

CLINICAL PRESENTATION AND RADIOLOGY QUIZ QUESTION

The patient is a 71 year old with new onset of severe right lower extremity pain radiating from the top of the buttock through the lateral thigh as far as the knee.

Which of the following is NOT a “red flag” indicating the need for priority imaging in a patient with spine symptoms?

- (a) a personal history of malignancy
- (b) radicular distribution of pain
- (c) pediatric age
- (d) constitutional symptoms (for example, weight loss or fever)

RADIOLOGY QUIZ QUESTION, ANSWER, AND EXPLANATION

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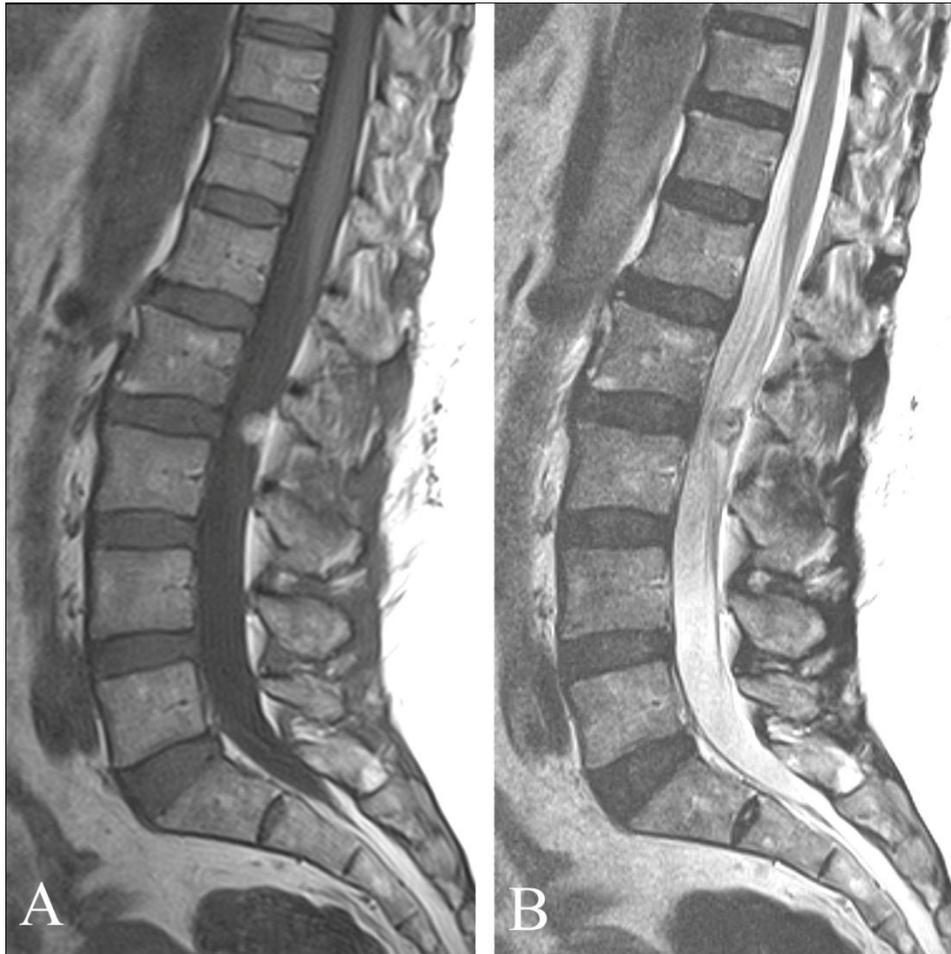
Which of the following is NOT a “red flag” indicating the need for priority imaging in a patient with spine symptoms?

- (a) a personal history of malignancy
- (b) radicular distribution of pain
- (c) pediatric age
- (d) constitutional symptoms (for example, weight loss or fever)

Answer: (b), radicular distribution of pain is NOT a “red flag” and therefore (b) is the correct answer.

Recommendations about which patients with back pain and/or radicular symptoms to image, and when to image them, varies. Generally, “red flags” prompt earlier evaluation. “Red flags” include: young (pediatric) or old (arbitrarily somewhere around 50) age; a personal history of malignancy; significant trauma, or such systemic features as weight loss, fever, or night sweats. Therefore, since (a), (c), and (d) are all “red flags,” these answers are incorrect.

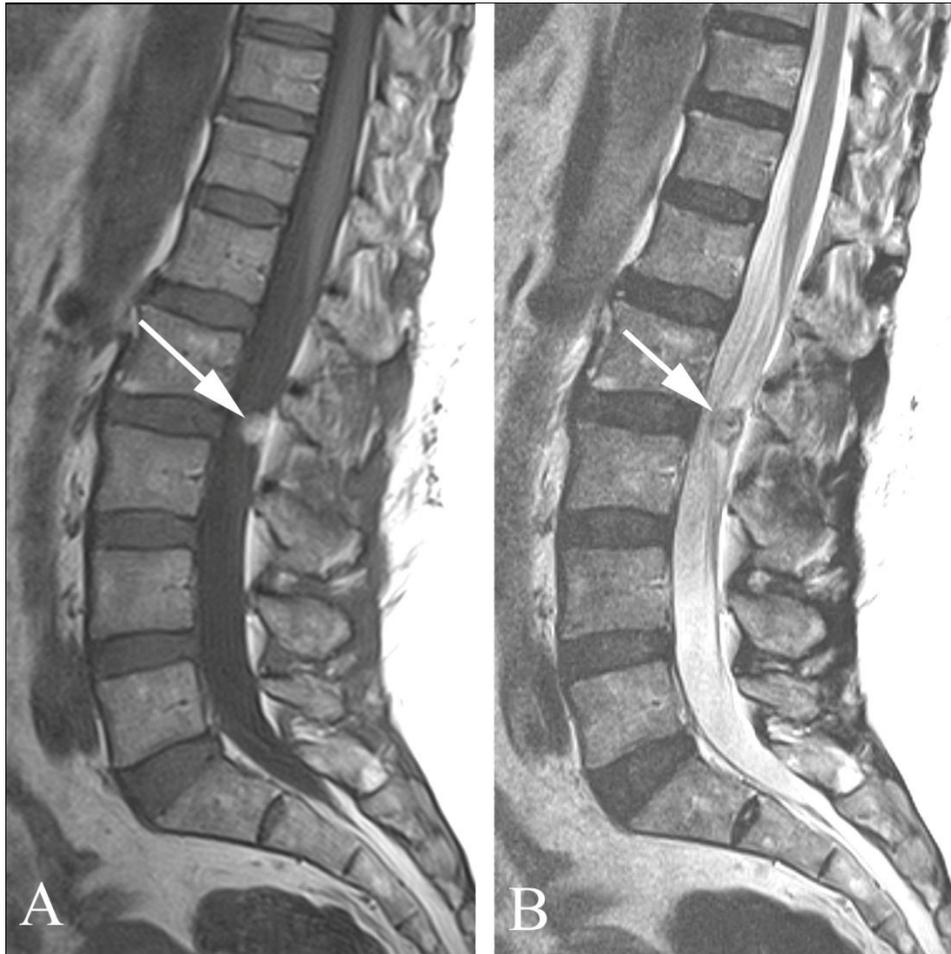
IMAGING STUDY AND QUESTIONS



Imaging questions:

- 1) What type of study is shown in the figure?
- 2) Are there any abnormalities?
- 3) What is the most likely diagnosis?
- 4) What is the next step in management?

IMAGING STUDY QUESTIONS AND ANSWERS

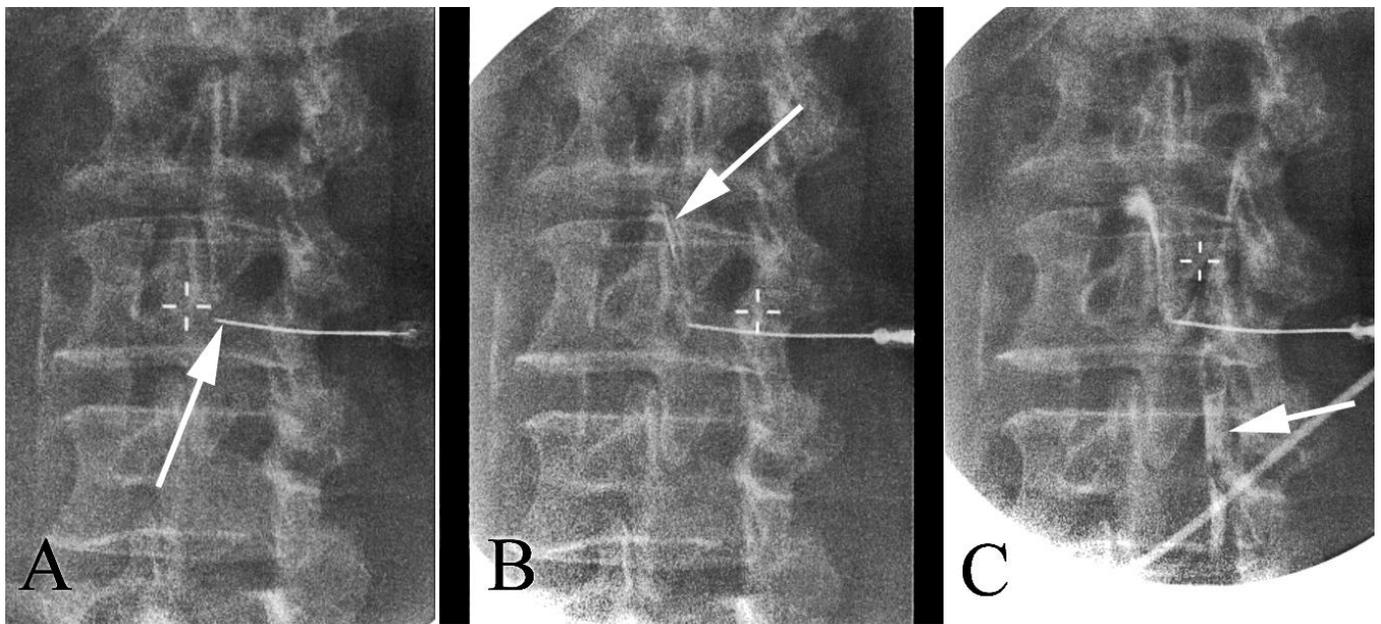


- 1) What type of study is shown in the figure? This is a lumbar spine magnetic resonance imaging (MRI) examination. A is a sagittal T1 weighted image and B is a sagittal T2 weighted image.
- 2) Are there any abnormalities? Both images show an abnormality of the spinal canal at the L2/L3 level (arrows).
- 3) What is the most likely diagnosis? Synovial cyst formation, with proteinaceous debris or hemorrhage accounting for the increased signal on the T1 weighted image.
- 4) What is the next step in management? Controversial. One method of treatment for these abnormalities is to inject the associated facet joint with contrast material (to establish needle position), then to inject a combination of steroid and anesthetic.

PATIENT DISPOSITION, DIAGNOSIS, AND FOLLOW-UP

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The patient was given oral analgesics and set up for percutaneous facet joint injection. Following injection, the patient achieved excellent but temporary relief. The patient underwent a second injection approximately three months later. Once more, she achieved temporary relief with a reduction in pain lasting for approximately eight weeks. The patient was referred to a neurosurgeon, who recommended one more injection prior to surgery. The third injection was performed, and once more provided good but transient pain relief. The patient was scheduled to undergo surgical resection of the cyst with a foraminotomy.



71 year old woman with leg pain secondary to a lumbar spine synovial cyst. A. Oblique fluoroscopic digital spot film shows the needle tip along the inferior aspect of the right L2/L3 facet joint (arrow). B. Oblique fluoroscopic digital spot film shows the injection needle, along with a tiny amount of contrast material (white arrow) extending through the L2/L3 facet joint to the superior aspect of the joint. C. Oblique fluoroscopic digital spot film shows the injection needle, more contrast material in the joint (than in B.), and contrast extravasating from the joint into the epidural space (arrow), an indication of cyst rupture.

SUMMARY

Presenting symptom: Back pain is a ubiquitous disorder and a frequent cause for visits to primary care providers. 90% of people experience back pain at some point in their life, and half of working people have pain every year. Far fewer people experience radicular pain. Classic radiculopathy presents as a narrow band of sharp pain that typically follows a dermatomal distribution. Radiculopathy may be caused by disc herniation, facet joint disease, fracture, tumor, and infection. Furthermore, both somatic referred pain (from spine abnormalities) and peripheral nerve pain (from, for example, entrapment syndromes) may mimic radiculopathy.

Imaging work-up: Given the widespread occurrence of radicular pain (and its mimics), imaging all patients with back pain is not cost effective. As with back pain, multiple attempts have been made to devise lists to limit imaging to situations where it is likely to have the greatest benefit in patient care. As in back pain, recommendations generally call for expedited imaging of patients with “red flags.” Patients with progressive neurologic weakness or numbness should probably undergo urgent imaging. Patients with persistent pain may benefit from imaging. Most algorithms call for performing plain films first, but whether the plain films are normal or show an abnormality, MR is usually obtained as well.

Establishing the diagnosis: In this case, the MR exam showed classic features of an L2/L3 synovial cyst. Such cysts may be the cause of acute radicular pain in a surprising number of patients. As with treatment of other causes of back pain and radiculopathy, there is a lack of evidence-based guidelines for management. Synovial cysts are not malignant lesions and will typically regress with time, but if the patient has severe pain or develops a neurologic deficit, injection into the associated facet joint (with the goal of rupturing the cyst and thus relieving pressure on the nerve) or surgical resection of the joint are both options for treatment.

Take-home message: Not all patients with spine pain require imaging, but if imaging is required, MR is the study of choice. Plain films may be obtained prior to MR imaging.

FURTHER READING

Renfrew, DL. Spine pain. Chapter 6 of *Symptom Based Radiology*, Symptom Based Radiology Publishing, Sturgeon Bay, WI, 2010, available for no charge at www.symptombasedradiology.com.

Staiger TO, Gatewood M, Wipf JE, Deyo RA. Diagnostic testing for low back pain. UpToDate, accessed 3/14/2011.

Wheeler SG, Wipf JE, Staiger TO, Deyo DA. Approach to the diagnosis and evaluation of low back pain in adults. UpToDate, accessed 3/14/2011.