Scholars Journal of Medical Case Reports
Abbreviated Key Title: Sch J Med Case Rep
ISSN 2347-9507 (Print) | ISSN 2347-6559 (Online)
Journal homepage: https://saspublishers.com

OPEN ACCESS

Radiology

Extensive Cystic Degeneration in A Giant Dorsal Schwannoma: MRI Findings

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DOI: https://doi.org/10.36347/sjmcr.2026.v14i05.079 | **Received:** 02.03.2026 | **Accepted:** 26.04.2026 | **Published:** 23.05.2026

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Abstract | **Case Report**

Spinal schwannomas are benign nerve sheath tumors commonly arising from dorsal sensory roots and representing approximately 25–30% of intradural extramedullary spinal tumors [1]. Giant schwannomas with extensive cystic degeneration are uncommon and may mimic other cystic spinal lesions. We report a case of a giant dorsal schwannoma demonstrating marked cystic transformation on MRI. Imaging showed a well-defined intradural extramedullary lesion extending over multiple vertebral levels with heterogeneous signal intensity and large intralesional cystic components. Recognition of these imaging features is essential for accurate diagnosis and surgical planning [2].

Keywords: Spinal schwannoma, Intradural extramedullary tumor, Giant schwannoma, Cystic degeneration, MRI, Dumbbell tumor.

INTRODUCTION

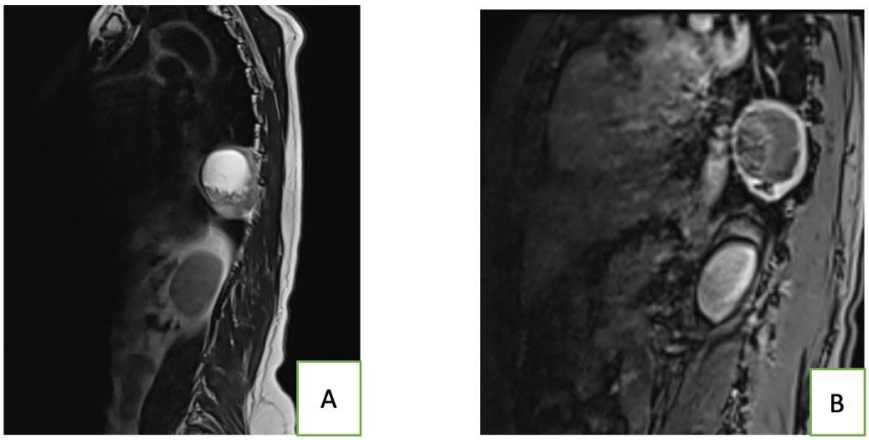
Schwannomas are slow-growing benign tumors originating from Schwann cells of peripheral nerve sheaths and most frequently involve dorsal sensory roots within the spinal canal [3]. Giant spinal schwannomas represent an uncommon variant characterized by extension across multiple vertebral segments or through neural foramina [4]. MRI remains the imaging modality of choice for lesion characterization and evaluation of neural compression and internal tumor architecture [5].

CASE PRESENTATION

A 43-year-old woman presented with progressive dorsal spinal pain associated with left-sided thoracic radicular pain without reported sensory deficit or sphincter disturbance. Given the persistence and progression of symptoms, spinal MRI was performed.

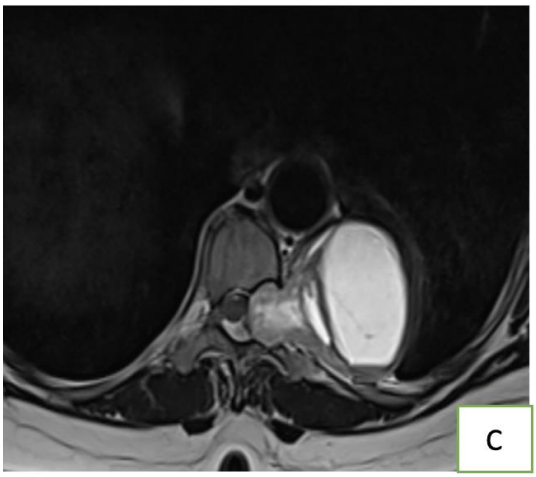
MRI examination including sagittal T1-, T2-, and STIR-weighted sequences, axial T2-weighted images at the dorsolumbar level, coronal T2-weighted sequences, and post-contrast T1-weighted fat-suppressed sequences demonstrated a large intradural extramedullary lesion centered on the left D10–D11 neural foramen with a characteristic dumbbell configuration. The lesion measured approximately 56 × 51 × 45 mm. It appeared hypointense on T1-weighted images and hyperintense on T2- and STIR-weighted sequences with heterogeneous enhancement after gadolinium administration and intralesional cystic components.

The lesion produced significant widening of the left neural foramen and scalloping of the D10 vertebral body and posterior arch, reflecting a slow-growing expansile process. It caused marked compression of the dural sac and spinal cord with associated enlargement of the cord at the same level, without imaging signs of intramedullary invasion.



Sagittal T2-weighted MRI [A] and FAT SAT with injection [B] of the thoracic spine demonstrates a large well-defined intradural extramedullary lesion centered at the D10–D11 level, extending through the left neural foramen with a dumbbell configuration.
The lesion shows marked hyperintense signal with internal cystic components, exerting significant mass effect on the spinal cord with associated cord displacement.

These imaging findings were highly suggestive of a giant dorsal nerve root schwannoma with extensive cystic degeneration.



C: Axial T2-weighted MRI at the D10–D11 level shows a left foraminal and intracanalar mass with high signal intensity and cystic appearance, enlarging the neural foramen and producing compression of the dural sac and spinal cord.
Associated foraminal widening and lateral extension support a nerve root origin, characteristic of schwannoma.

Discussion

Spinal schwannomas typically present as well-defined intradural extramedullary masses arising from dorsal sensory roots and may produce progressive neurological symptoms due to spinal cord compression [1]. Giant schwannomas are rare and are usually defined by extension across more than two vertebral levels or by extraspinal extension through neural foramina [4]. MRI plays a central role in diagnosis by demonstrating lesion margins, neural origin, and internal structure [5]. Long-standing schwannomas frequently develop degenerative changes such as cyst formation, hemorrhage, and hyalinization, explaining heterogeneous signal intensity and enhancement patterns [7]. Recognition of extensive cystic degeneration is important because these lesions may mimic arachnoid cysts, cystic meningiomas, or other intradural cystic tumors. Identification of nerve root origin remains the key imaging feature supporting the diagnosis and guiding surgical management [2].

Conclusion

Giant dorsal schwannomas with extensive cystic degeneration represent an uncommon imaging presentation. MRI allows accurate characterization of lesion extent, neural origin, and internal composition, facilitating diagnosis and surgical planning.

References

1. Koeller KK, Rosenblum RS, Morrison AL. Neoplasms of the spinal cord and filum terminale: radiologic-pathologic correlation. *Radiographics.* 2000 ;20[6] :1721–1749.

2. Conti P, Pansini G, Mouchaty H, Capuano C, Conti R. Spinal neurinomas: retrospective analysis and long-term outcome of 179 cases. *Acta Neurochir.* 2004 ;146 :195–204.
3. Louis DN, Perry A, Reifenberger G, *et al.,* The 2016 WHO classification of tumors of the central nervous system. *Acta Neuropathol.* 2016 ;131 :803–820.
4. Sridhar K, Ramamurthi R, Vasudevan MC, Ramamurthi B. Giant invasive spinal schwannomas. *J Neurosurg.* 2001 ;94[2 Suppl] :210–215.
5. Thawait SK, Chaudhry V, Thawait GK, *et al.,* High-resolution MR neurography of spinal nerve roots. *Radiographics.* 2012 ;32 :1047–1063.
6. Jinnai T, Koyama T. Clinical characteristics of spinal nerve sheath tumors. *Neurosurgery.* 2005 ;56 :510–515.
7. Ryu KS, Lee KY, Kim IS, *et al.,* Radiologic features of spinal schwannomas. *J Korean Neurosurg Soc.* 2008 ;44 :32–37.