

Is MRI Necessary for Recent Onset Lumbosacral Pain without Radicular Features?

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Objective

- Describe a clinical case report in the context of practice guidelines regarding advanced spine imaging.

Background

- Several guidelines and recommendations exist for the management of imaging for chronic nonspecific low back pain.

Guidelines

American College of Radiology Appropriateness Criteria	MRI of the lumbar spine is not indicated for acute or subacute, uncomplicated low back pain or radiculopathy in the absence of red flags ¹ <i>American College of Radiology ACR Appropriateness Criteria®</i>
American College of Physicians and the American Pain Society	Routine advanced imaging (CT or MRI) for nonspecific low back pain is not recommended. <i>Ann Intern Med. 2007;147(7):478-491.</i>
Agency for Healthcare Policy and Research	Adults younger than 50 with <6 weeks of low back pain (with/without sciatica) and no signs or symptoms of systemic disease, imaging is not appropriate. <i>U.S. Department of Health and Human Services, Public Health Service, AHCPR; 1994 Dec. 160 p.14.</i>
2006 European guidelines for the management of chronic nonspecific low back pain	Do not recommend radiographic imaging for chronic nonspecific low back pain. Do recommend MRI in patients with serious red flags ² and for evaluation of radicular symptoms <i>Eur Spine J (2006) 15 (Suppl. 2): S192-S300</i>

¹ History of cancer, unexplained weight loss, immunosuppression, urinary infection, IV drug use, chronic steroid use, back pain with failed conservative management, significant trauma, fall or heavy lifting in osteoporotic or elderly individual, acute onset of urinary retention or incontinence, loss of anal sphincter tone or fecal incontinence, saddle anesthesia, progressive motor weakness

² Patients younger than 20 or older than 55, non-mechanical pain, thoracic pain, history of cancer, steroid use, structural changes, general unwellness, loss of weight, diffuse neurological deficit, spinal pathology such as tumor, infection, inflammatory disorder, fracture, caudal equina syndrome.

History/Physical

40 year-old female with no prior medical history

Atraumatic nonradiating lumbosacral pain



No relief with over-the-counter NSAIDs

Resolved after 2 weeks of massage therapy



3 weeks prior to presentation, developed recurrent lumbosacral pain with mild lower extremity pain



Oral glucocorticoids resolved radicular pain



At the first visit to the Hospital for Special Surgery pain management clinic, the patient only presented with axial lumbosacral pain without radicular symptoms. The pain is exacerbated by forward flexion and lifting. Physical exam showed minimal tenderness over lumbar facet column and minimal sacroiliac joint tenderness

Lumbar Spine MRI

2 cm contrast enhancing intrathecal mass peripherally displacing surrounding nerve roots at the level of L3.



PRESURGICAL



POSTSURGICAL

Myxopapillary Ependymoma

Common clinical presenting symptom:

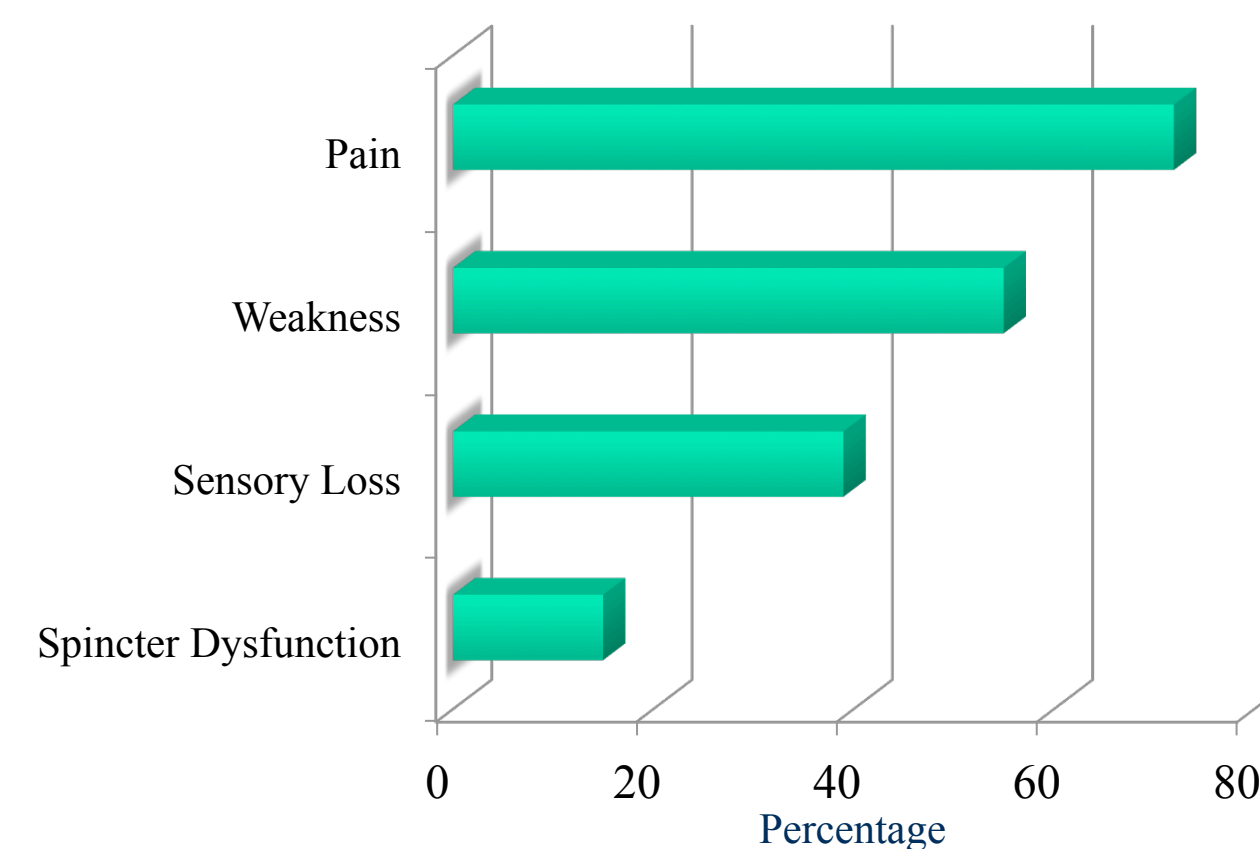


Chart created using data from Neurosurgery. 2005;56:972-81

Of the patients with primary spinal cord tumors who presented with pain, approximately 1/3 presented with only back pain, 1/3 presented with radicular pain, and the final 1/3 presented with central pain.

MRI findings for myxopapillary ependymoma:

- Focal enlargement of the cord
- Hyperintensity on T2W
- Hypo or isointensity on T1W.

Treatment

Surgery is the most effective treatment and complete resection is key to preventing recurrence.

Neurosurg. 1985;63:492-9.

Conclusion

Despite the acute and uncomplicated presentation of this patient's lumbosacral pain, this patient's underlying pathology was of substantial potential future harm. After resection of the tumor, the surgical pathology indicated myxopapillary ependymoma. This is a rare, usually low grade tumor that often arises from the filum terminale and almost exclusively at the conus medullaris. The tumor is associated with a benign course but occasionally malignant histologic subtypes can occur. Clinical presentation of the tumor is nonspecific and often missed until neurologic compromise such as sensory, motor, bowel, and bladder dysfunction occurs.

While the majority of nonspecific back pain without red flags is typically not a sign of underlying serious disease, unusual spine lesions such as the one presented in this case may go undiagnosed without the use of advanced imaging techniques such as magnetic resonance imaging. Malignant tumors such as high-grade glioma can be missed if MRI was not used.

Guidelines from ACR, ACP, APS, and AHCPR can help reduce the cost of medical expenses by limiting the need for advanced imaging. However, red flags must be carefully evaluated in each case and clinical judgments should be used to determine necessity of the imaging.