool

*Radiologists need to be aware of  
mimickers and  
overcalling*

Think and act as a clinician!!!



Thank you!!!!