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Spinal Schwannoma

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A. CASE TITLE: SPINAL SCHWANNOMA

B. **CLINICAL HISTORY** – 70year old male patient came with the complaints of weakness in bilateral lower limbs since 2 months and acute retention of urine since 20days. Blood work-up was done and the parameters were within normal limits.

C.IMAGING DIAGNOSIS:

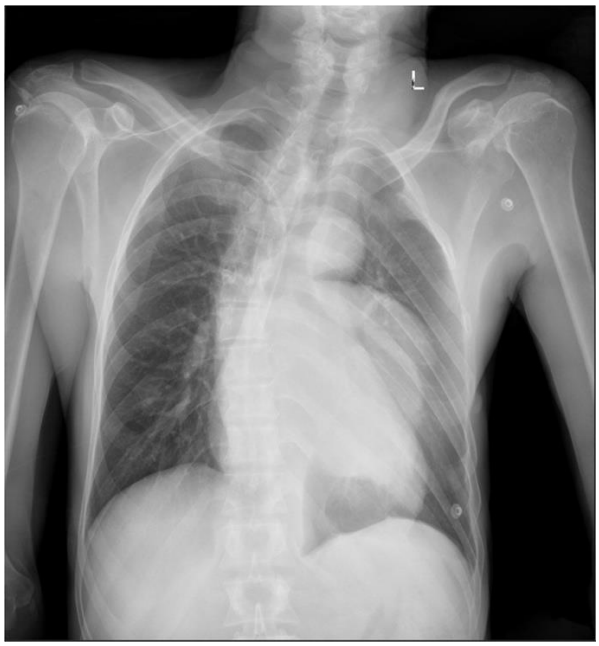
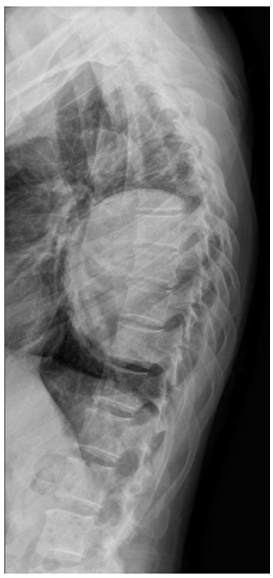


Figure 1

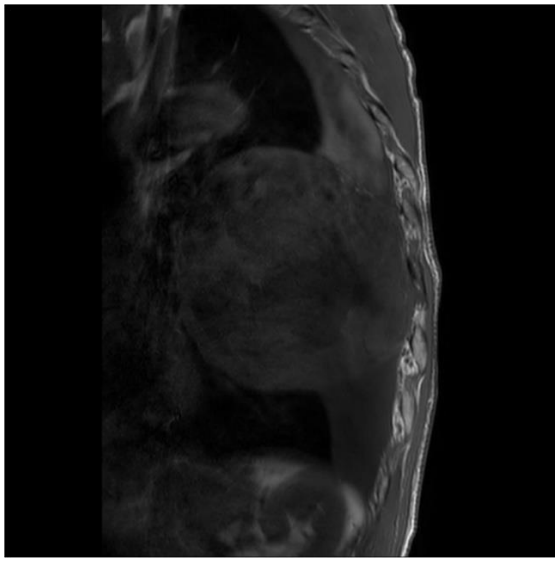
X-ray CHEST – Ill defined homgenous opacity projected over the left hila, mid zone without silhouetting the left cardiac border – Likely posterior medistinal mass.



Figures 2 : X-ray DORSOLUMBAR SPINE LATERAL

X-ray DORSO LUMBAR SPINE (LATERAL)- Ill defined homgenous opacity with smooth margins occupying the middle and posterior medastinum – Likely posterior medistinal mass.

Figures 3: MRI Thoracic-SPINE

a) **T1 sagittal** 

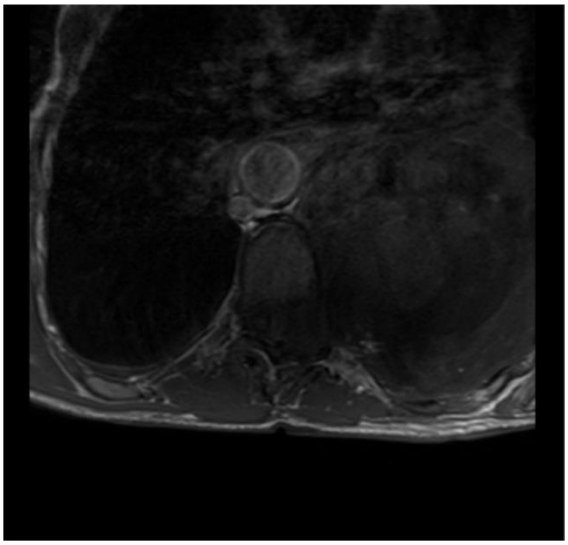
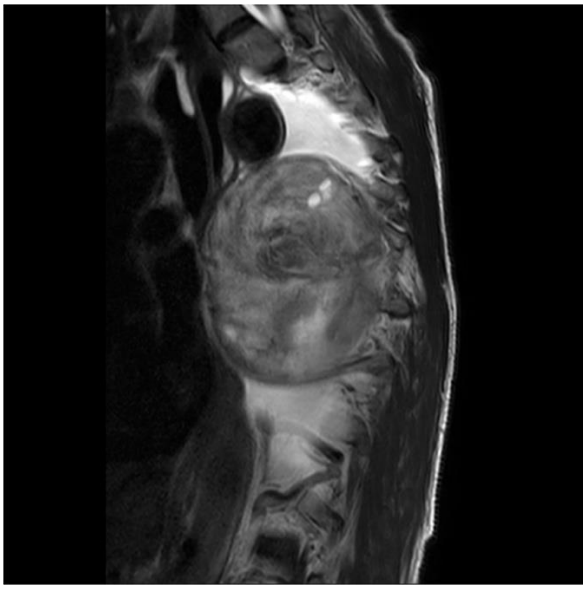
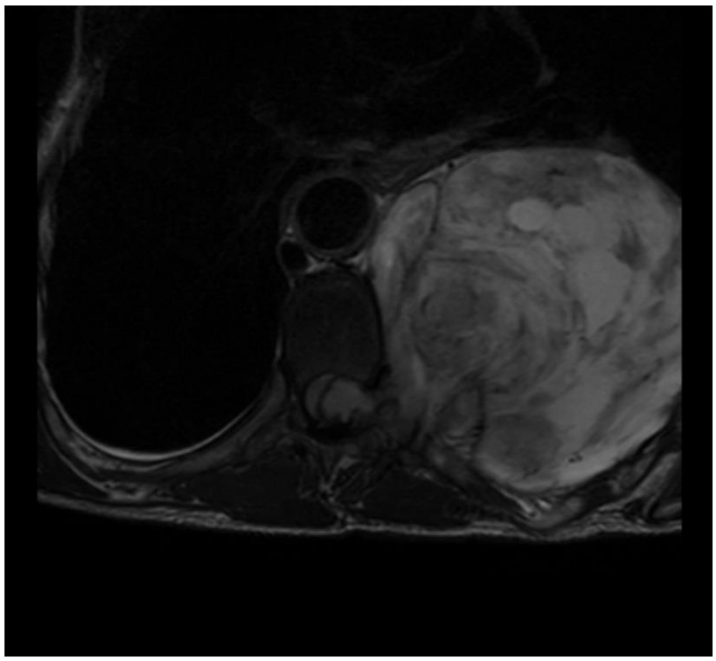
b) **T1 axial** 

Fig: 3 a,b: Large dumb-bell shaped intradural extra-medullary mass arising from the spinal canal at the level of D8 vertebral body casuing the widening of left neural foramina. The lesion has small intradural component with a large extra spinal component in the left paravertebral region occupying majority of the left hemi-thorax. The lesion appears iso-hypointense on T1WI **(Fig 3a,b)**



c) T2 sagittal



d) T2 axial

Fig 3c,d : Heterogenously hyperintense on T2WI.

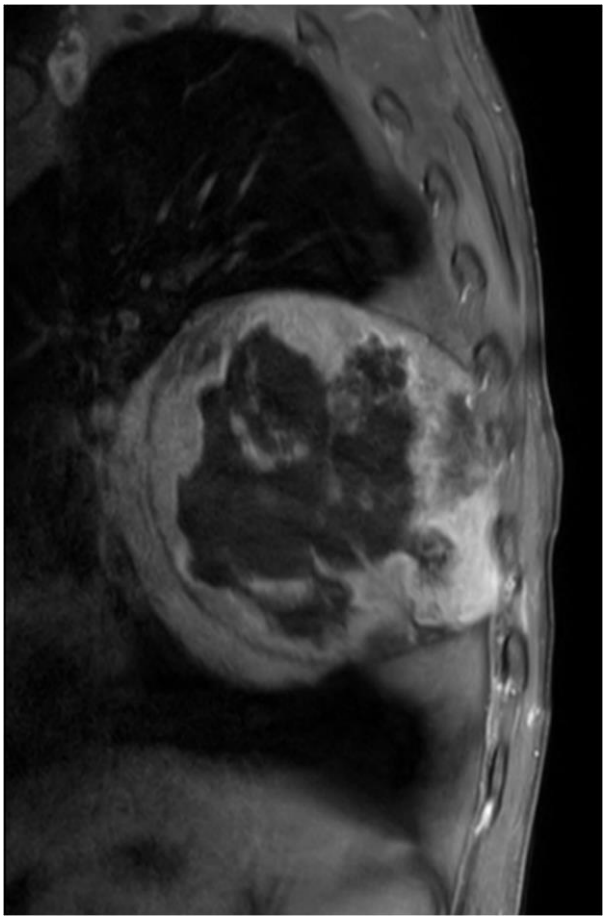


Figure 4 : MRI T1 post contrast sagittal.

Fig 4: On post contrast images, the lesion shows heterogenous enhancement with central enhancing areas -Likely necrosis

FINAL DIAGNOSIS : Large dumbell shaped intradural extra-medullary mass arising from the spinal canal at the level of D8 vertebral body – Likely nerve sheath tumour (Schwannoma).

Histopathological diagnosis: Schwannoma.

A. DISCUSSION

Spinal schwannoma are benign nerve sheath tumors within the spinal canal, typically arising from the spinal roots and it is the second most common nerve sheath tumor of spine.

Epidemiology

Annual incidence is 0.4 /100,000. Comprise about 40-45% of all spinal tumors. The mean age is 46 years with no sex predilection.

Etiopathogenesis: Schwannomas originate from Schwann cells, derived from precursor cells in the embryonic neural crest. Majority are solitary and sporadic. However, there is association with Neurofibromatosis type2 (NF2). Loss of NF2 protein Merlin results in defective tumorogenesis in multiple tissues. NF2 tumor suppression gene located on chromosome 22, has high mutation rate and represent almost half of cases of NF2 with new mutations.

General features:

Most patients present with radicular pain / paresthesia, but can present with myelopathy including progressive paraparesis, if they occur in cervical or thoracic region. Weakness can occur later in the course of disease.

B. IMAGING

Primary diagnostic modality for EISTs is magnetic resonance imaging -MRI. Diagnostics also include plain X-ray imaging in antero-posterior, lateral and dynamic (flexion, extension) projections. Furthermore, Computerized tomography (CT) scan, thin cuts with reconstructions (Bone window) are important to evaluate bony anatomy. In patients who could not undergo MRI scanning, CT myelography is an alternative.

CT findings:

1. Schwannomas are slightly hypodense relative to paraspinal musculature.
2. Giant schwannomas occurring within the lumbar spinal canal can cause marked bone remodeling of the spinal canal and neural foramina.
3. Intradural schwannoma at myelography have characteristic "*cap sign",* where contrast filled intrathecal CSF forms a meniscal cap above and/or below the intradural tumor.

MRI findings:

1. Modality of choice for diagnosing and assessing the extent of schwannomas.
2. Foraminal schwannomas often have a intradural component giving them a dumbbell shaped configuration.
3. These tumors are typically T1 hypointense or isointense relative to the spinal cord.
4. And are T2 hyperintense to relative to spinal cord
5. On contrast administration, solid portions usually enhance homogenously. Some enhance slightly more at the periphery. Cystic area commonly occurs within the an intradural schwannoma and does not enhance.

Treatment:

1. Conservative approach: Small intradural schwannomas found incidentally in the cauda equina are usually not treated until they become symptomatic.
2. Surgical excision: In cases with significant neurologic dysfunction / uncontrollable pain or in case of malignant degeneration.

REFERENCES –

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