



Case Report

# Missed thoracic myelopathy: Do not throw the hammer away yet

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## ABSTRACT

**Background:** Spinal stenosis may result in myelopathy, radiculopathy, and neurogenic claudication. It is often difficult to differentiate between these conditions. A comprehensive history and physical examination and a magnetic resonance imaging (MRI) of the entire spine accurately confirm the diagnosis.

**Case Description:** Here, we report a patient with low back and progressive bilateral lower extremity pain, numbness, and weakness with bowel incontinence, urinary retention, and gait abnormalities. A lumbar MRI demonstrated multilevel severe spondylosis/stenosis from L3-S1. The patient underwent a decompressive lumbar laminectomy from L3-5. However, the patient continued to experience the same symptoms postoperatively along with flexor spasms of the left leg, dystonic posturing of the left foot, hyperactive bilateral patellar and Achilles deep tendon reflexes, and a Babinski sign. An NCV of the legs revealed no lumbar radiculopathy. The thoracic MRI, however, demonstrated severe spondylosis at the T11-12 level attributed to a large synovial cyst. Following decompression/cyst resection, the patient's symptoms partially resolved within 1 postoperative month.

**Conclusion:** Spinal surgeons should be alert to the potential for overlapping symptoms/signs of thoracic myelopathy and lumbar myeloradiculopathy. If there are features of upper and lower motor neuron disease, MR scans of the entire spine are necessary before lumbar surgical decompression to identify significant cephalad surgical pathology.

**Keywords:** Magnetic resonance imaging, Misdiagnosis, Myelopathy, Spine, Spinal stenosis

## INTRODUCTION

A small subset of patients with lumbar myeloradiculopathy may also have superimposed cervical or thoracic disease.<sup>[1,4]</sup> Here, we present a patient originally diagnosed with severe L3-5 lumbar spondylosis/stenosis who underwent surgical decompression, only to find that his symptoms failed to resolve due to the superimposed thoracic myelopathy. This report emphasizes the need to carefully screen the cephalad neuraxis (e.g., cervical and thoracic spine) when patients present with symptoms/signs atypical for lumbar disease alone.

## CASE REPORT

### History, examination, and surgical intervention

A 72-year-old male (height 5'11", weight 217 lbs [98.6 kg], and body mass index [BMI] 29.48 kg/m<sup>2</sup>) presented with a 1-year history of progressive bilateral low back pain,

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numbness, and weakness accompanied by 2 months of bowel incontinence and urinary retention. On examination, he exhibited mild bilateral lower extremity weakness (e.g., hip adduction [4/5 bilaterally], quadriceps [4/5 bilaterally], and dorsiflexion [4/5 left]). The lumbar magnetic resonance imaging (MRI) with and without gadolinium demonstrated L3-S1 severe spondylosis/stenosis, for which he underwent a L3-5 decompressive laminectomy [Figure 1a-d].

### Postsurgical course

Two weeks postoperatively, he continued to experience numbness and weakness of both lower extremities and continued sphincter incontinence. The postoperative lumbar MRI with and without gadolinium showed typical postsurgical changes from L3-S1. Five months later, he still had a residual motor deficit (4/5), diffuse bilateral hyperreflexia/bilateral Babinski responses, decreased pinprick/light touch in both lower extremities (no specific level), and decreased vibratory sensation over the ankles and knees bilaterally.

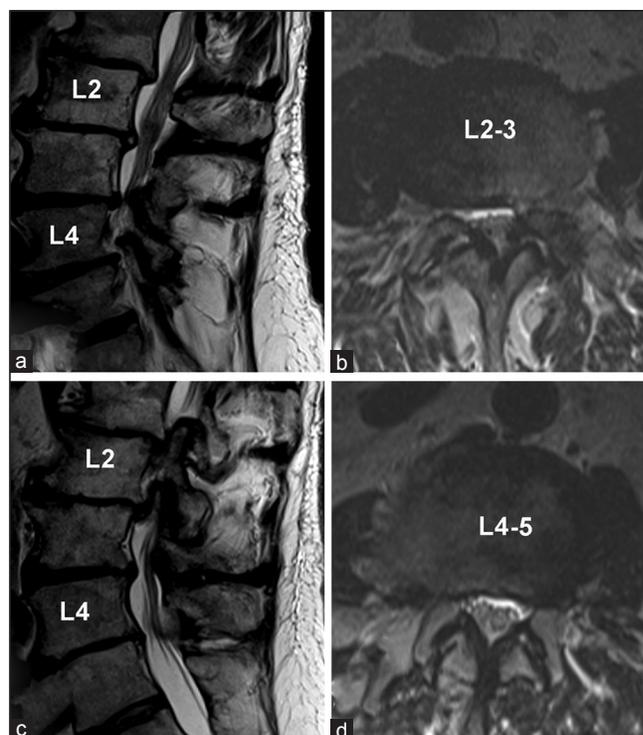
### Lumbar MRI and subsequent thoracic MRI showing synovial cyst

The clinical picture was that of an upper motor neuron disorder. The thoracic MRI with and without gadolinium contrast demonstrated severe spinal canal stenosis/foraminal stenosis due to a synovial cyst at the T11-12 level with adjacent focal hyperintense T2/STIR signal representing cord demyelination/edema [Figure 2a and b]. The patient underwent a T11-12 thoracic laminectomy with medial facetectomies bilaterally for resection of a synovial cyst. Within 1 month of surgery, the patient's symptoms had improved.

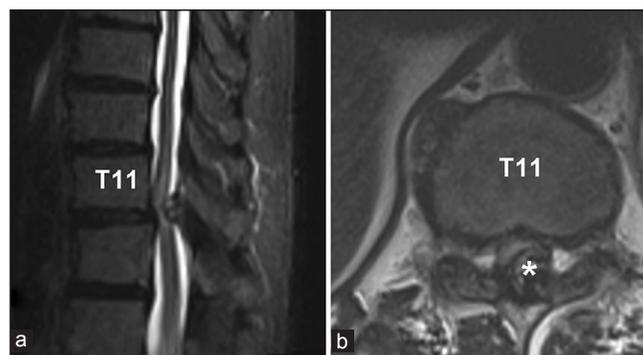
### DISCUSSION

Although thoracic myelopathy may be misdiagnosed/confused with lumbar stenosis/myeloradiculopathy, only the former can result in hyperreflexia/spasticity.<sup>[2,5]</sup> Hilton *et al.*, in their study of 43 patients with degenerative cervical myelopathy who underwent a total of 1123 cervical MRI scans, showed significant differences between clinicians' interpretations of thoracic versus lumbar findings.<sup>[3]</sup>

Here, the patient had both thoracic and lumbar stenosis, but the thoracic pathology was missed. A more complete preoperative neurological examination, more likely than not, would have revealed bilateral patellar and Achilles hyperreflexia plus bilateral Babinski signs and would thus have triggered obtaining preoperative cervical and



**Figure 1:** (a and c) Lateral and (b and d) anteroposterior views of lumbar magnetic resonance imaging with and without gadolinium contrast indicating the presence of moderate spinal and foraminal stenosis at L2-3 and L4-5. There is mild scoliosis indicating apparent severe central spinal stenosis that is not confirmed at adjacent scan slices.



**Figure 2:** (a) Lateral and (b) axial thoracic magnetic resonance imaging scan with and without gadolinium contrast at T11-12 indicating the presence of a large left posterior synovial cyst (asterisk) causing severe spinal cord compression. There is underlying edema (myelomalacia) at T11-12.

thoracic MRI scans. In this case, the patient's myelopathic symptoms persisted following the L3-5 laminectomy and only partially resolved once the patient underwent the T11-12 thoracic laminectomy with medial facetectomies bilaterally for decompression of the stenosis/excision of the synovial cyst.

## CONCLUSION

Spinal surgeons should have a high index of suspicion for coexisting thoracic or cervical disease when the neurological examination shows myelopathy superimposed on lumbar myeloradiculopathy.

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## Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form, the patient has given his consent for his images and other clinical information to be reported in the journal. The patient understands that his name and initials will not be published and due efforts will be made to conceal his identity, but anonymity cannot be guaranteed.

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## Conflicts of interest

There are no conflicts of interest.

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