



## A RARE CASE OF THORACIC INTRADURAL EXTRAMEDULLARY CYSTIC SCHWANNOMA IN AN ELDERLY FEMALE

### Radio-Diagnosis

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### ABSTRACT

Schwannomas are benign encapsulated predominantly solid tumors of Schwann cell origin. Cystic spinal schwannomas are extremely rare tumors that manifest in a wide spectrum of conditions in comparison to the commonly seen intradural extramedullary solid spinal schwannomas. This report describes a case of thoracic spinal intradural extramedullary cystic schwannoma in a 75 years female who presented with paraparesis. MRI of dorso-lumbo-sacral spine revealed an intradural extramedullary lesion at D4-D5 level which followed the CSF signal on T1 and T2 weighted images with rim of peripheral enhancement, enhancement of the septa on post contrast study with no diffusion restriction suggestive of intradural extramedullary cystic schwannoma. This case highlights the importance of considering spinal cystic schwannomas in the evaluation of paraparesis and the pivotal role of MRI in this context

### KEYWORDS

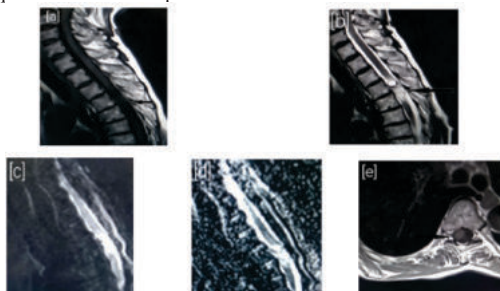
thoracic intradural extramedullary cystic schwannoma, paraparesis, role of MRI

### INTRODUCTION

Spinal schwannomas arise from the dorsal sensory roots of the spinal nerves with a peak incidence in the fourth to sixth decades. [1] They are predominantly solid or solid lesions in general. [2] Schwannomas are known to display the classical signs of degeneration such as hemorrhage, fibrosis and calcifications with cystic changes being an unusual occurrence. Furthermore, they involve the lumbar region commonly and involve the thoracic region rarely. [2] The tumor grows and starts compressing the roots of the spinal cord which results in clinical symptoms. But they are slow growing in nature, as a result of which the symptoms often appear late with an evident delay in diagnosis. For early detection, characterization and planning a timely therapeutic intervention of such lesions, MRI is an excellent diagnostic modality.

### Case Report

A 75-year-old female presented with complaints of weakness of bilateral lower limbs and difficulty in walking. On neurological examination, she had a grade 4/5 motor response in both lower limbs, decreased sensation below the level of D4 dermatome with extensor plantar response bilaterally. Routine blood parameters were within normal limits. She was subjected to an MRI of the dorso-lumbo-sacral spine for evaluation of the cause, which showed an intradural extramedullary cystic space occupying lesion with internal septa within, at the level of D4-D5 vertebrae. The lesion was T1 hypointense and T2 hyperintense (Figure 1[a] and 1[b]) with rim of peripheral enhancement and enhancement of the septa on post contrast study (1[e]). No restricted diffusion was noted on DWI (Figure 1 [c] and 1 [d]). There was contralateral displacement of spinal cord with no evidence of altered cord signal intensity. The MRI findings pointed towards a diagnosis of intradural extramedullary cystic schwannoma. The patient was thereby recommended a laminectomy procedure and postprocedural follow up.



**Figure 1:** Intradural extramedullary cystic schwannoma showing T1 hypointensity [a], T2 hyperintensity [b], no diffusion restriction [b], [c] and post contrast enhancement[e]

### DISCUSSION

Spinal schwannomas arise from the dorsal sensory roots of the spinal nerves with a peak incidence in the fourth to sixth decades. [1] The most common location of occurrence is the lumbar spine. [2]

Spinal schwannomas are usually solid lesions. As a result, predominantly cystic schwannomas are challenging to diagnose with a broad variability in their presentation both symptomatically and radiologically.

On MRI, these tumors are hypointense on T1-weighted (T1W) images and show variable hyper-intensity on T2-weighted (T2W) images compared to the spinal cord. They may however show hyperintensity on T1W and slight hypointensity on T2W images depending on the presence of cellular tissue component. They show variable enhancement patterns ranging from homogenous to heterogenous to thin rim-like. [6] The thin rim like peripheral enhancement is however a diagnostic clue in majority of cases. Schwannomas consist of spindle-shaped cells with pale eosinophilic cytoplasm. The cells are of two types – Antoni A type which show a compact arrangement with 'palisading pattern' and Antoni B type which show a loose arrangement because of myxoid cytoplasmic component. [4] The Antoni B portion undergoes ischemic necrosis which is responsible for the cystic changes in schwannomas. [6]

The differential diagnosis of thoracic intradural extramedullary cystic lesions include cystic meningiomas (dural tail sign), neurenteric cysts (CNS and other vertebral anomalies), hydatid cysts, and arachnoid cysts (enhancement only if ruptured or infected).

### CONCLUSION:

Cystic schwannomas follow an indolent course and the primary challenging aspect of this tumor is the variability and paucity of symptoms. Symptoms may include local pain, radiculopathy, paraesthesia, motor weakness, and sphincter control disturbances. [5] Diagnosis is delayed until the tumor reaches a considerable size. Although histopathology is the gold standard, contrast enhanced MRI is an excellent modality for the diagnosis, characterization of such tumors and prompt initiation of treatment and management. Motor weakness is a less common symptom of such tumors and the consideration of spinal cystic schwannomas as a possibility in the evaluation of paraparesis is of considerable importance.

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