

IndSPN Case of the Month

February 2023

Clinical Presentation

A nine-year-old girl born out of non-consanguineous marriage brought by parents with chief complaints of-

- Mild back pain with deformity for 8 months
- Pain over B/L soles aggravated upon walking for long distances for 8 months
- Tingling paraesthesia over S1 dermatome B/L for 8 months

Clinical Examination

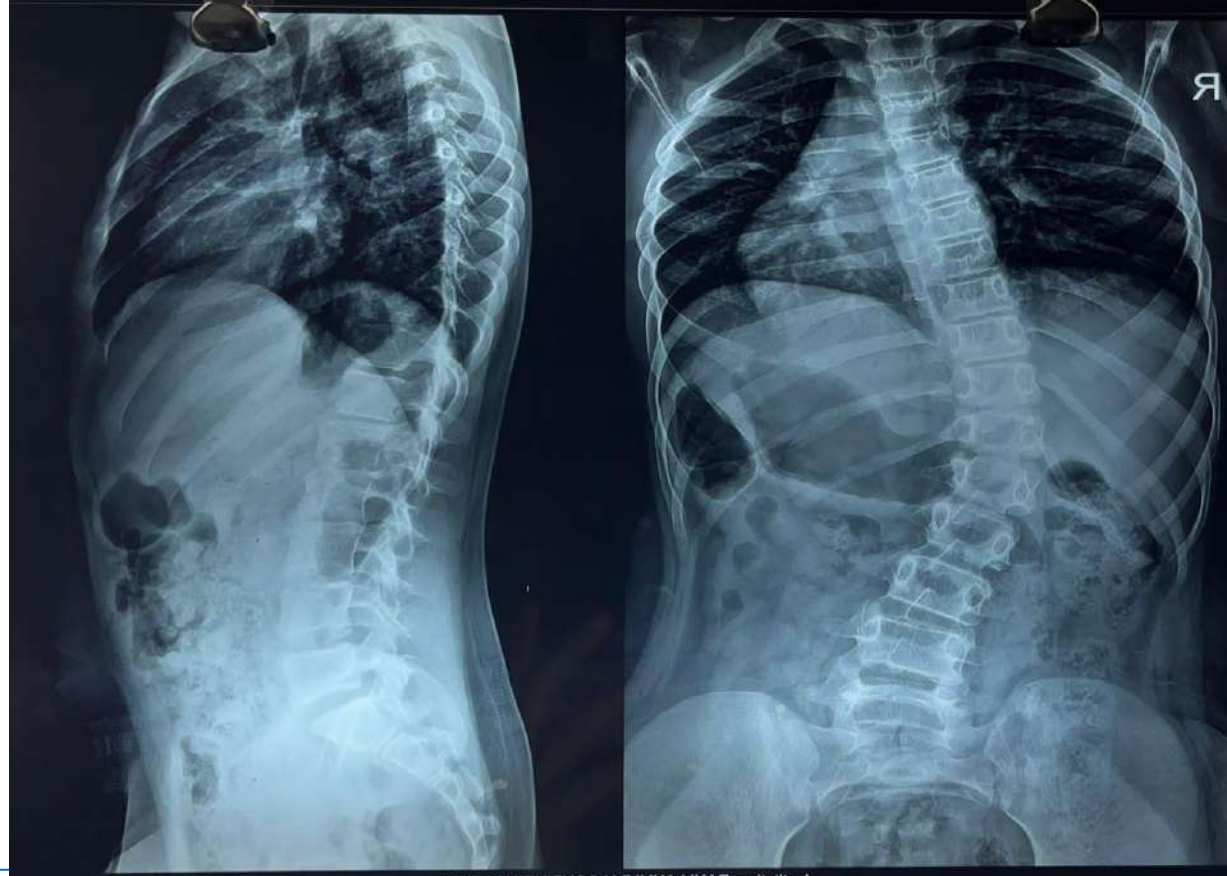
- Child was alert and playful
- Higher mental functions- Intact
- Nutrition- Adequate
- Tone- Normal in all four limbs
- Power- 5/5 in all four limbs
- Deep tendon reflexes- 2+ in both B/L UL and LL
- Plantar- B/L flexor
- Reduced sensations in B/L Soles in S1 dermatome by 20%.
- No neurocutaneous marker
- Spinal tenderness- Absent
- Spinal deformity- At mid-dorsal level with primary curvature towards right side

Provisional Diagnosis with Clinical Localization



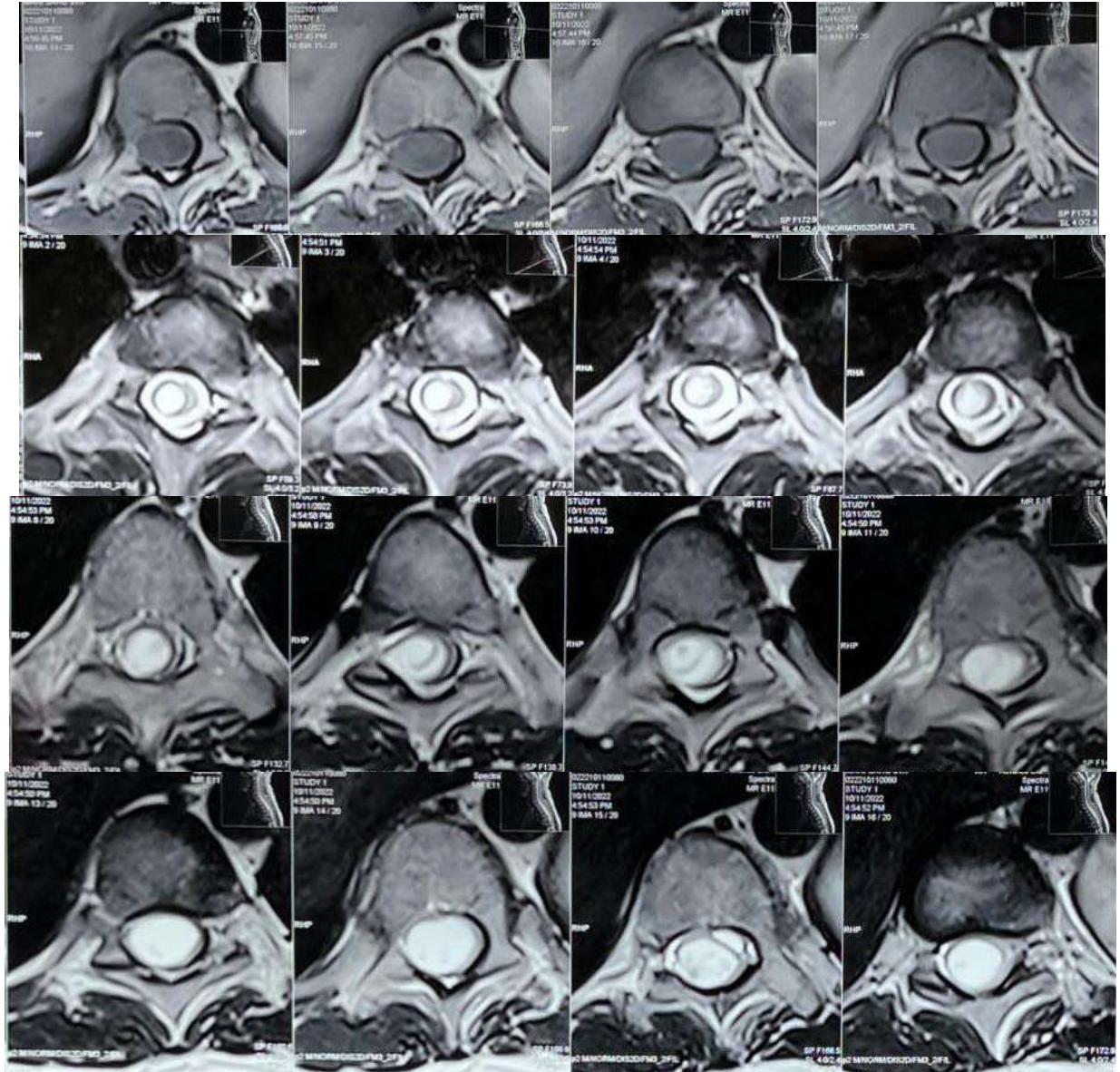
?

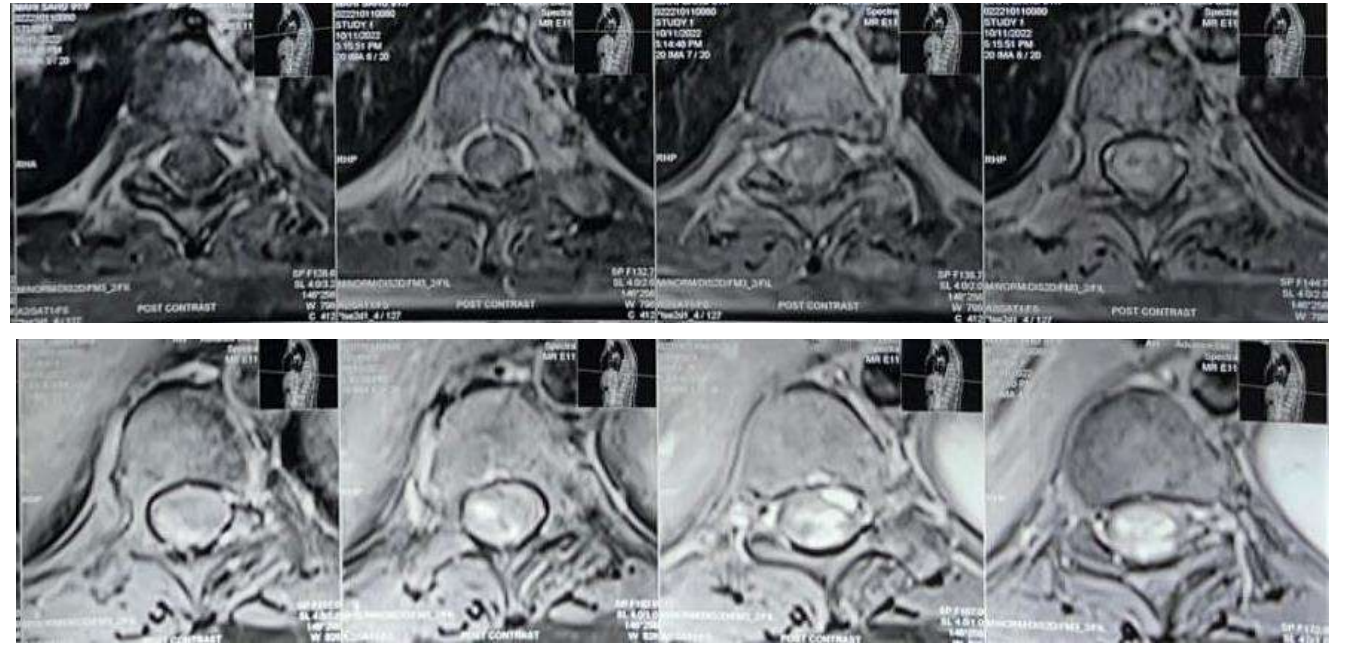
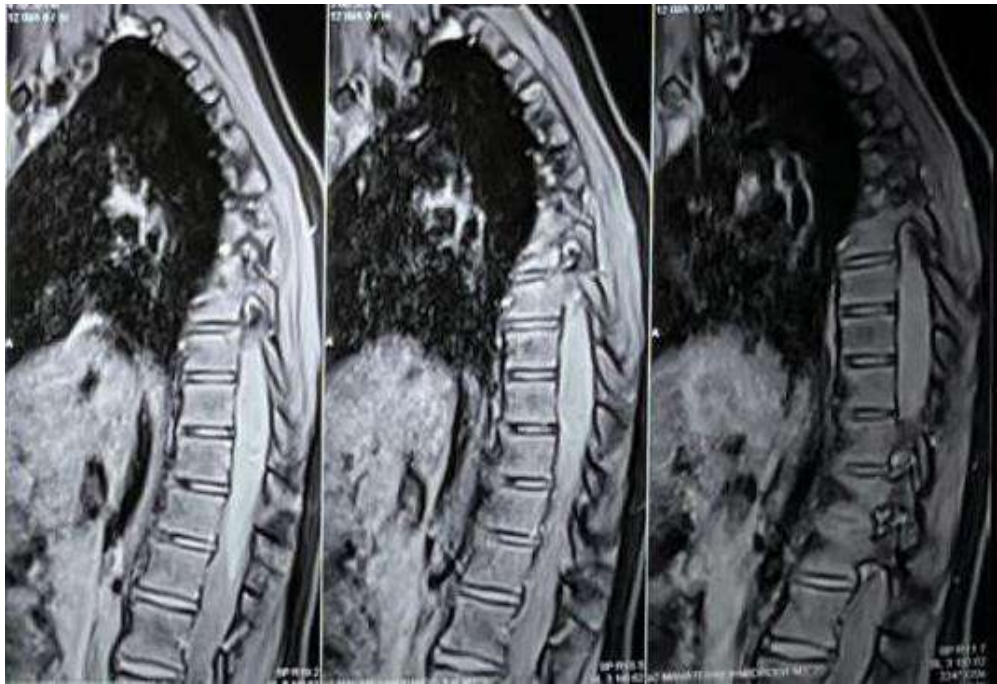
X-Ray Imaging



A mid-dorsal spinal deformity with primary curvature towards right side

Radiology



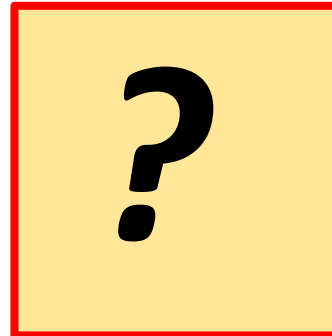


➤ *MRI Spine (Plain + Contrast)*

- Well defined heterogeneously enhancing intramedullary space occupying lesion in lower thoracic region
- Long segment syringomyelia extending from D1 to D7 likely with scoliosis of dorsal spine with convexity to right

Radiological Impression

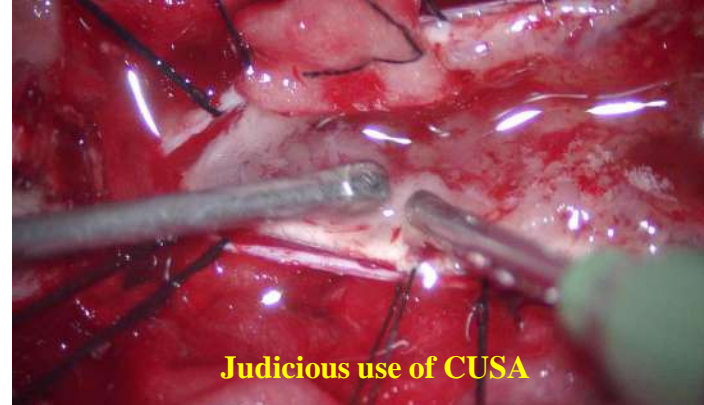
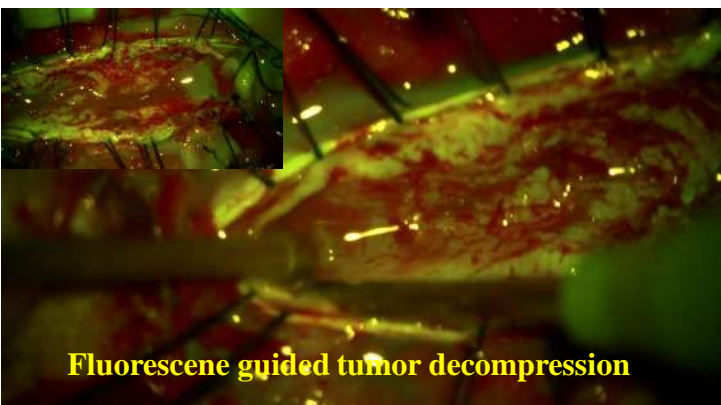
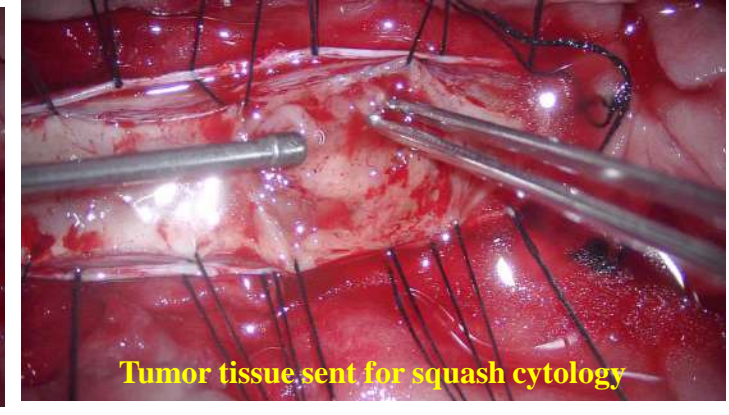
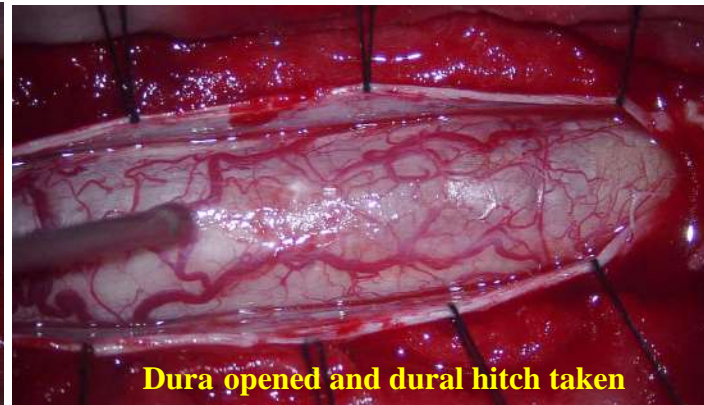
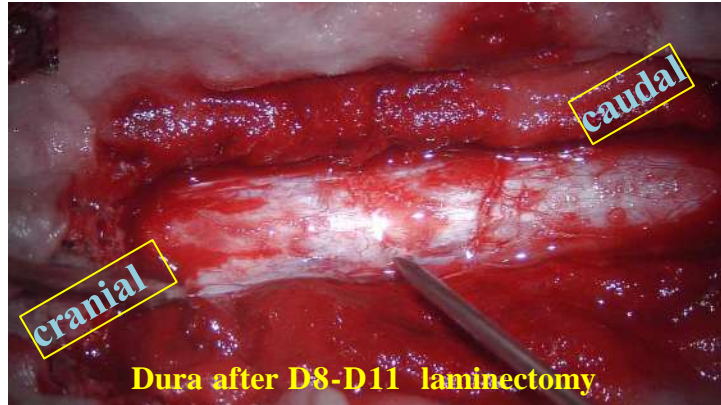
➤ Differential Diagnosis



Surgery

- **Position-** Prone position
- **Incision-** Midline skin incision extending from D7-D12
- **Procedure-** D8 to D11 laminectomy and maximal safe resection of tumor under intraoperative neuro monitoring

Intraoperative Images



Case Summary

- This 9-year-old girl was brought with chief complaints of mild back pain with scoliotic deformity and sensorineural deficit over S1 dermatome for eight months. Radiological evaluation was suggestive of well defined heterogeneously enhancing IMSOL in lower thoracic region with long segment syrinx with scoliotic deformity towards the right side
- D8 to D11 laminectomy and maximal safe resection of tumor under IONM with intra-op fall in MEP
- Post-operatively there was improvement in power. HPE report: ?
Astrocytoma

Relevant Literature

- Intramedullary spinal cord tumors refer to a subgroup of intradural spinal tumors that arise from cells within spinal cord, as opposed to adjacent structures such as the nerve roots or meninges
- The most common initial symptom is generalized back pain, which is difficult to distinguish clinically from back pain of musculoskeletal conditions
- Most intramedullary spinal cord tumors are considered to be glial in origin because they are histologically and immunohistochemically similar to differentiated non-neuronal cell types, such as ependymal cells and astrocytes, which occur in non pathological cord tissue

- Most commonly encountered IMSOLs are ependymomas, astrocytomas and hemangioblastomas
- Contrast enhanced MRI is the investigation of choice in these condition
- Surgical excision with intraoperative monitoring is the standard of care to be offered to the patient
- Selection of a posterior median sulcus, posterolateral sulcus or a direct transpial approach is determined on careful inspection of the spinal cord surface.
- Use of fluorescene guidance during surgery and use of CUSA helps in better and safer resection of tumors
- Transient drop in MEPs during surgery usually recovers over a period of days to week

Suggested Readings

- Sharma MC, Arora R, Deol PS, Mahapatra AK, Sinha AK, Sarkar C. Intramedullary tuberculoma of the spinal cord: a series of 10 cases. *Clinical neurology and neurosurgery*. 2002;104:279-84.
- Sonawane DV, Jagtap SA, Patil HG, Biraris SR, Chandanwale AS. Intramedullary tuberculoma of dorsal spinal cord: A case report with review of literature. *Journal of orthopaedic case reports*. 2015;5:44.
- Tolias CM, Giamouriadis A, Hogg FR, Ghimire P, Tolias CM, Giamouriadis A et al. Spinal Cord Intradural Intramedullary Tumour. *Neurosurgery: A Case-Based Approach*. 2019:155-7.