USEFUL FINDINGS IN THE EVALUATION OF PATIENTS WITH LOW BACK PAIN

High yield findings on history and physical exam

Disclosures

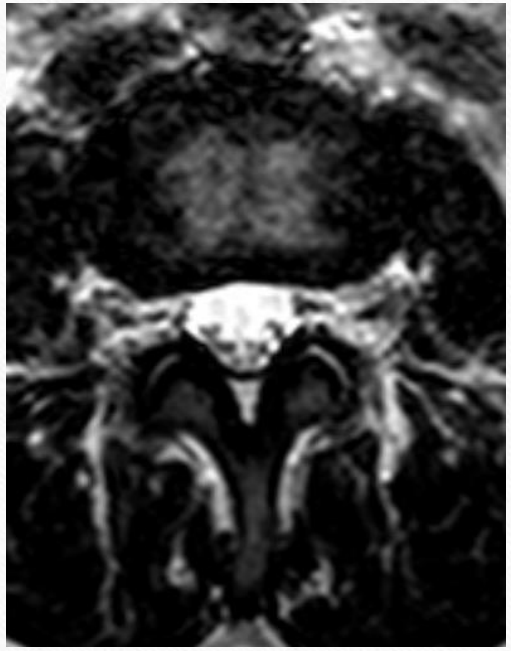
- I have no relevant disclosures for this presentation

What we will go over

- History questions that help to characterize a specific pathology
- Physical exam maneuvers that help to make a more focused diagnosis

What history questions are particularly useful?

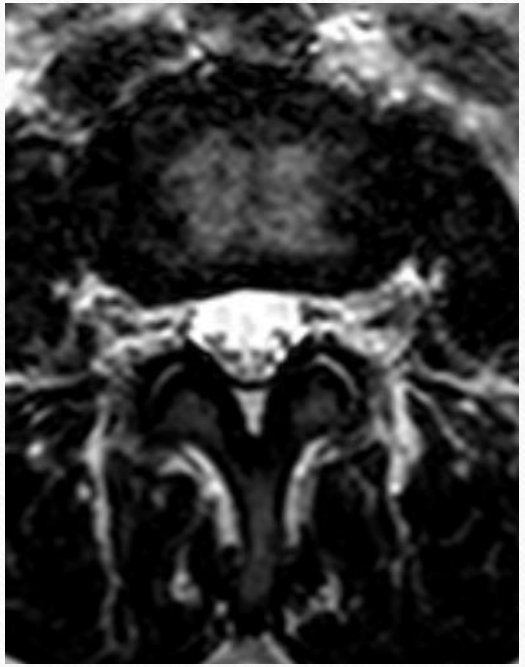
Does it hurt with bending forward/sitting?



This suggests pain from

- the disc
- the vertebral body/vertebral endplates
- muscle strain

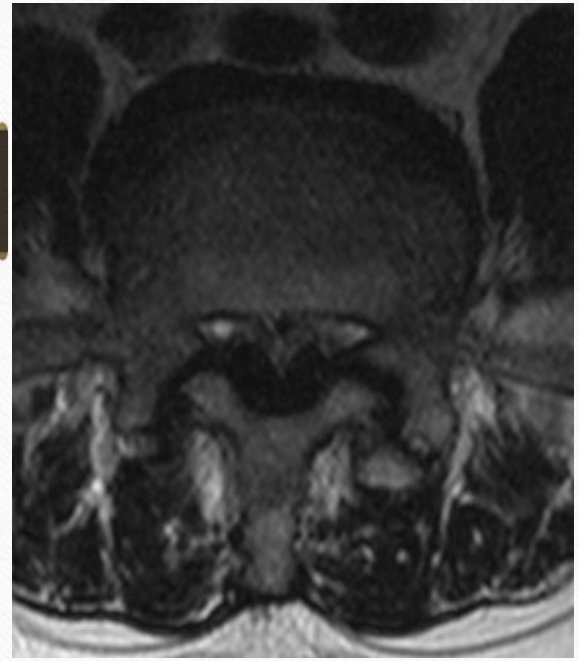
Does it hurt with standing/walking?



This suggests pain from

- The posterior elements (including facet joints)

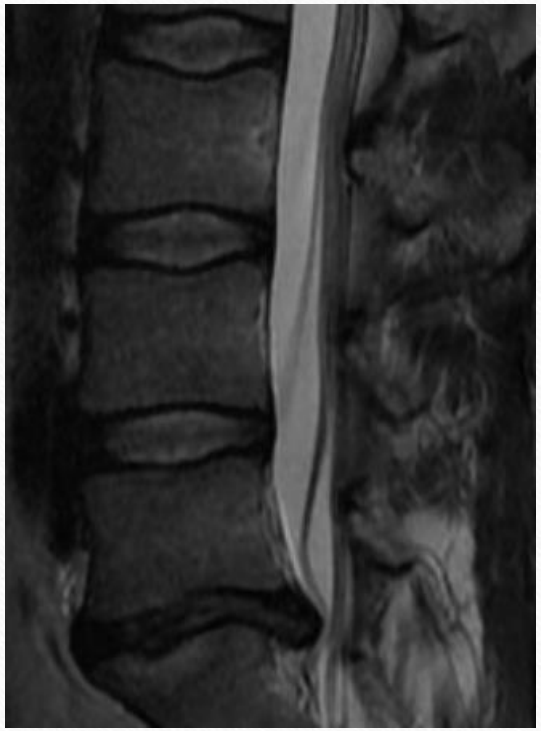
Does it hurt with standing/walking?

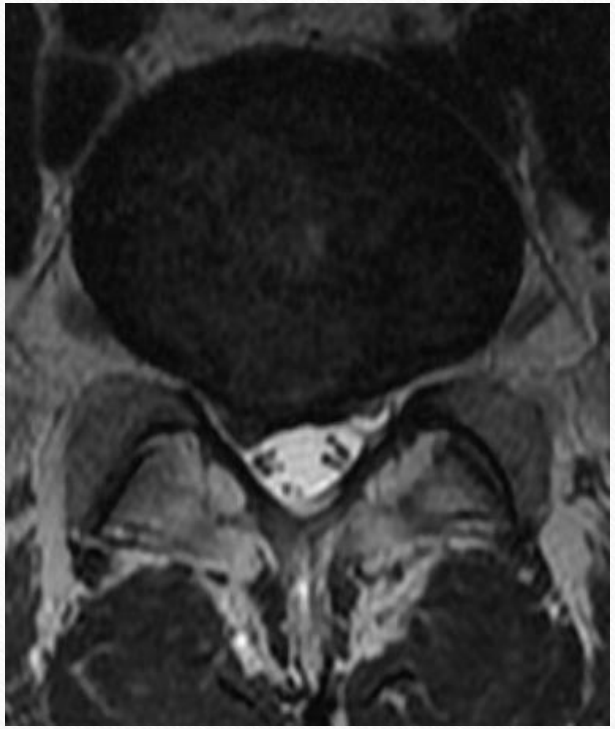


This also can suggest pain from

- Nerve compression- central canal stenosis, lateral recess stenosis, neuroforaminal stenosis

Does the pain go down the leg?

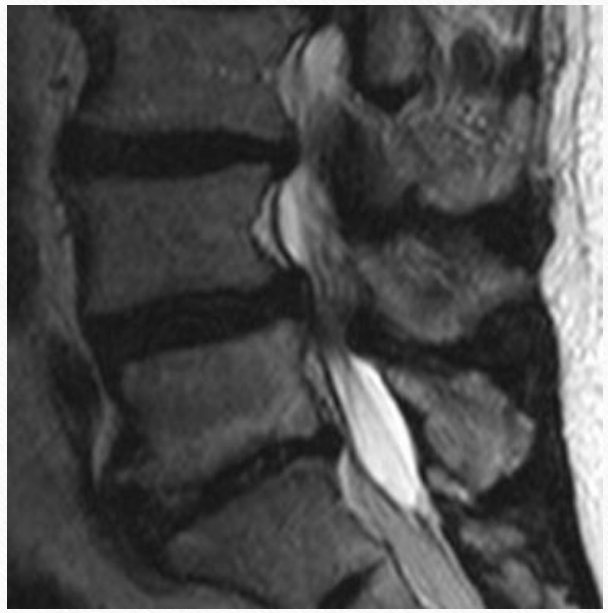


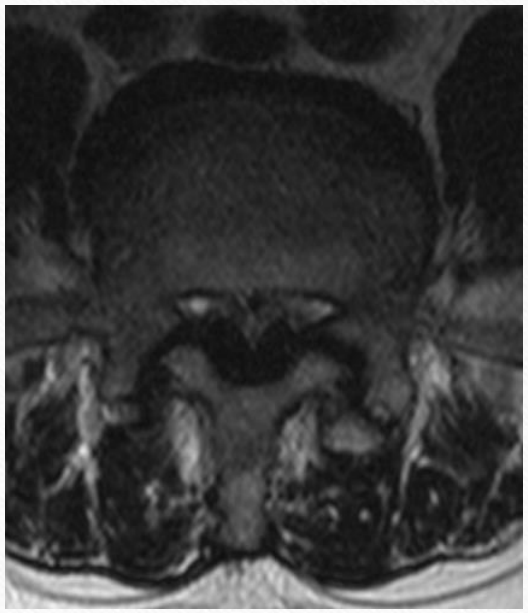


This suggests that

- A disc may acutely be pushing on a nerve

Does the pain go down the leg?





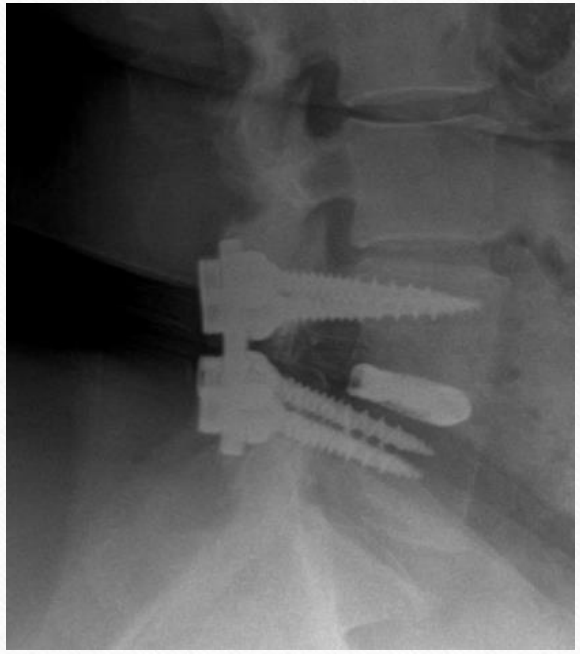
This also suggests that

- There may be chronic nerve compression from stenosis

Does the pain go down the leg?

- Sometimes the pain from a structure in the spine may be referring down the leg without any actual nerve compression
- There may also be pain generation from another joint such as the hip or the knee

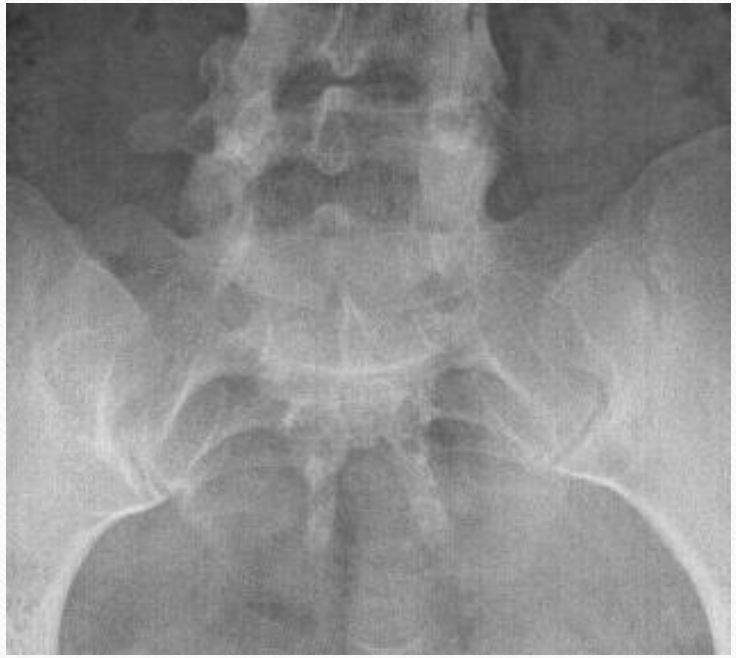
Is there a history of spinal fusion?



This suggests that

- There may be pain at the next motion segment adjacent to the fusion

Is the patient pregnant or recently post-partum



- This increases the probability that the patient has sacroiliac joint pain

Has the pain persisted despite 6 weeks of provider directed treatment?

Provider directed treatment typically includes medication plus one of the following

- formal physical therapy,
- home exercise program handout
- chiropractic course

Has the pain persisted despite 6 weeks of provider directed treatment?

- If yes, then it is very reasonable to get advanced imaging- ideally MRI, but CT okay if contraindication to MRI is present (example- cardiac pacemaker)
- If no, then you can still order advanced imaging, but it has a higher probability of being denied.

Does the patient have a personal history of cancer?

- This lowers my threshold to get advanced imaging even if they have not attempted 6 weeks of provider directed treatment.

Does the patient have a history of osteoporosis or osteopenia?

- This increases my suspicion of a possible fracture.
- I am more likely to order an xray, and based on xray results and physical exam, I might consider getting an MRI more quickly.

Has the patient found it extremely difficult to urinate?

- Do they try to urinate but nothing or very little comes out?
  - This suggests possible cauda equina syndrome. Urgent MRI is indicated.

Is there frequent urination or intermittent leakage?

- This is usually not referred from the lumbar spine
  - It is reasonable to consider getting the mri to confirm no severe compression, and give the patient peace of mind.

Is there numbness/tingling in the rectum/genitalia?

- If there is a constant numbness, this can suggest cauda equina syndrome
- Intermittent numbness is less likely to be from cauda equina syndrome

What physical exam findings are particularly useful?

Do they have a limp?

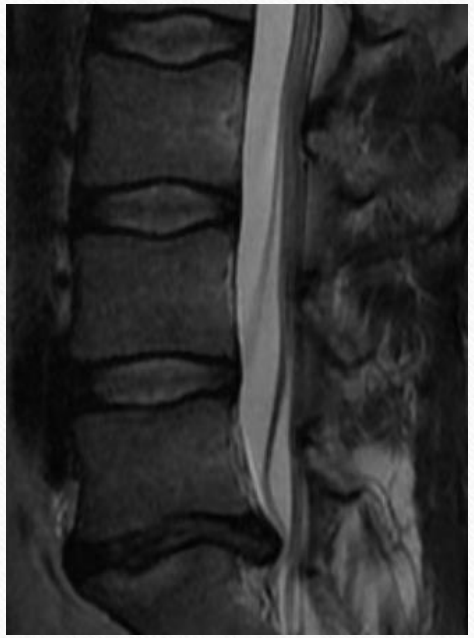
If the patient favors one side, I start to consider that they might also have knee/hip pathology that contributes to their presentation

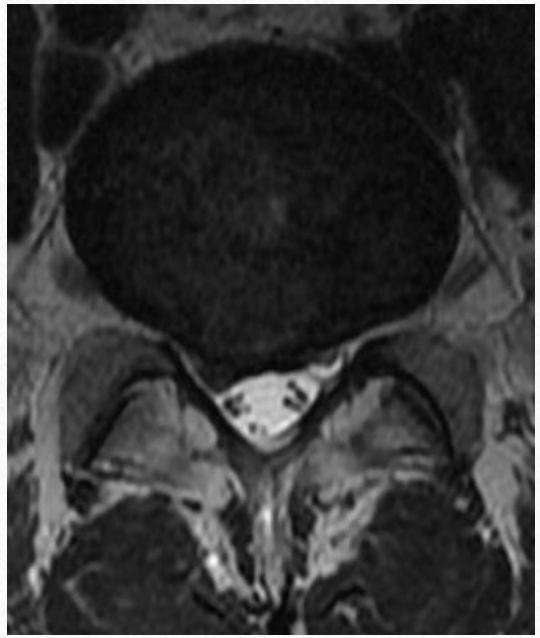
Can they walk on their toes and heels?

- Impaired toe walking can suggest S1 nerve involvement
- Impaired heel walking can suggest L4 and/or L5 involvement

- Other pathologies can also cause impaired toe and heel walking besides the spinal nerve compression

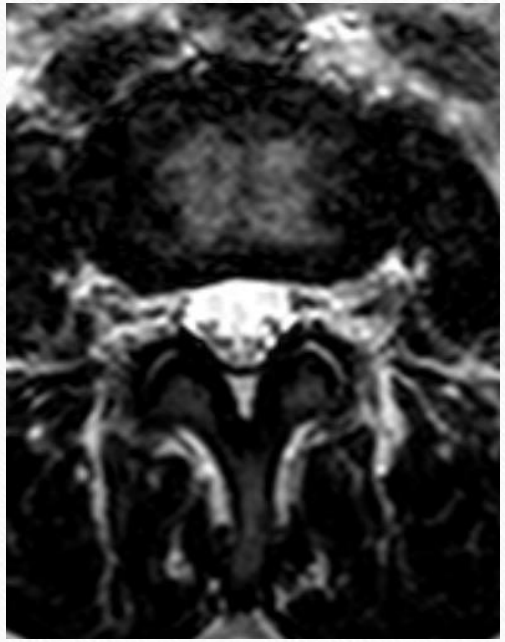
Does range of motion testing hurt?





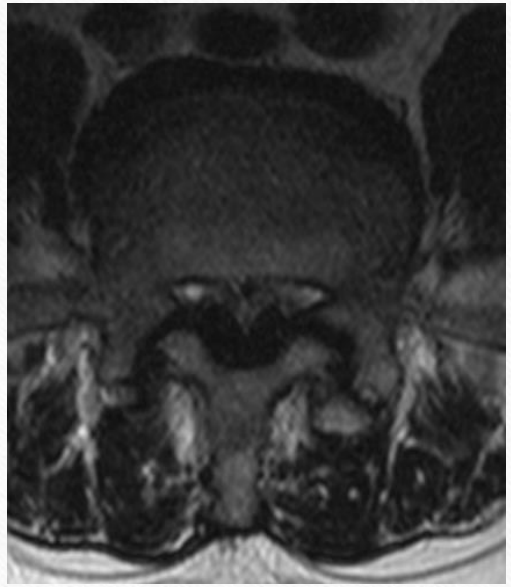
- Flexion pain- can be disc injury or vertebral body injury/pain (or muscle strain)

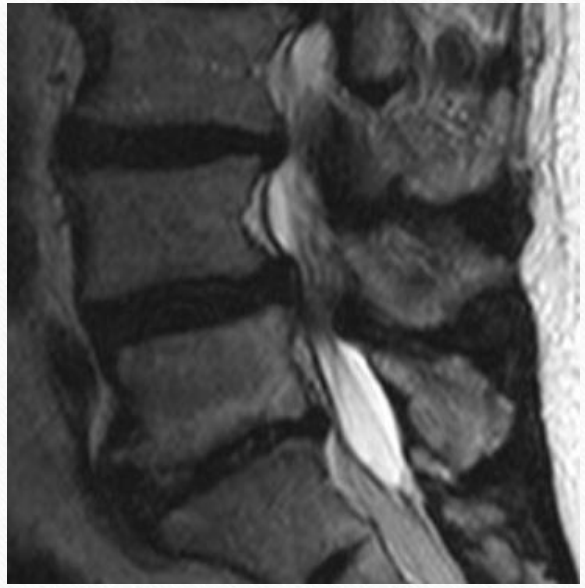
Does range of motion testing hurt?



- Extension pain- can be pain from posterior elements such as facet joints
- Extension and rotation pain- also suggestive of facet joint pain

Does range of motion testing not hurt?





- If there is pain with prolonged standing and walking, AND NO PAIN WITH ROM TESTING, I start to think that lumbar stenosis is more likely
- The actual compression of the nerves is more bothersome than pain from degeneration of the joints/discs.

What are some common neurologic deficits that I look for?

- Strength
- Sensation
- Reflexes/ Dural stretch testing

Common Strength abnormality

- Great toe extension weakness and hip abduction weakness can suggest lumbar 5 nerve pathology

Common Sensation abnormality

- Numbness in the great toe and/or the lateral foreleg can suggest Lumbar 5 nerve pathology
- Great toe numbness alone can be a little trickier, as this can be the first area that gets numb in peripheral polyneuropathy

Common Sensation abnormality

- Numbness in stocking distribution is more suggestive of peripheral polyneuropathy, and less suggestive of numbness referred from lumbar spine.

Common Reflex/ Dural stretch testing abnormality

- Hyporeflexia can be consistent with a lower motor neuron lesion such as a radiculopathy
- Hyperreflexia is more concerning for an upper motor neuron lesion such as cervical stenosis or myelopathy.
  - This will make me do an additional assessment on the upper limb reflexes, and potentially consider getting an MRI of the cervical spine

Common Reflex/ Dural stretch testing abnormality

- A positive supine leg raise typically reproduces pain and/or electricity and/or burning sensation down the leg that is being lifted
- Most people have tight hamstrings
- Tightness/stretching sensation does not typically qualify as a positive test

Is hip internal rotation reduced on one side? Does hip internal rotation cause groin pain?

- If the answer to either of these is yes, it suggests that there might be pain from the hip joint and possibly hip joint pathology (such as labral tear or arthritis).

Does supine bridge testing cause leg cramping?

- This is very helpful when somebody sounds like they have lumbar stenosis, but the physical exam is unremarkable.
- Often times this maneuver will cause hamstring cramping/pain.
- In order to increase the sensitivity of this maneuver, I sometimes have the patient do a single leg supine bridge to try to elicit cramping in the stance leg.

Other miscellaneous questions that I get asked frequently

Can I get and/or Do I need an MRI?

- It depends
  - If no red flags, and no trial of conservative treatment, then I typically recommend holding off on MRI
  - If red flag is present and/or 6 weeks of conservative treatment has been attempted, then I am more likely to order the MRI

What red flags do I look for?

- Tumor/cancer
- Infection
- Fracture
- Worsening neurologic deficits
- Symptoms of cauda equina syndrome
- Renal pathology (stone/infection)

Could it be piriformis syndrome?

- This is possible, but not likely
- Classically piriformis syndrome is when the piriformis muscle compresses the sciatic nerve as it goes through the piriformis muscle belly.
  - In my experience, it is much more common for pain to be referred from the lumbar spine

What exercises should I do?

- I recommend trying to focus on exercises that maintain a neutral spine and exercises that avoid repetitive bending and twisting

A couple of exercise video links

- Here is a link for a video I created about managing back and neck pain with therapeutic exercises, as well as some other recommendations for good form for daily activities.
- This first link is a video that shows the entry level exercises that I recommend most people start with.

- https://youtu.be/ombuGDoUX7s

- This next link is for a newer video. This goes over exercises that can give you a total body workout. If the exercises from the first link seem too easy, then I recommend that you can try to move on to the exercises in the below link.

- https://youtu.be/BtyAbVLd6u0

- If these exercises feel good do them.
- If they don't feel good, don't do them.

Thank you for attending this lecture.
Questions?