

31 F with H/O IVDA,
with pain & weakness
in shoulders & legs

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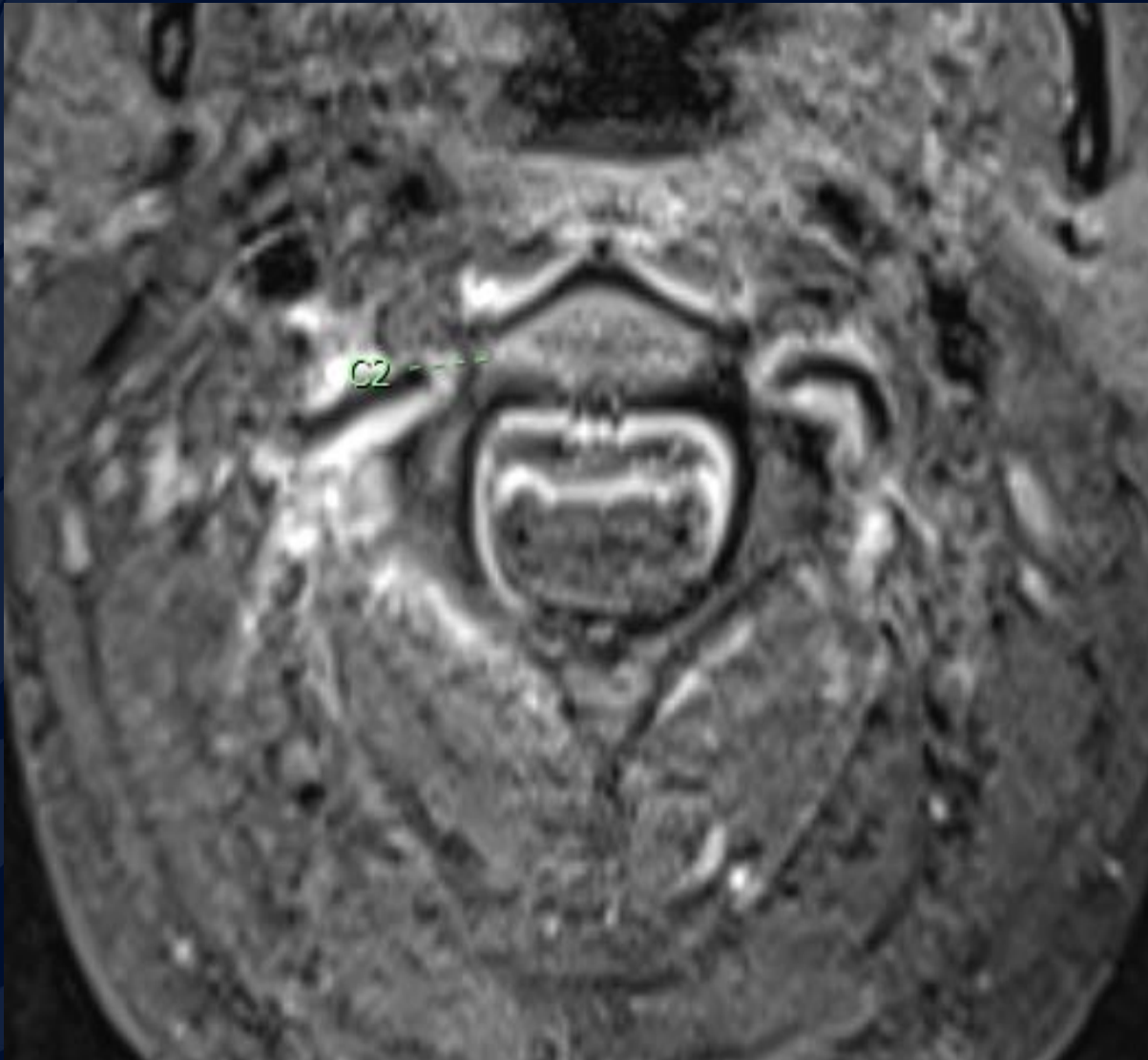
T2 Sagittal



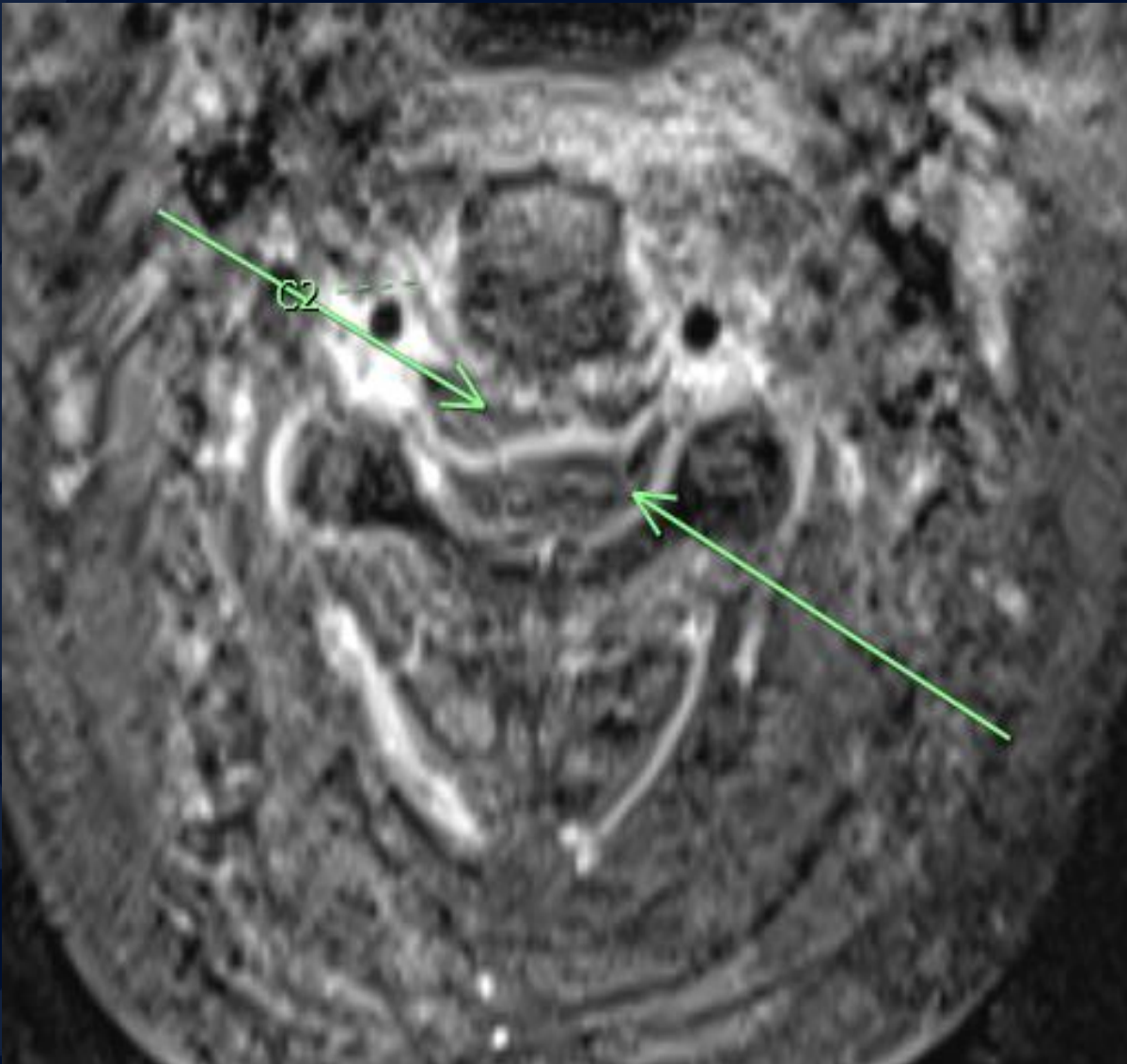
Gd-T1 Fat Sat Sagittal



Gd-T1 Fat Sat Axial



Gd-T1 Fat Sat Axial



T2 Sagittal

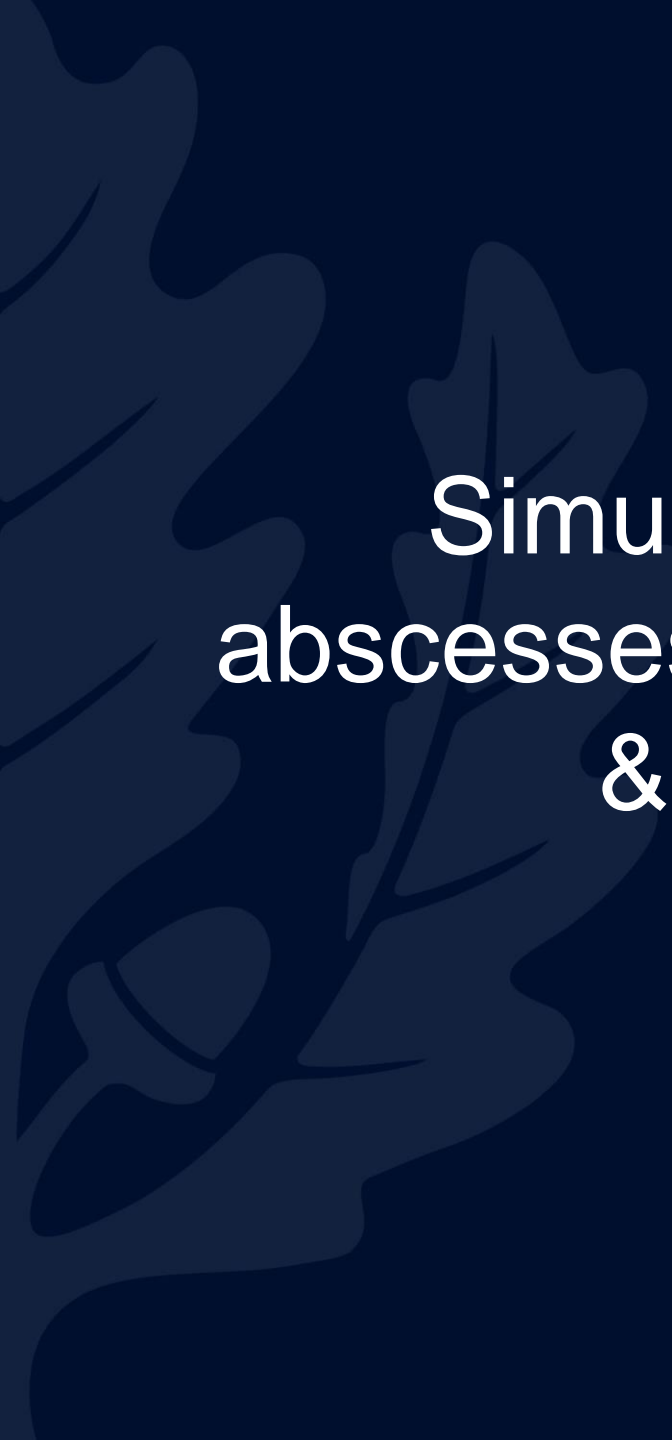




T1-Gd Fat Sat Sagittal

A large, stylized oak leaf graphic in a dark blue color, positioned on the left side of the slide. It features detailed vein patterns and a lobed edge.

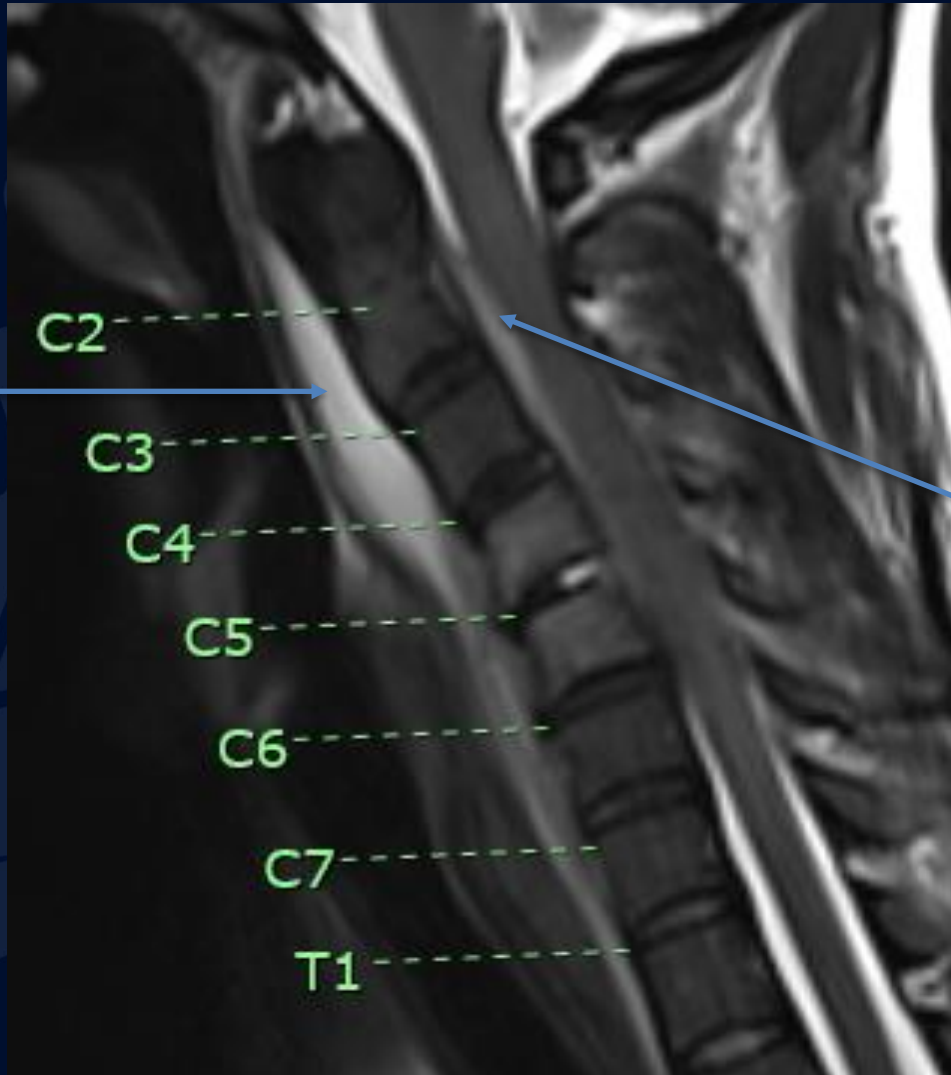
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A large, stylized oak leaf graphic in a dark blue color, positioned on the left side of the slide, partially overlapping the text.

Simultaneous epidural abscesses of the cervical spine & lumbar spine

T2 Sagittal
CSpine

Slight decrease
in CSF
hyperintensity
due to abscess



C2

C3

C4

C5

C6

C7

T1

Prevertebral
edema

T1 Gd Fat Sat

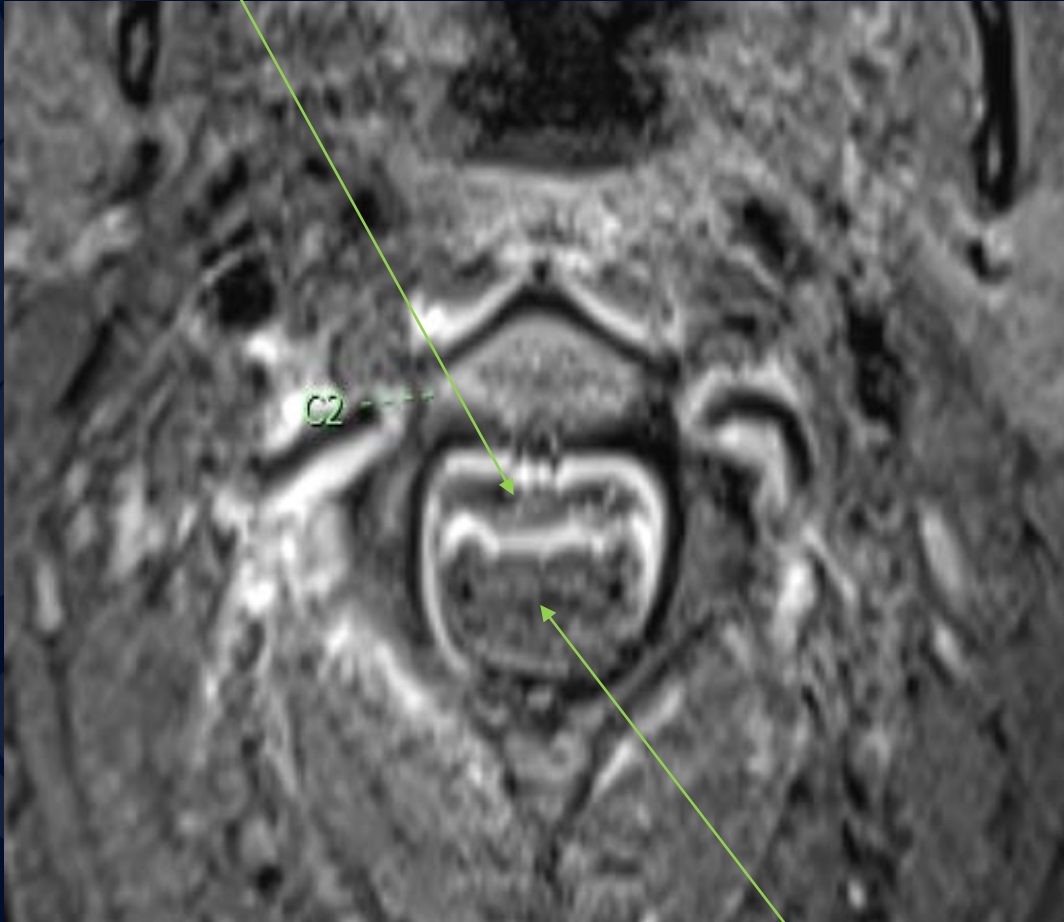


Rim-enhancing epidural process is typical of epidural abscess

Homogeneously enhancing epidural phlegmon

Homogeneously enhancing prevertebral phlegmon

Abscess



T1-Gd Fat Sat

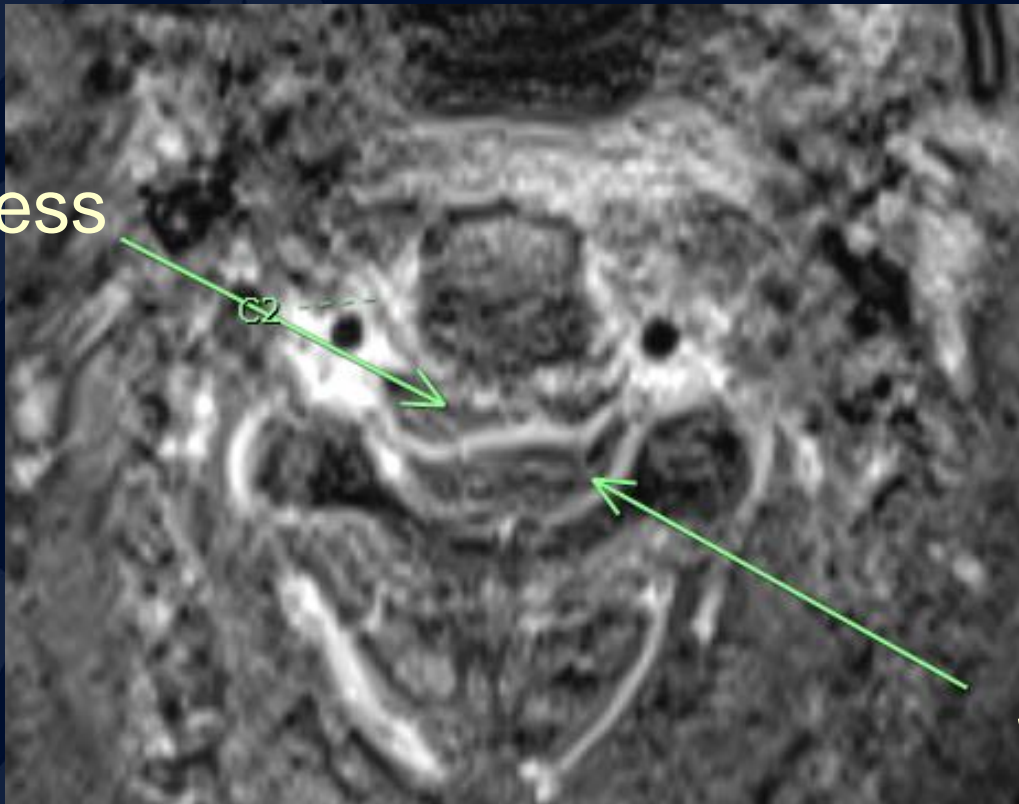
Epidural abscess
can be seen
anteriorly
compressing the
spinal cord

Spinal cord

T1-Gd Fat Sat

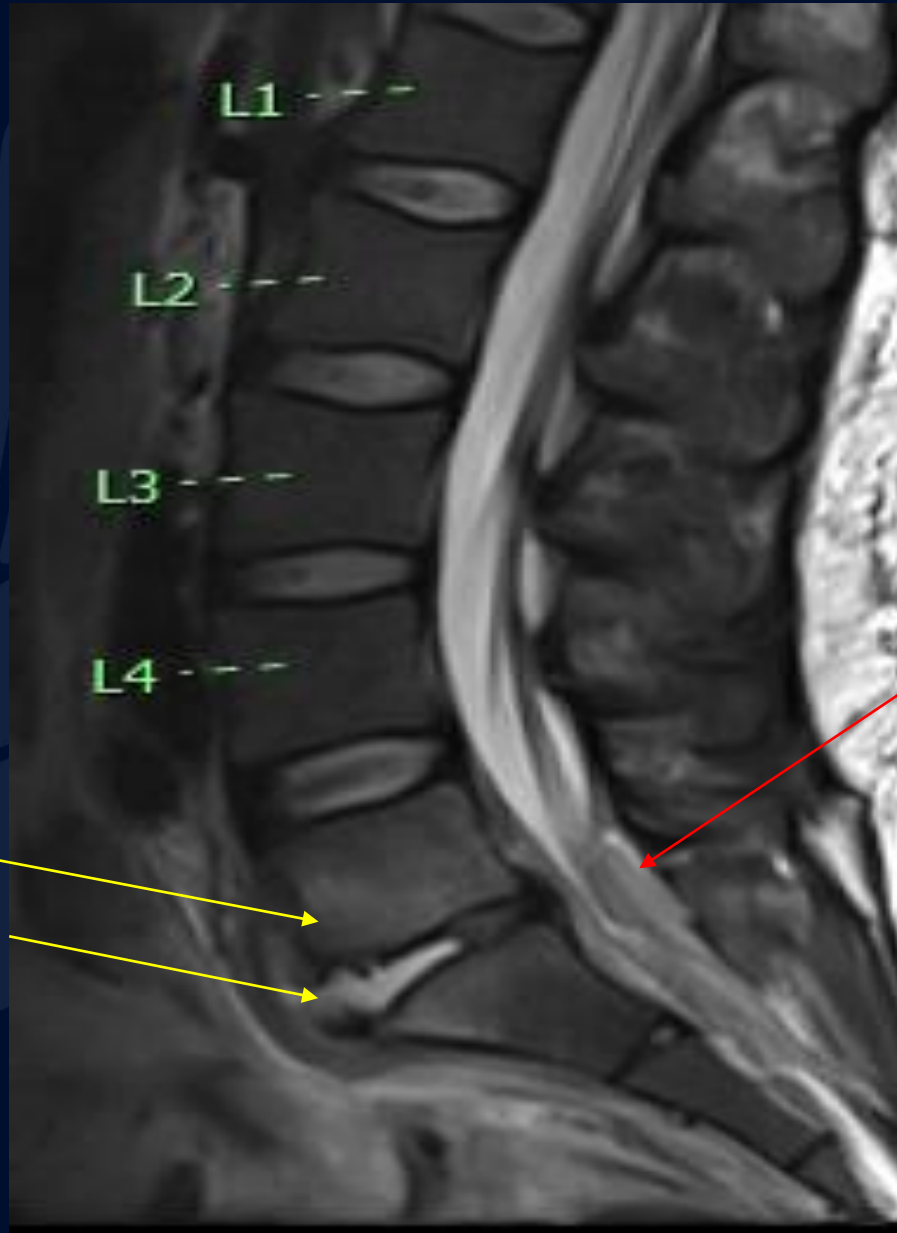
Epidural abscess
can be seen
anteriorly
compressing the
spinal cord

Abscess



Spinal cord

T2 Sagittal



Poorly seen
epidural
abscess

L5/S1
endplates
& intervertebral
disc are
hyperintense,
suspicious for
diskitis



T1 MRI sagittal view,
post-contrast.

Rim enhancement
usually key to
distinguish epidural
abscess from epidural
phlegmon

Epidural Abscess

Vertebral body
enhancement

Spinal Epidural Abscess: Etiology

- Purulent infections within the epidural space, between the dural sac and vertebral body
- Can quickly cause compression of the spinal cord or cauda equina
- Can occur secondary to any infection that results in bacterial sepsis/bacteremia
 - Bacteria can enter the epidural space through hematogenous spread or directly from iatrogenic causes
- Risk factors include IV Drug use, infective endocarditis, dental abscesses resulting in bacteremia, and any iatrogenic intervention that involves entering the epidural space (i.e. injections, catheter placement)

Presentation

- Classic “triad” is fever, spinal pain, and neurologic deficits
- Non-specific symptoms including fever, malaise, generalized pain
- Have a high suspicion in anyone who is a known IV-drug user or has bacteremia with new-onset back pain, weakness, sensory level

Diagnosis

- MRI Gd is needed to reliably distinguish abscess from phlegmon. However, even phlegmon may need decompression.
- STIR & T1 weighted images can be useful in detecting edema of marrow, prevertebral or paravertebral soft tissues

MRI findings

- Pre-contrast
 - Isointense or hypointense to spinal cord
 - Obliteration of normal epidural fat
- Post-contrast
 - Rim enhancement → Abscess
 - Homogeneous enhancement → Phlegmon

Management

- IV antibiotics targeted against the organism (most commonly Staph Aureus)
 - If blood cultures have yet to be drawn, draw two sets of blood cultures prior to initiating empiric antibiotics
- Urgent surgical decompression and drainage may be necessary if there is edema in the cord and concerning neurological deficits

Complications

- Without timely intervention, paraplegia or quadriplegia may result

References

- Spinal Epidural Abscess: Evaluation with Gadolinium-Enhanced MR Imaging. Numaguchi, et al. Radiographics May 1, 1993.
<https://pubs.rsna.org/doi/pdf/10.1148/radiographics.13.3.8316663>.
- UpToDate: Sexton, D. J., and J. H. Sampson. "Spinal epidural abscess." (2016).
- Ferrigno B, Becker K. Spinal epidural abscess. Radiology Online. (2020)