

Vertebral Compression Fractures

The Indications for Vertebral Augmentation and
Clinical Pearls



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Disclosures

- No disclosures

Objectives

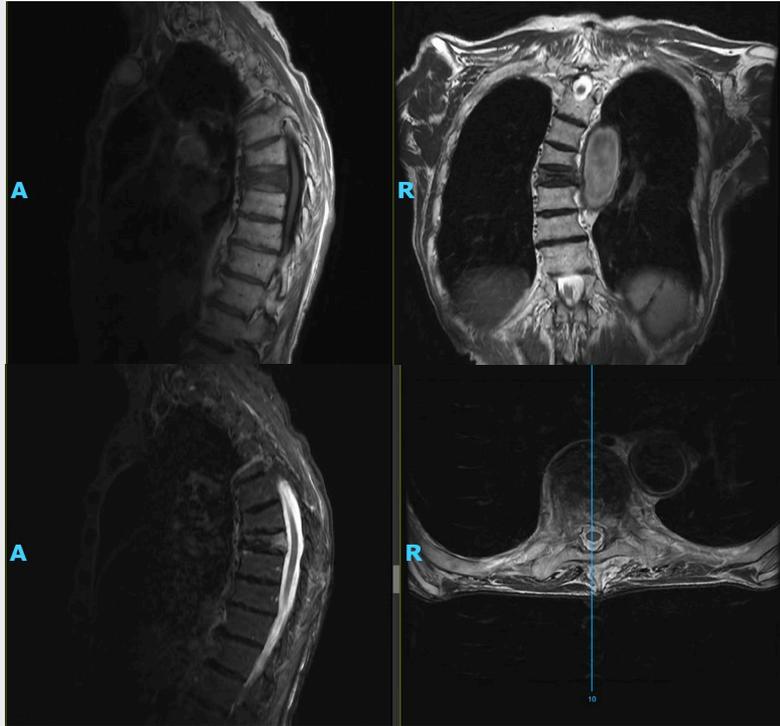
- Review 3 challenging vertebral compression fractures (VCF) cases
- Clinical evaluation and treatment approach
- Review clinical pearls and safety considerations



Case 1

- 91-year-old man with history of atrial fibrillation (on anticoagulation) and CLL presents with mid-thoracic back pain after sustaining a fall. Pain is worse with bending and twisting
- Denies associated radiation down the lower extremities but does report with radiation along anterior thoracic region. He denies bowel/bladder dysfunction or saddle anesthesia
- Tried Oxycodone-Acetaminophen 5-325mg 4-6 tabs/day – limited due to constipation
- Tried interlaminar epidural steroid injection without relief
- Physical Examination:
 - Exaggerated kyphosis
 - TTP along the T7-T8 spinous process and paraspinal region
 - Neurologically intact

MRI of Thoracic Spine



MRI Thoracic Spine w/o contrast

- Acute T8 compression fracture with involvement of the superior and inferior endplate
- Approximately 60% loss of height
- Mild retropulsion of posterior/inferior fragments indenting the ventral thecal sac without cord compression



CT of Thoracic Spine



CT of Thoracic Spine

CT of Thoracic Spine w/o Contrast

- Severe compression fracture of T8 vertebral body with approximately 75% loss
- Mild-to-moderate compression fracture of T10 vertebral body with approximately 35% loss. No significant retropulsion
 - New since MRI of thoracic spine



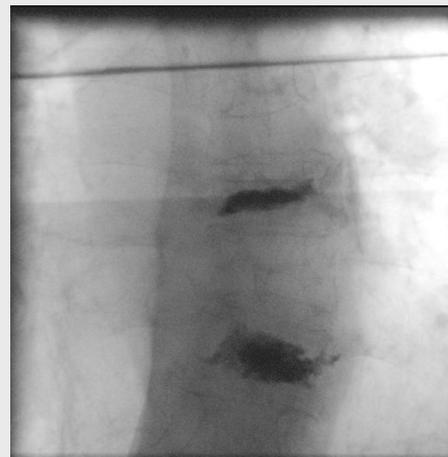
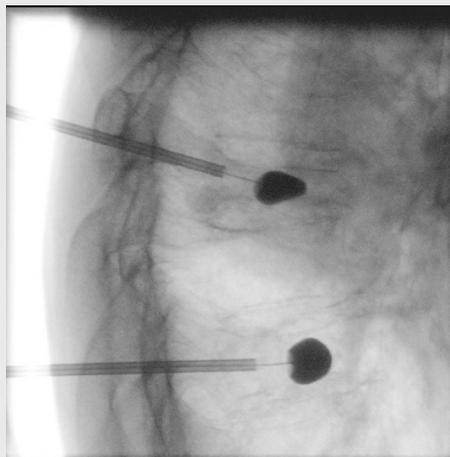
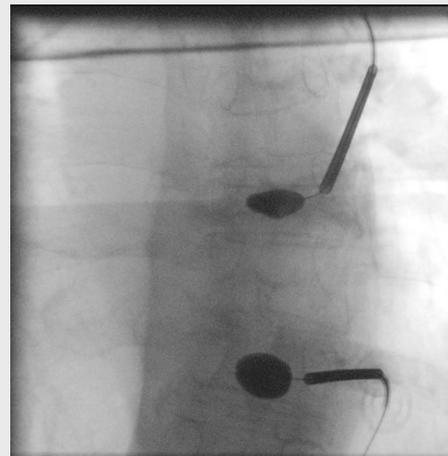
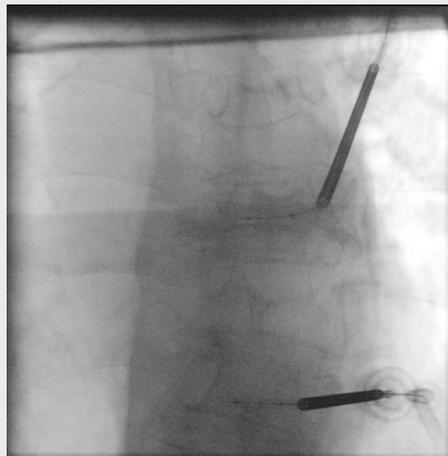
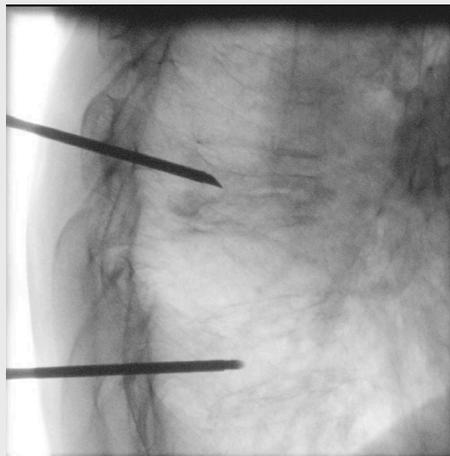


Recap

- Acute to subacute moderate (T10) and severe (T8) VCF. Minimal retropulsion and neurologically intact on examination
- Failed conservative therapy and pain inadequately controlled with oral analgesics
- Told by another provider that patient is not candidate since severe VCF (>75% height loss)

What would you do?





Case 2

- 64-year-old woman with history of lumbar spinal stenosis status post L2-4 lumbar fusion who presents with 1 week history of low back pain. No preceding trauma
- Pain is 10/10 in severity and located in the mid lower back. There is pain radiating to bilateral anterior thigh (chronic)
- Difficulty with ADLs and ambulation secondary due to pain
- Tried Oxycodone-Acetaminophen 5-325mg 1-2 tabs PRN without relief
- No weakness, numbness in extremities or bowel/bladder changes
- Physical Examination:
 - TTP over L5 spinous process and lumbar paraspinal muscles
 - Lumbar flexion limited to 60 degrees with pain
 - Neurologically intact
- **MRI of Lumbar Spine**
 - Acute compression fracture of the superior endplate of L5 with mild height loss





L5 Unipedicular Balloon Kyphoplasty





MRI of Lumbar Spine





Clinical Pearls

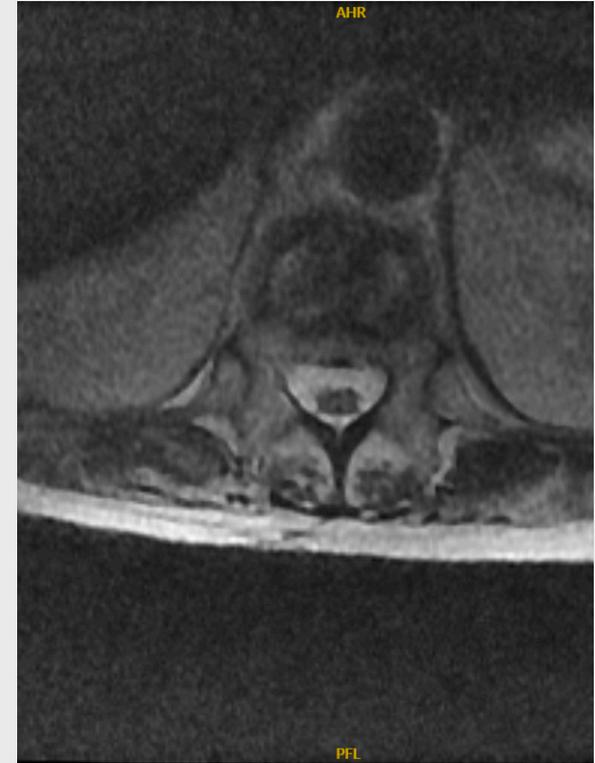
- Always review imaging to help map out approach
- This patient had a L5 superior endplate fracture. Trocar was guided to the superior portion of the vertebral body to fill the the fractured cleft
- Cement extravasation was noted inferiorly into the L5-S1 disc space as the fracture cleft extended into the inferior endplate



Case 3

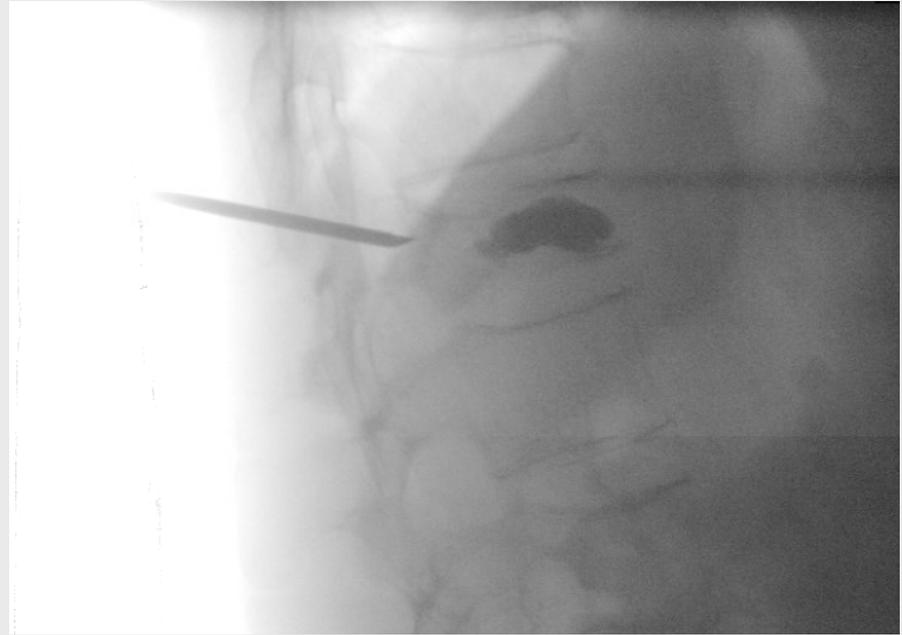
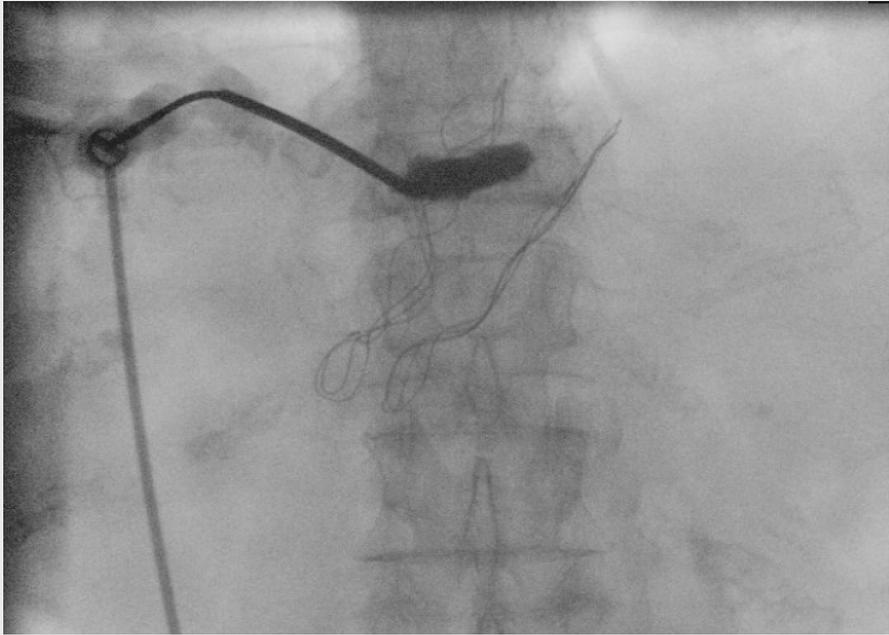
- 82-year-old man with history of osteoporosis who presents with 2-week history of low back pain. No inciting events or preceding trauma
- Pain is located in the mid back and radiating to bilateral buttocks but denies radiation down the extremities
- Ambulates with assistance of rolling walker (baseline)
- Tried hydromorphone 4mg q6h PRN with minimal relief. Limited due to hallucinations
- No weakness, numbness in extremities, bowel/bladder changes or saddle anesthesia
- Physical Examination:
 - TTP along lower thoracic and upper lumbar region
 - Pain with lumbar flexion and extension
 - Neurologically intact

MRI of Lumbar Spine





What would you do?





Clinical Pearls

- Vertebral augmentation can be safely performed in **select** patients who have VCF with retropulsion
- Conduct a comprehensive history and physical examination (especially neurological examination) to ensure no neurological deficits
- The integrity of the posterior vertebral cortex should be carefully evaluated
- Closely monitor cement fill to ensure no extravasation posteriorly
- Discuss risks and benefits of intervention with patient



Questions



Weill Cornell Medicine