47-year-old female presents with lower back pain and right lower extremity weakness

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Patient Presentation

• 47y/o Female with no significant past medical history
• Presents with lower back pain with right lower extremity weakness
• Vital:
  • BP 134/82, HR 70, RR 17, Temp 37.1, pulse Ox 98%
• Physical:
  • Right lower extremity pain, numbness and weakness on plantarflexion and dorsiflexion
What Imaging Should We Order?
Select the applicable ACR Appropriateness Criteria

**Variant 2:** Chronic or progressive myelopathy. Initial imaging.

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<thead>
<tr>
<th>Procedure</th>
<th>Appropriateness Category</th>
<th>Relative Radiation Level</th>
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<tbody>
<tr>
<td>MRI spine area of interest without and with IV contrast</td>
<td>Usually Appropriate</td>
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<td>MRI spine area of interest without IV contrast</td>
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<td>CT myelography spine area of interest</td>
<td>May Be Appropriate</td>
<td>Varies</td>
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<td>CT spine area of interest with IV contrast</td>
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<td>Arteriography spine area of interest</td>
<td>Usually Not Appropriate</td>
<td>Varies</td>
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<td>Radiography spine area of interest</td>
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This imaging modality was ordered
Findings (Unlabeled)
Findings (labeled)

Anterior intradural extramedullary mass at T12-L1 spinal level demonstrates homogenous hypointense T1 signal relative to the adjacent vertebral body.

Posterior intradural extramedullary mass at L1-L2 spinal level demonstrates homogenous hypointense T1 signal relative to the adjacent vertebral body.

Anterior intradural extramedullary mass at T12-L1 spinal level demonstrates avid contrast enhancement.

Posterior intradural extramedullary mass at L1-L2 spinal level demonstrates no significant contrast enhancement.
Findings: (Unlabeled)
Findings: (labeled)

Anterior intradural extramedullary mass at T12-L1 spinal level demonstrates heterogenous T2 signal which is centrally hyperintense and peripherally hypointense.

Avidly enhancing intradural extramedullary mass occupying majority of the spinal canal at the T12-L1 spinal level.

Posterior intradural extramedullary mass at L1-L2 spinal level demonstrates homogenous intermediate T2 signal.

T2 weighted T1 contrast axial MRI
Findings: (Unlabeled)
Findings: (labeled)

Postop exam demonstrates a tiny focus of contrast enhancement along the anterior spinal canal at the superior aspect of L1 compatible with residual tumor.

Postop exam demonstrates a tiny focus of contrast enhancement along the anterolateral spinal canal compatible with residual tumor with significantly decreased mass effect.

Mild edema along the surgical tract.
Pertinent Labs

- CBC: WNL except WBC (3.1)

- Immunohistochemistry:
  - GFAP + (suggests Myxopapillary Ependymoma)
  - S100 & Sox10 + (suggests Schwannoma)
Final Dx:

T12-L1 Spindle Cell Schwannoma
L1-L2 Grade 2 Myxopapillary Ependymoma
Case Discussion (1-3 slides)

• Management:
  • T12-L2 laminectomy and resection of intradural extramedullary tumors was performed
  • Frozen section consistent with Schwannoma and myxopapillary ependymoma
  • Patient was placed on tapering steroid postop
  • Physical therapy was initiated postop
Case Discussion (1-3 slides)

• **Schwannoma:**
  - Benign well encapsulated, slow growing nerve sheath tumors composed of Schwann cells from the neural crest
  - Can present as Antoni A (hypercellular variant) or Antoni B, a hypocellular myxomatous variant that can mimic myxopapillary ependymoma

• **Myxopapillary ependymoma:**
  - Rare subtype of spinal cord ependymoma with predilection for lumbosacrum
  - An intradural, extramedullary benign and slow growing grade 2 neoplasm
  - Believed to originate at conus medullaris or filum terminale
  - Presents with nonspecific back pain, motor, sensory, urinary and gait problem
Case Discussion (1-3 slides)

• Differential diagnoses:
  • Spinal Paraganglioma – neuroendocrine tumor found around conus medularis
  • Meningioma- intradural extramedullary tumor originating from the meninges

• Imaging:
  • Best modality for myxopapillary ependymoma and schwannoma is MRI (T1 hypo/isointense, T2 hyperintense)

• Treatment:
  • Surgical excision is the treatment of choice for Myxopapillary ependymoma
  • Treatment of Schwannoma also involves surgical resection or radiotherapy
References:


