

ΜΡΙ ΦΛΕΓΜΟΝΩΔΟΥΣ ΠΡΟΣΒΟΛΗΣ ΣΣ

(ΑΞΟΝΙΚΗ ΣΠΟΝΔΥΛΟΑΡΘΡΟΠΑΘΕΙΑ –
AXIAL SpA)

Χ. ΧΡΥΣΙΚΟΠΟΥΛΟΣ

ΑΚΤΙΝΟΛΟΓΟΣ

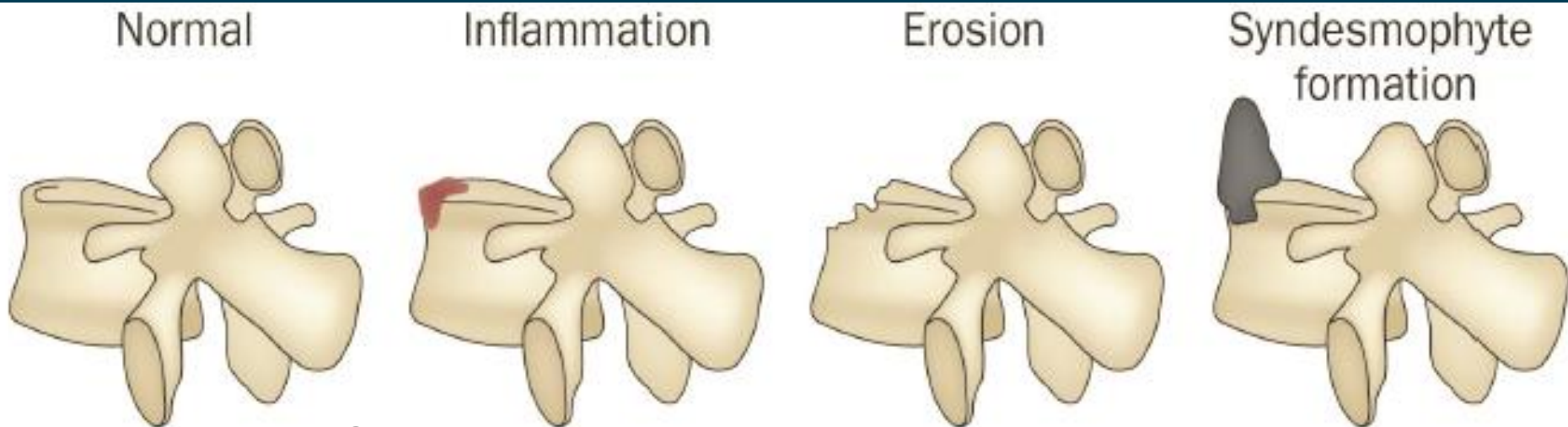
ΕΥΡΩΔΙΑΓΝΩΣΗ ΚΕΡΚΥΡΑ

ΟΡΟΑΡΝΗΤΙΚΗ ΣΠΑ

- Ομάδα Χρόνιων Ρευματολογικών Παθήσεων με κοινά κλινικά, εργαστηριακά και γενετικά στοιχεία
- Πλήν Ρευματοειδούς Αρθρίτιδας (ΡΑ)
- Ως επί το πλείστον προσβάλλουν τον Αξονικό Σκελετό, συμπεριλαμβανομένων των Ιερολαγονίων Αρθρώσεων
- Σε αντίθεση με την ΡΑ (προσβολή Αρθρικού Υμένα) οι ΣΠΑ προσβάλλουν τις Ενθέσεις : οστικές προσφύσεις συνδέσμων, τενόντων, μυών και αρθρικής κάψας

Enthesitis

- Initial inflammatory lesions result in
- **Erosions** in the subchondral bone, filled with subacute or chronic inflammatory tissue and exhibit edema
- Healed by **new bone formation** → new enthesis





T1



STIR



T2

Ligaments: low SI on all pulse sequences

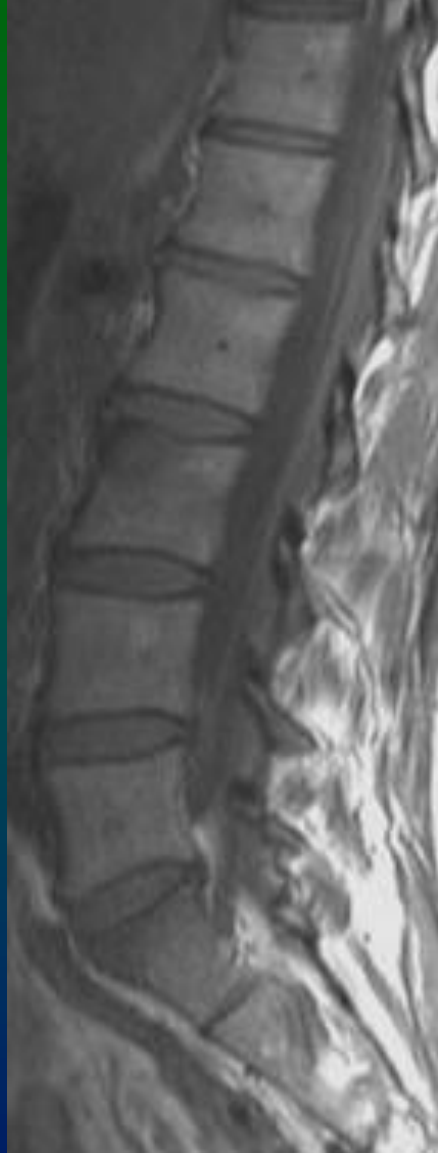
Spine: acute disease

- T-spine: 2nd after SIJ, 1/3 simultaneously with SIJ, only 5-27% before SIJ
- **Spine**: MRI findings of early active AS
 1. Spondylitis
 2. Spondylodiscitis
 3. Arthritis: facet joint, costovertebral, costotransverse
 4. Enthesitis: interspinal, supraspinal, interosseous ligaments

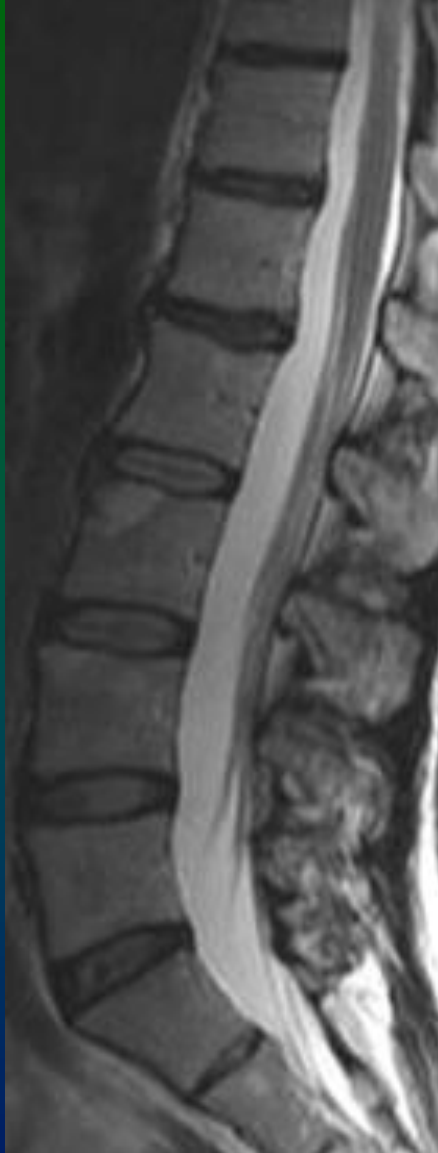
Early disease

- **Spondylitis**: Osteitis and Erosions
- anterior, posterior - superior and inferior bodies-squaring
- Predict syndesmophytes 24m earlier
- **MRI**: method of choice (fat suppressed T2-w, STIR)

T1



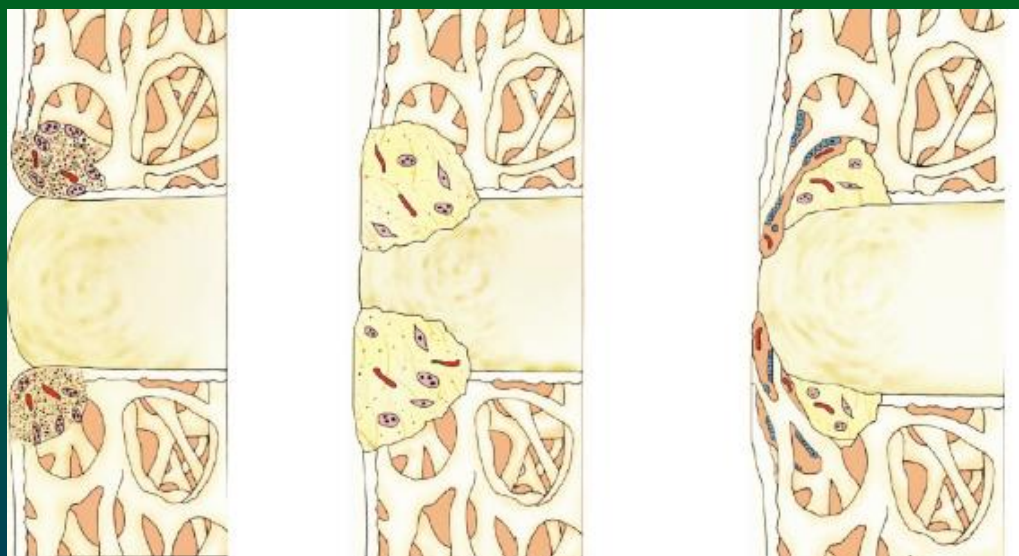
T2



Low signal T1, High signal T2

Enhancement T1

Jevtic et al Skel Radiol 2000



Inflammation

Erosion-repair

New bone formation

Romanus lesion

67% of pts with SPa

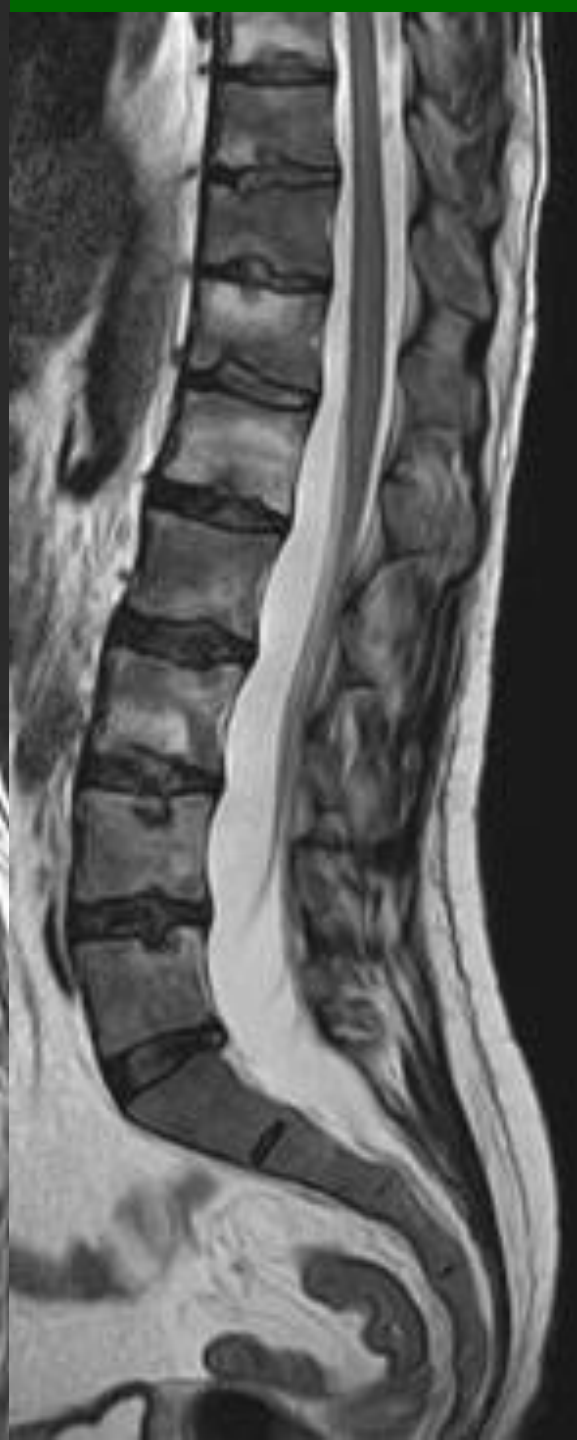
Erosion of vertebral corner, result of enthesitis at the annulus fibrosus insertion
Early: BME, Late changes: squaring of v. bodies, syndesmophytes, "shiny corners" X-R

Andersson lesions:
Erosions within intervertebral spaces

2 adjacent levels is
characteristic of AS

33% of pts with Spa

Specificity 59%

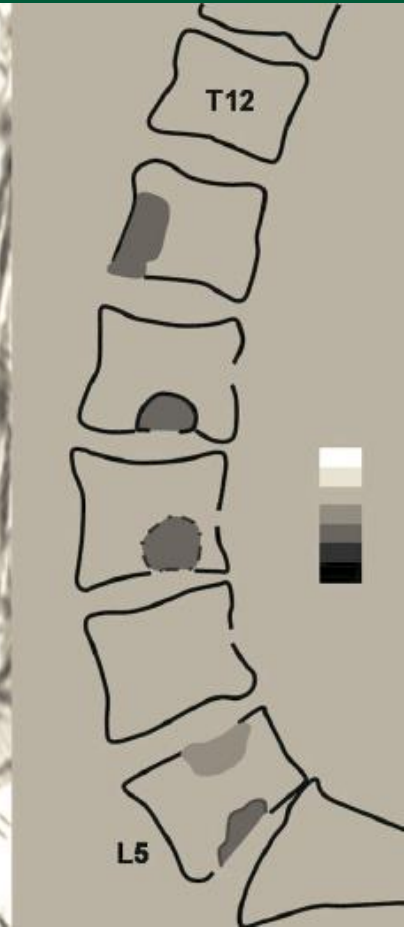
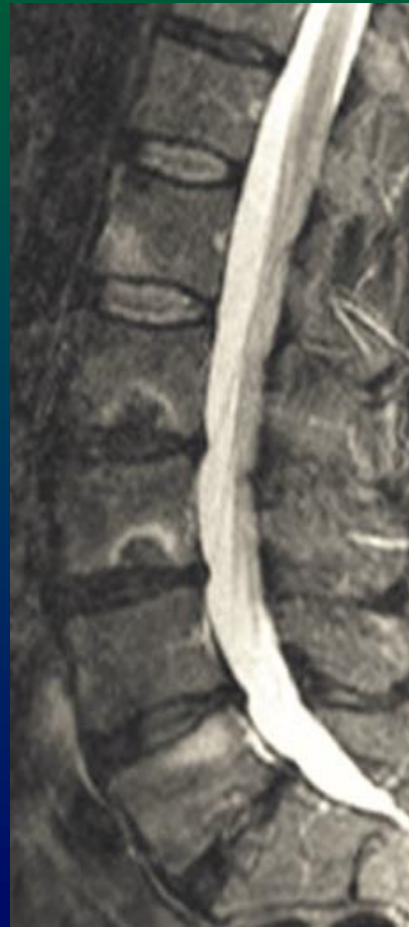
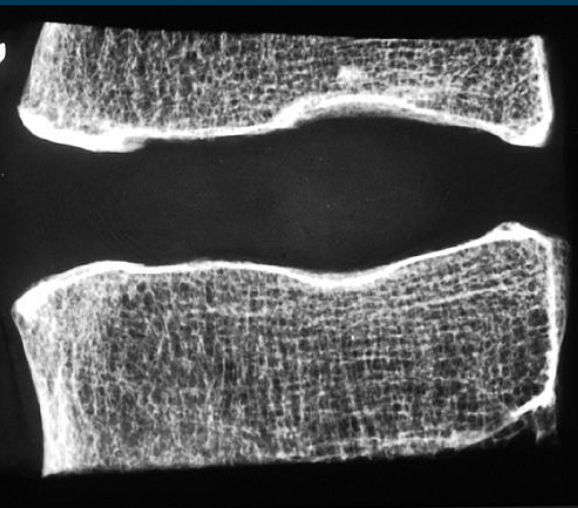
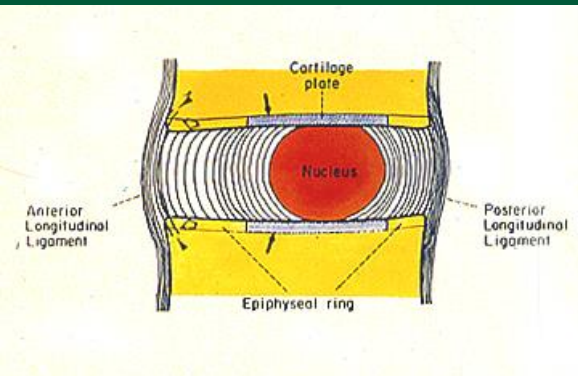


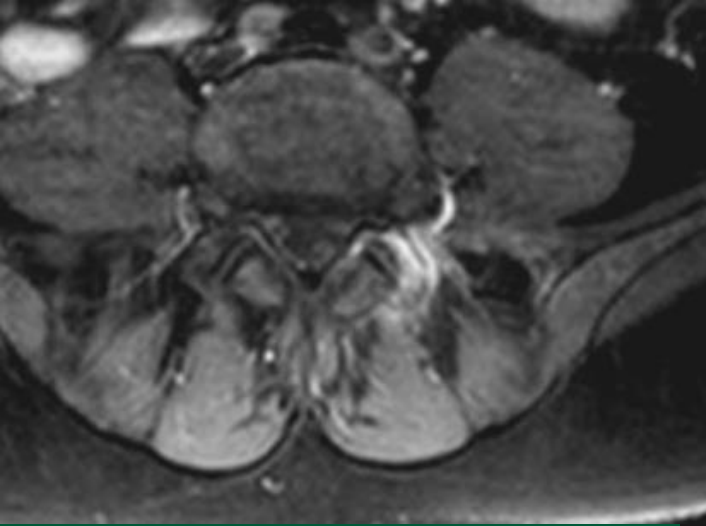
Combined inflammatory lesions Romanus and Andersson



Erosions

Combined inflammatory lesions Romanus and Andersson





Arthritis Facet joints

Gd T1



Any joint from C2 to S1 can be involved
Usually associated with BME within spinal pedicles

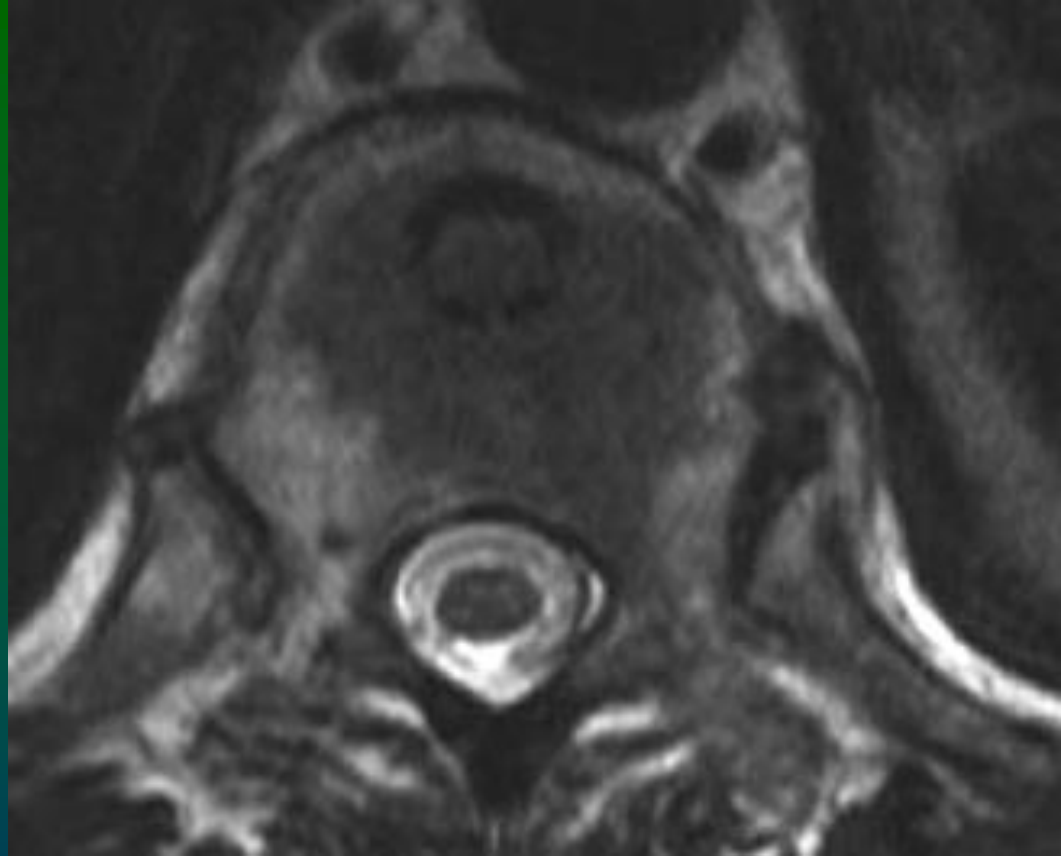
Costovertebral arthropathy

- *Clinically*: Pain with deep breathing, trunk rotation, sneezing, coughing
- First and lower thoracic joints
- May precede or coexist with mild and undiagnosed sacroiliitis

» Ellrodt A, et al. *J Rheumatol* 86

» Pascual E, et al. *Br J Rheumatol* 92





43-y/o male

Hx: 6-month increasing back pain

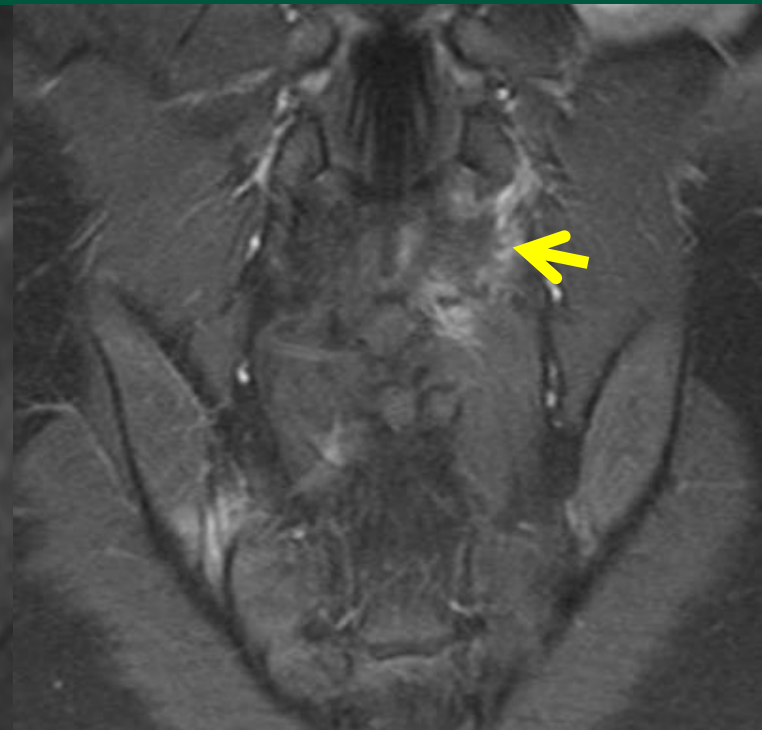
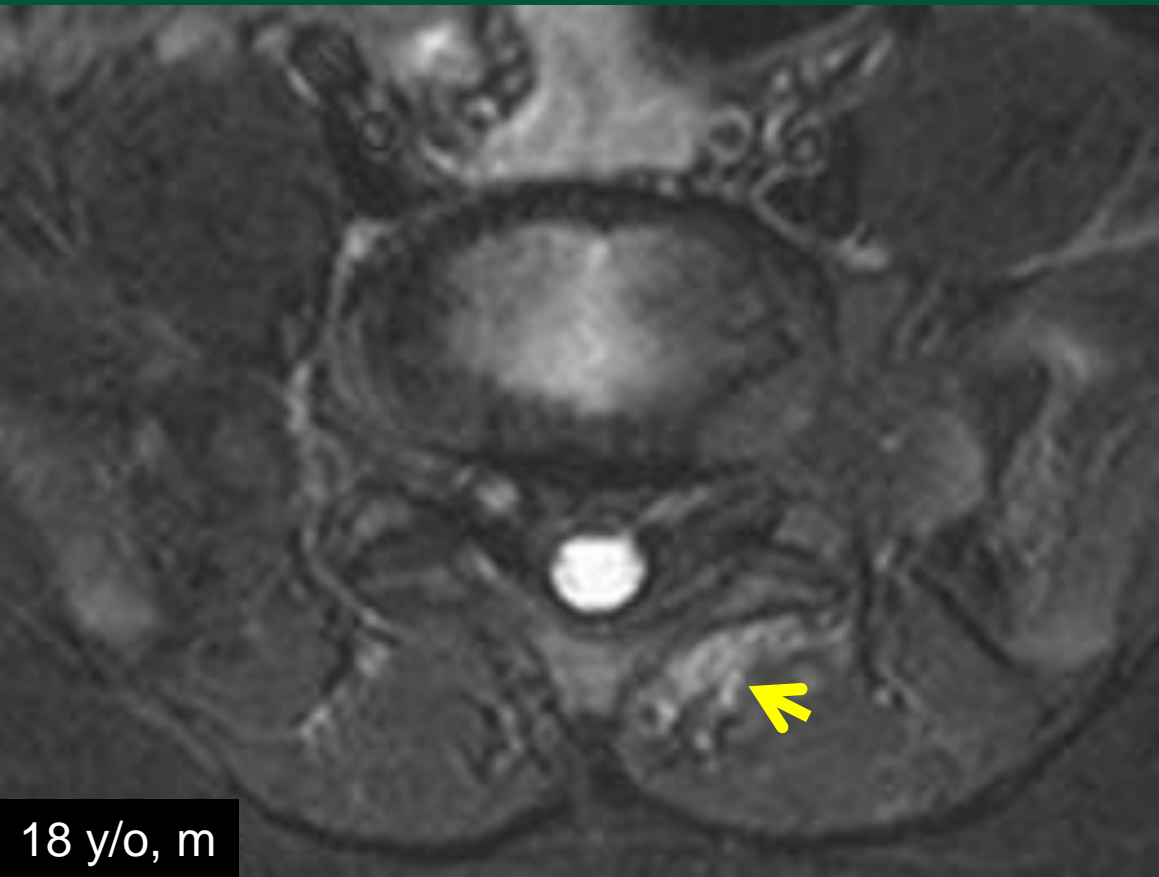
Now continuous disturbing sleep

Recent raised ESR

BME

Enthesitis

- Specificity 87% for SPa



Gd T1

44 y/o, f
9 m pain



Dd AS/BME from MODIC I:
≥3 lesions, young patient, no
significant disc degeneration
Bennett AN, et al. Arthritis Rheum 09;
Jurik A. Insights Imaging 11

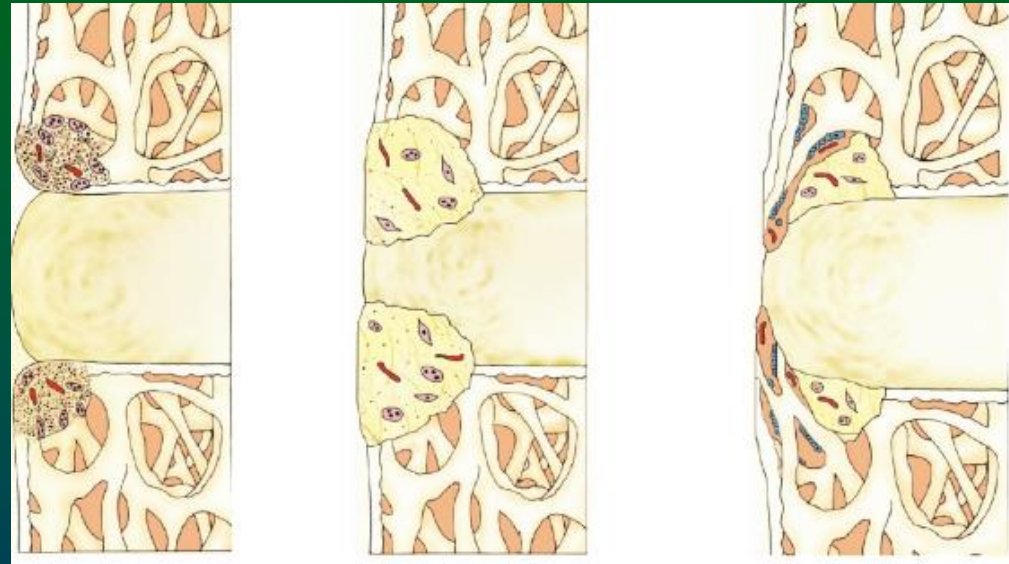
Enthesitis alone is not sufficient for the definition of axial SpA

Chronic inflammatory lesions of the spine

- Syndesmophytes

- Ankylosis

- Fat deposition vertebral corners



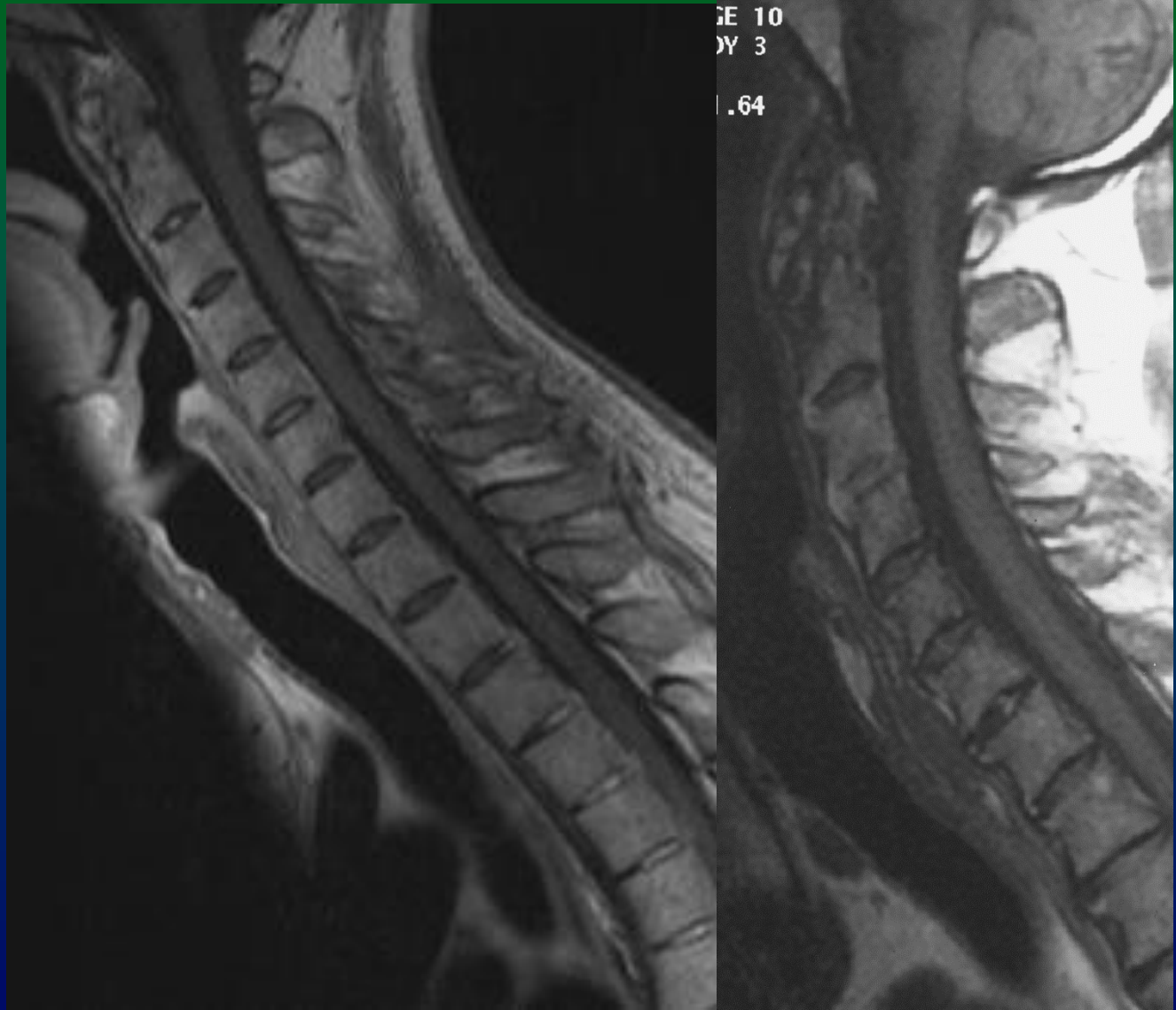
Inflammation

Erosion-repair

New bone formation

Syndesmophytes

- Thin, vertically oriented, new bone formation on the peripheries of the disks.
- Symmetric and bilateral





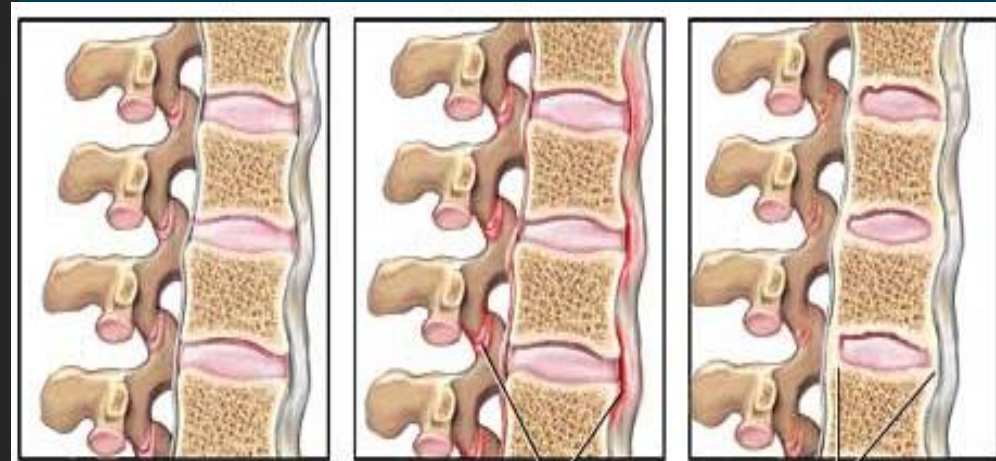
Ankylosis

Osseous bridges and new bone formation occur in the IV disks

Normal

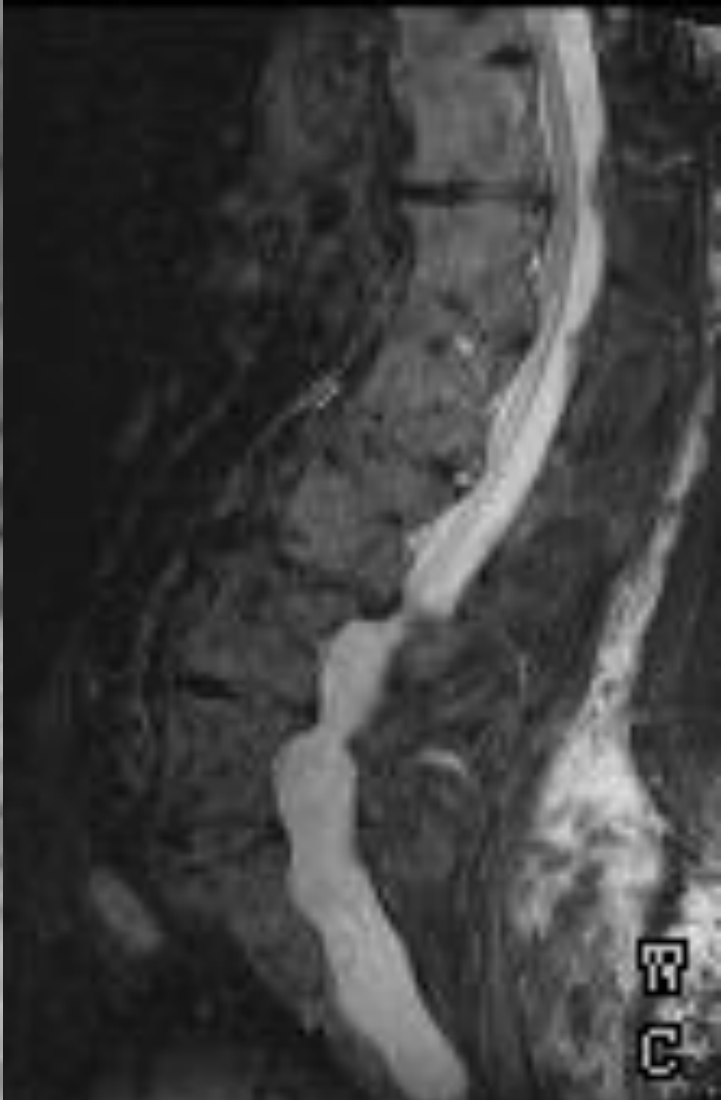
Early AS

Advanced AS



Inflammation

Fusion

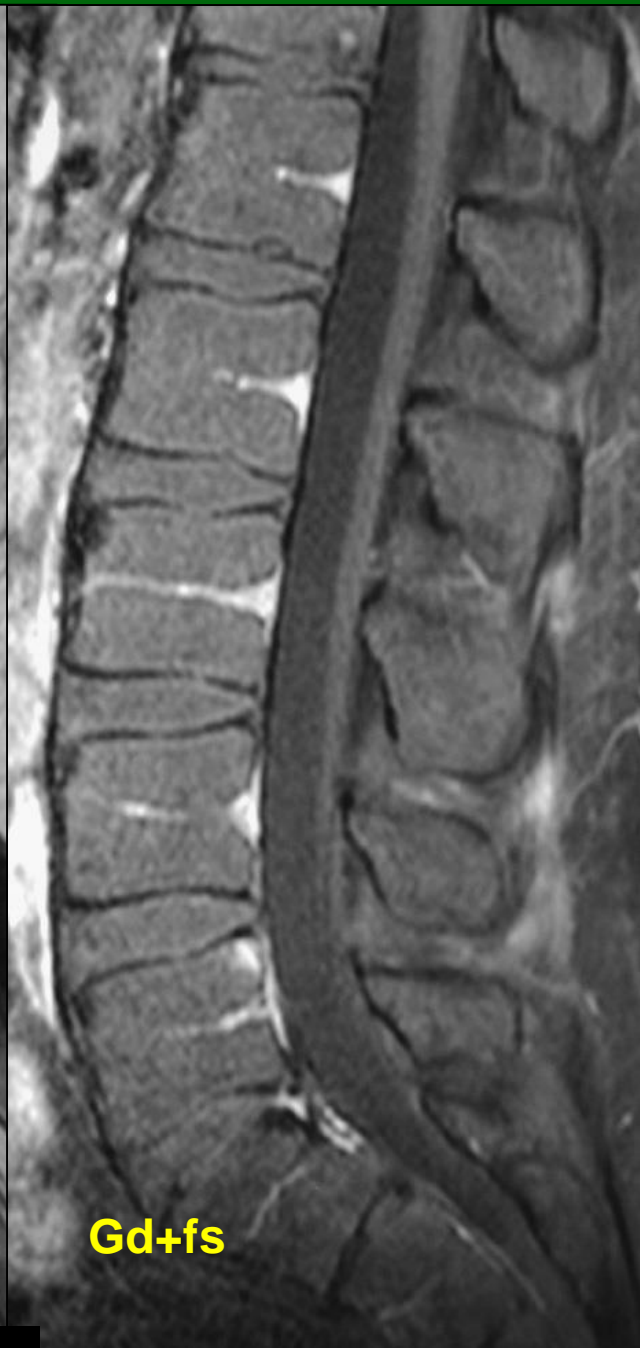
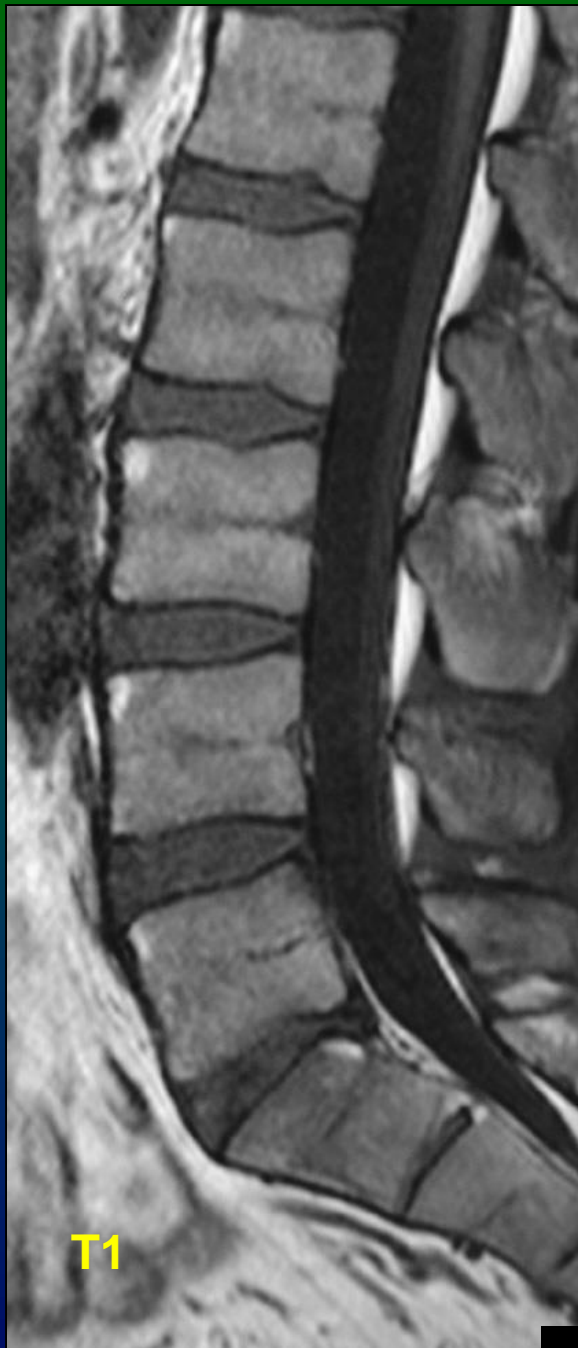


Ankylosis

73f

Fat deposition

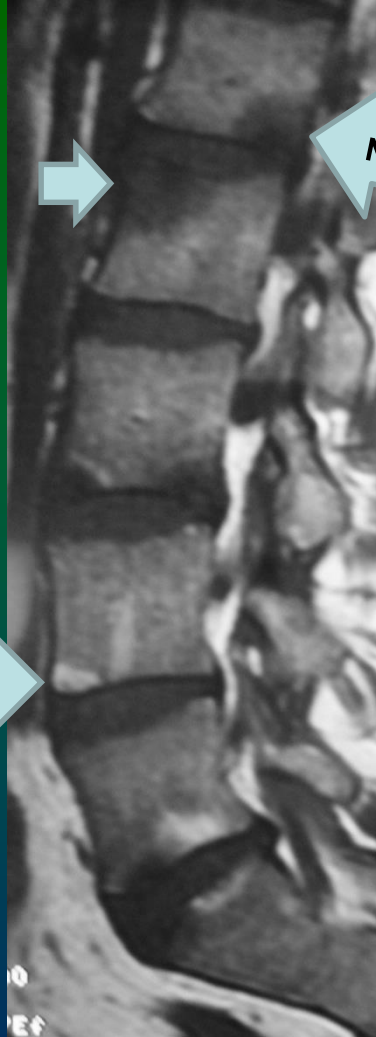




Fat deposition vertebral corners



STIR



New active

Old inactive

T1



Shiny corners

MRI edema: active lesions

MRI fat: inactive lesions

XR sclerotic, MRI low SI: chronic lesions



T1



T2



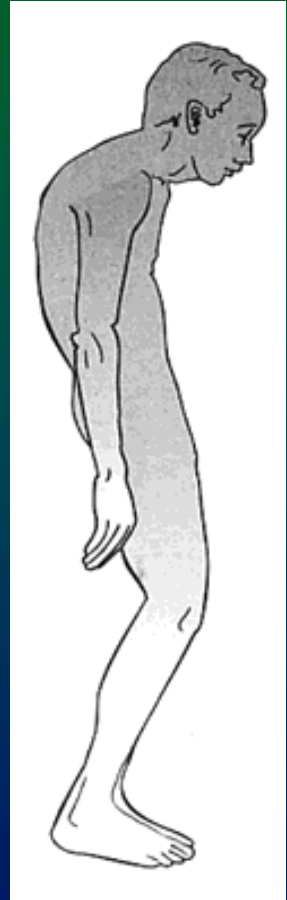
STIR



Active and chronic lesions

Additional features in long standing AS

- Shiny corners on X Rays
- Bamboo spine
- Disc calcification-ballooning
- Arachnoid diverticula
- Fractures, MDCT

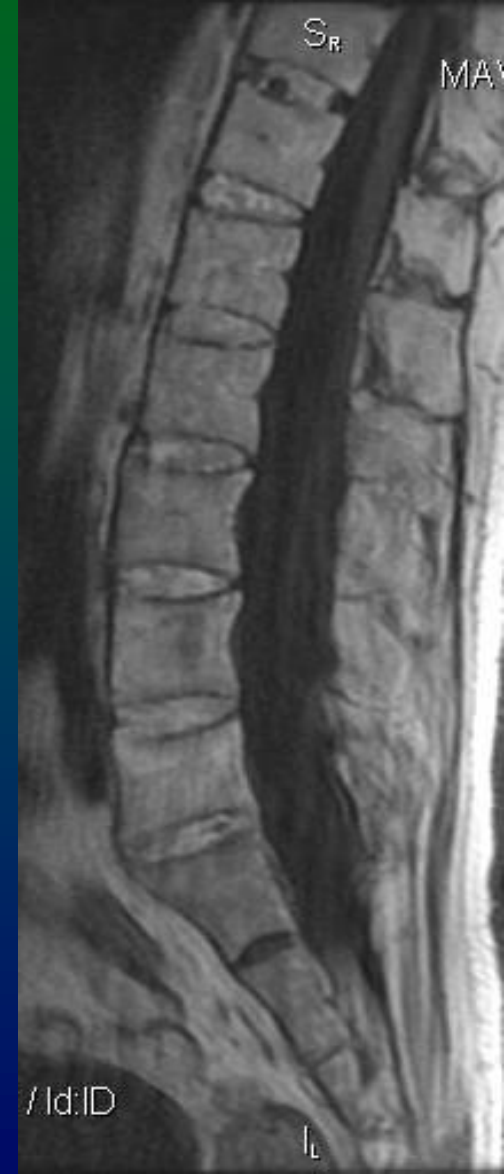
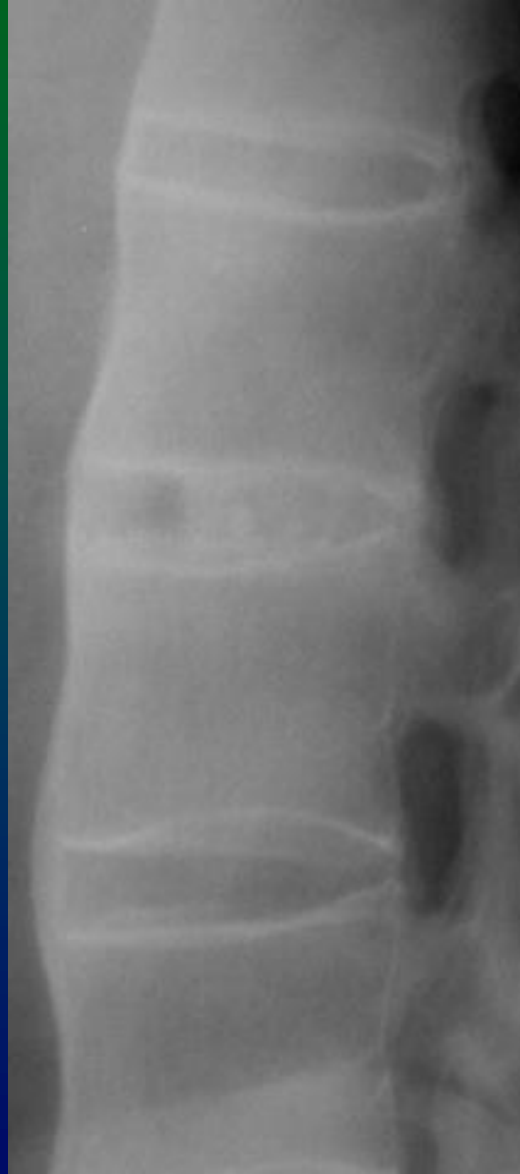


Disc ballooning

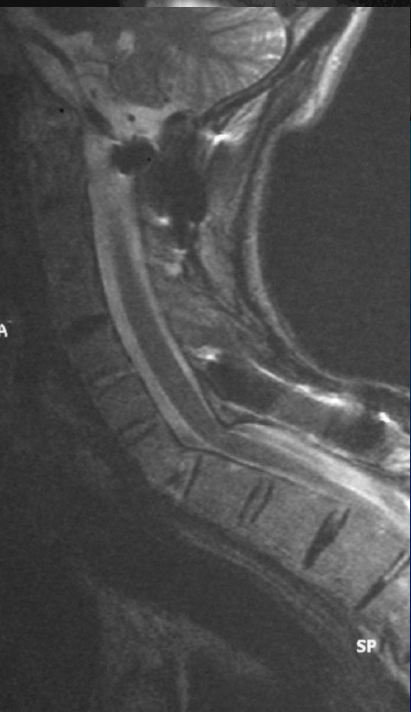
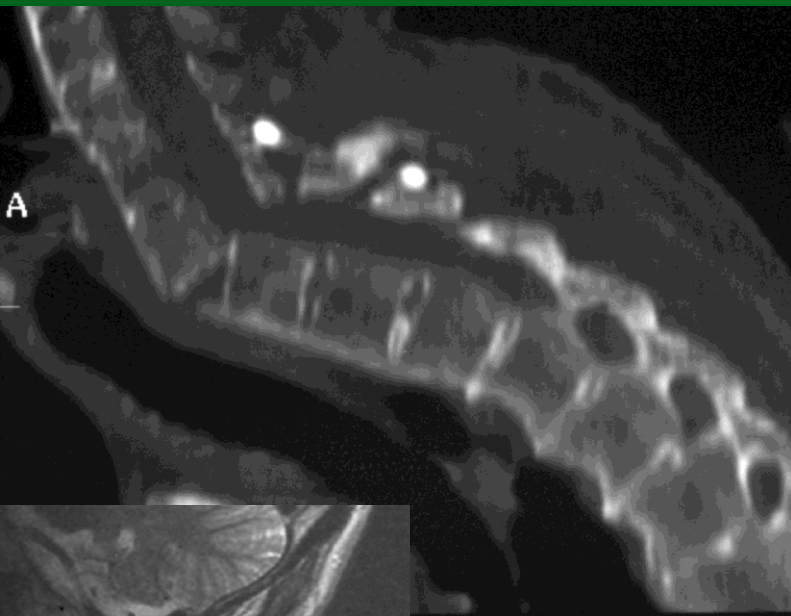


Arachnoid diverticula

Disc calcification

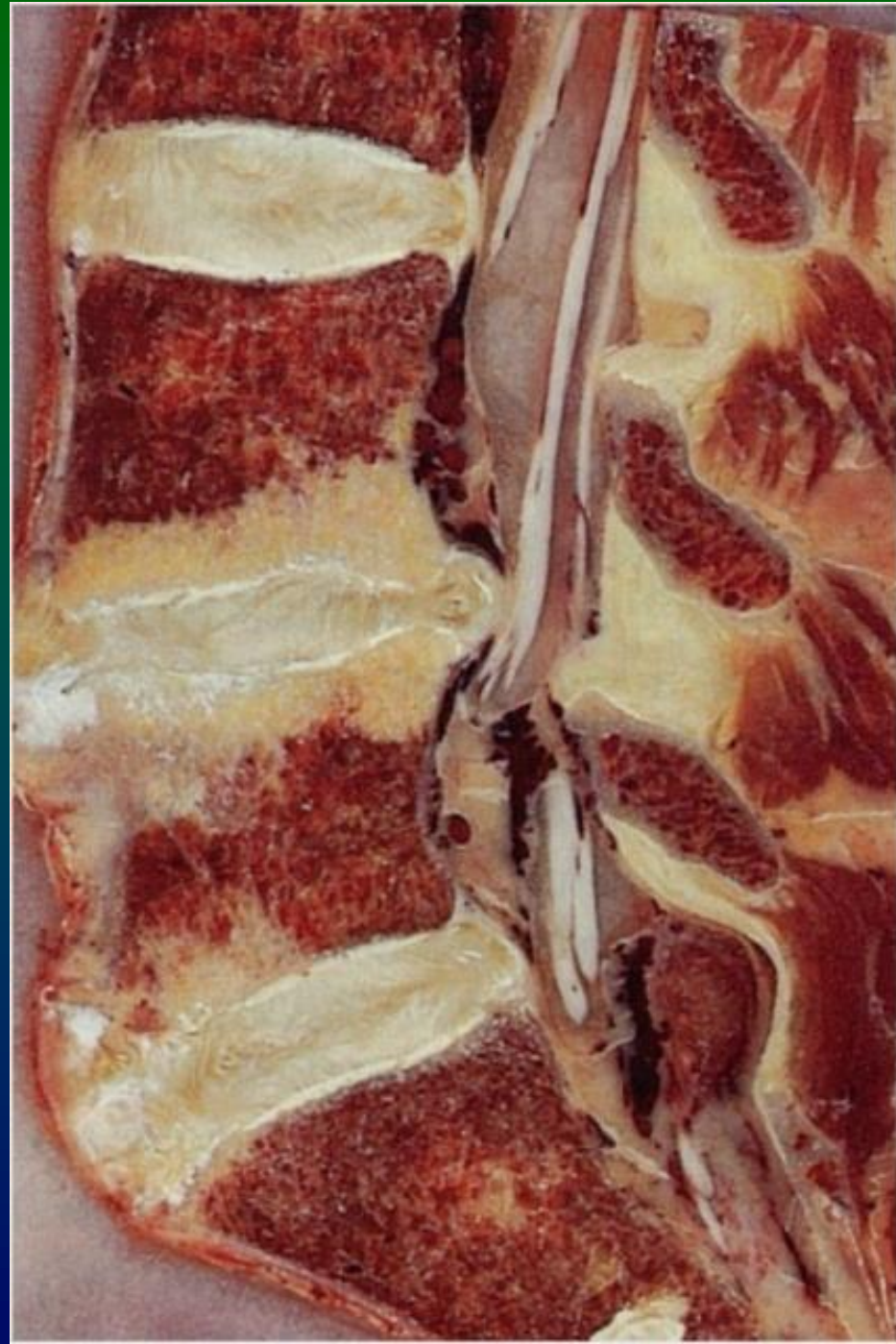


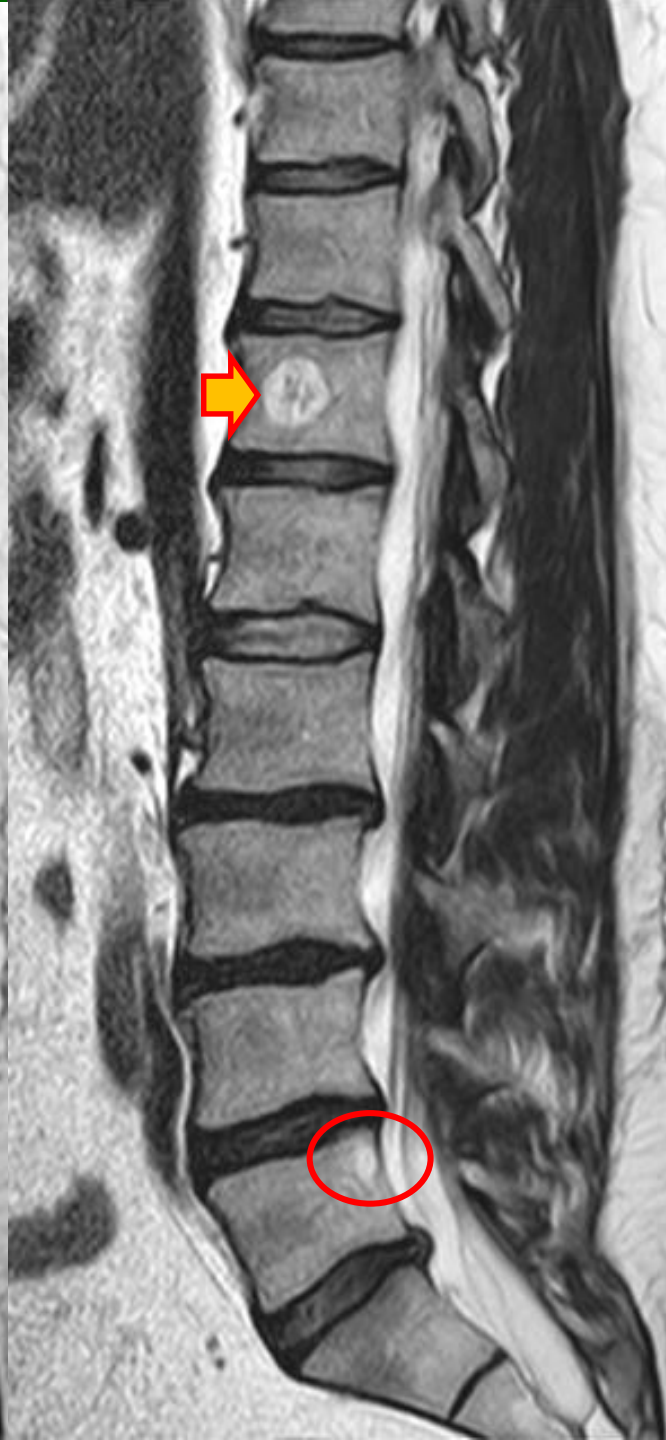
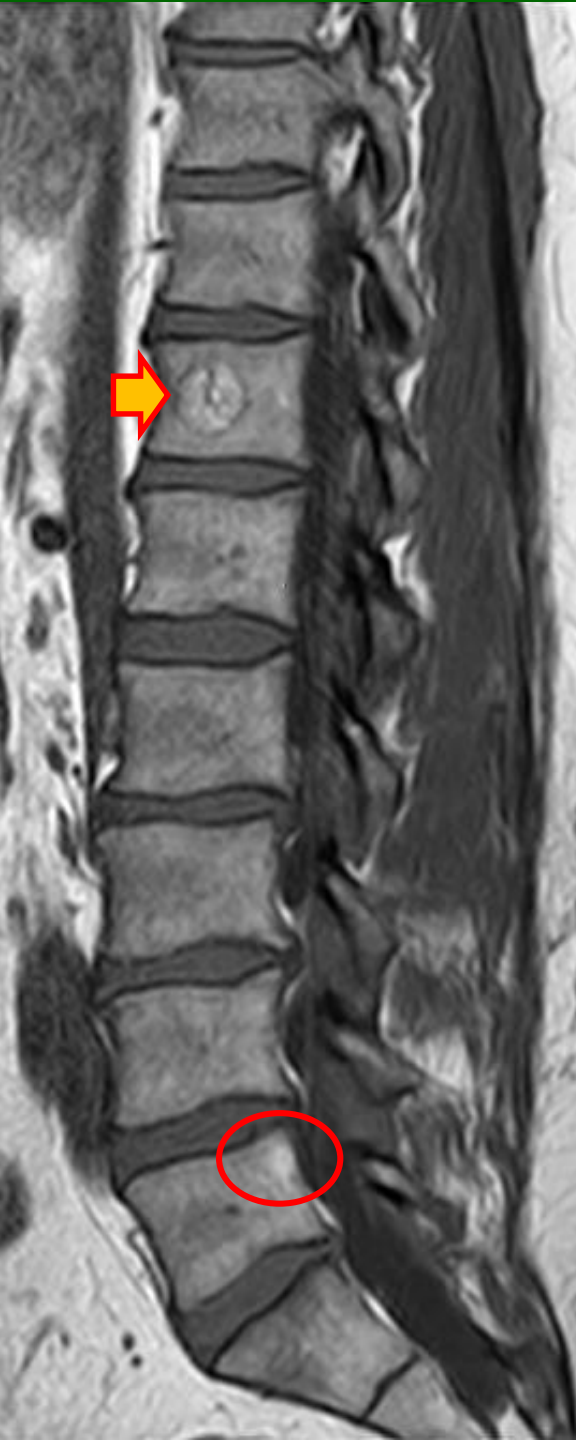
AS- Fracture



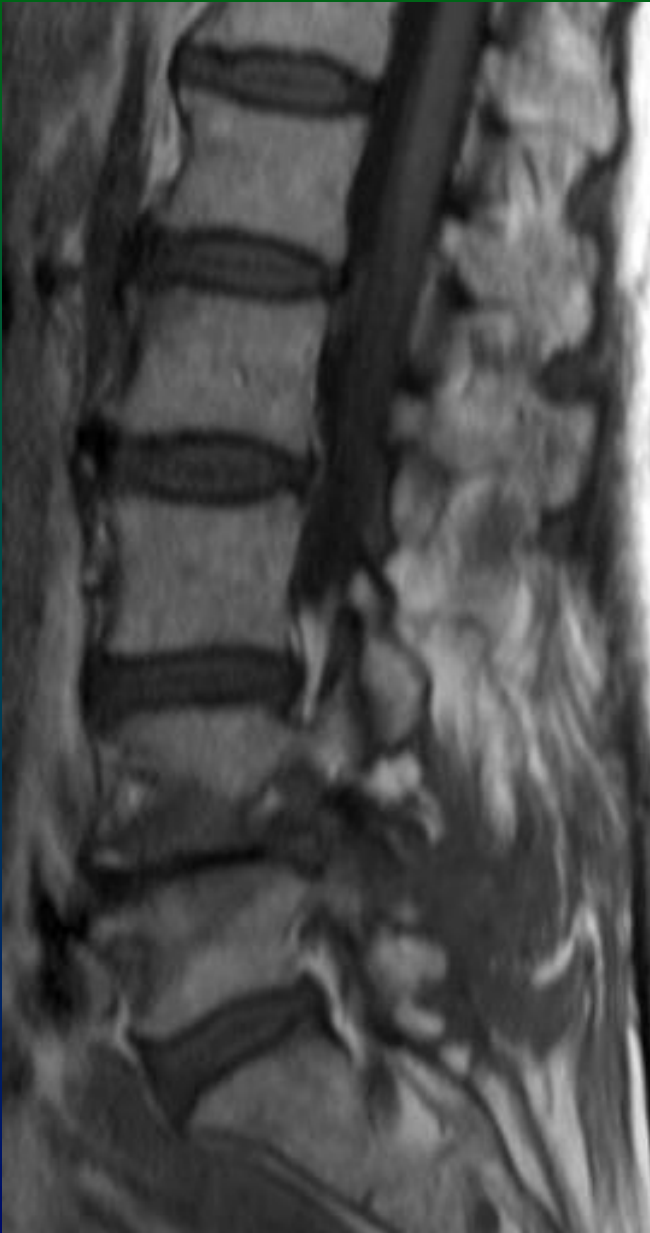
Pitfalls

- Shiny corners in healthy people
- BME in degenerative disc disease





Discogenic end-plate changes



T1



T2

Modic I



S_R

73Y/M

T₁₂
19

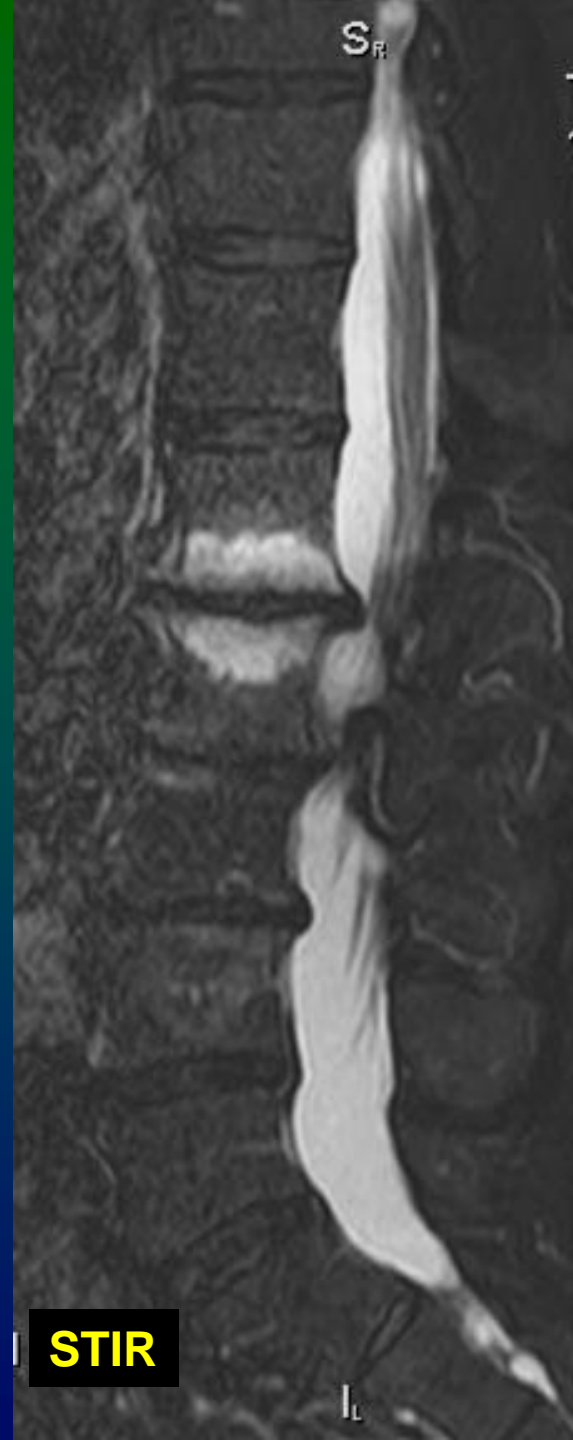
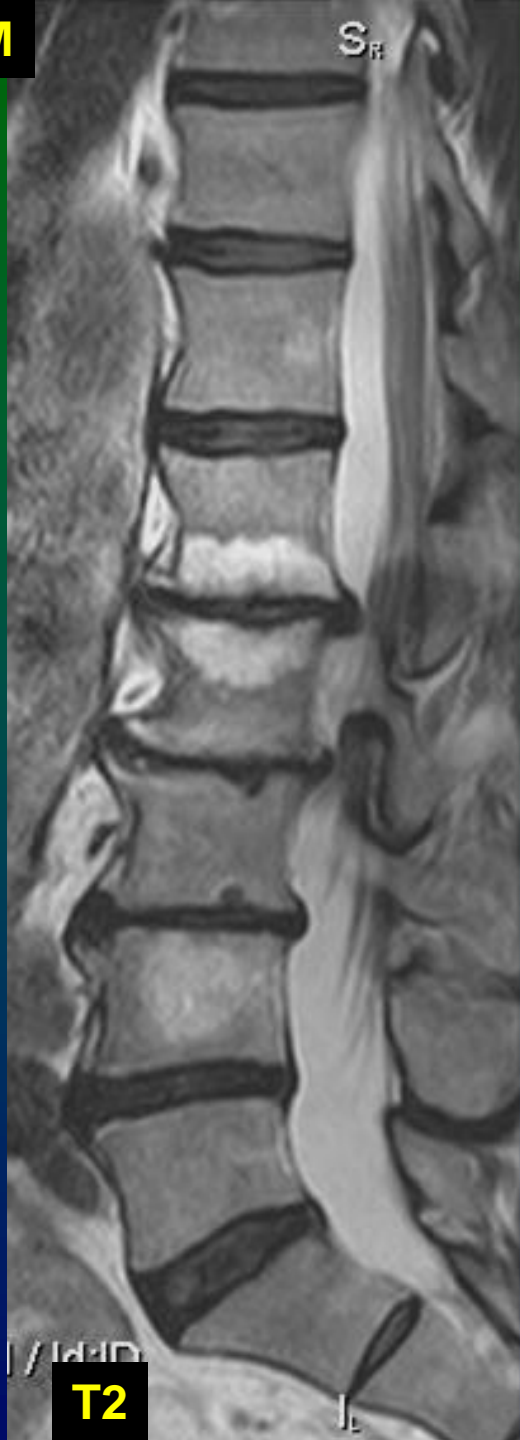
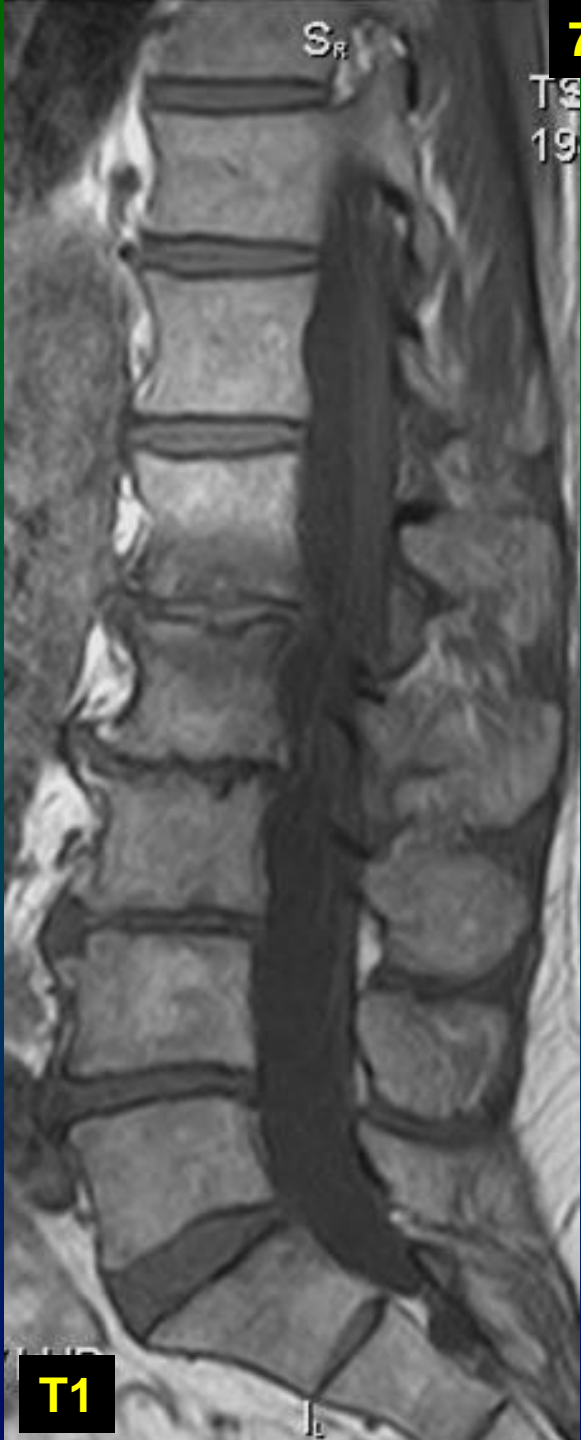
S_R

S_R

T1

T2

STIR



Common clinical scenario

- Young patient
- Inflammatory back pain
- Normal SI joints on plain radiographs



- **GO FOR MRI**

