

Low back pain: what is the role of imaging?

Justin Edward, MD

Story From the Front Lines

A 37-year-old man with no past medical history presented to the emergency room with a four-day history of low back pain. He awoke with sudden onset of pain and denied any history of preceding trauma or inciting event. History was significant for shooting pain from the lower back to the knees bilaterally. He denied recent corticosteroid use, bowel or bladder incontinence, fevers, and night sweats. He tried over-the-counter acetaminophen and ibuprofen with no pain relief. No significant neurological deficits were noted on physical exam. Lumbar spine plain X-ray revealed mild scoliosis of the lumbar spine and mild facet joint degeneration. He was prescribed cyclobenzaprine and given a methylprednisolone dose pack and told to follow-up in outpatient clinic. Two weeks later his pain had improved significantly though presented to our clinic with concerns related to the results of his “abnormal” spinal imaging.

Teachable Moment

Low back pain is the 5th most common reason for all physician visits in the United States and approximately 25% of American adults report an episode of low back pain lasting at least 24 hours in the past 3 months.¹ Lumbar imaging for low back pain is an inconsistent practice. Some clinicians perform lumbar spine plain films routinely or without a clear indication, in part to reassure their patients and themselves, to meet patient expectations regarding the role of diagnostic tests, or to search for an anatomical cause of low back pain.² Routine imaging, however, can be harmful because of radiation exposure and the risk of labeling a patient with an anatomic diagnosis that may be unrelated to the cause of symptoms.

The majority of patients with low back pain less than four weeks duration do not require imaging. Current guidelines are consistent in their recommendations that a focused history and physical examination should include the identification of red flag symptoms, which include: age at onset (<20 or >55 years), significant trauma, history of cancer, corticosteroid use, unexplained weight loss, and widespread neurologic changes. Though identification of these symptoms is suggested, there remains a lack of consensus between guidelines regarding which red flags to endorse, and as a result, there is limited data to support the use of red flags as a indication for early imaging.^{3,4} The presence of significant neurological deficits, however, necessitates immediate imaging. Patients with symptoms of spinal cord compression or cauda equina syndrome who present with new bowel or bladder incontinence, saddle anesthesia, urinary retention, and significant motor deficits not localized to a single nerve root should have an immediate MRI. On the other hand, patients with radiculopathy at one spinal level do not need immediate imaging.

In a systematic review and meta-analysis of six trials, lumbar imaging for low back pain without evidence of serious underlying conditions did not improve clinical outcomes at up to one year with regards to patient pain or function.⁵ Inappropriate imaging of the lumbar spine can lead to irrelevant findings and trigger further diagnostic testing that is not warranted for the patient. Joint guidelines from the American College of Physicians and American Pain Society do not recommend routine imaging for nonspecific low back

pain.¹

Lumbar imaging of this patient's acute low back pain due to signs of radiculopathy on exam and in absence the red flag symptoms is not only unjustified on the basis of current recommendations, but also a cause of harm. This patient was needlessly exposed to radiation and provided an anatomic diagnosis, which did not explain the cause of his pain. This patient should have been encouraged to remain active, provided self-care information, and given a trial of ibuprofen and acetaminophen before reassessment in 4-6 weeks to monitor for improvement in symptoms.

References

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