Images in Clinical Medicine

Enhancing Dorsal Spinal Cord Mass in a 50-Year-Old Lady

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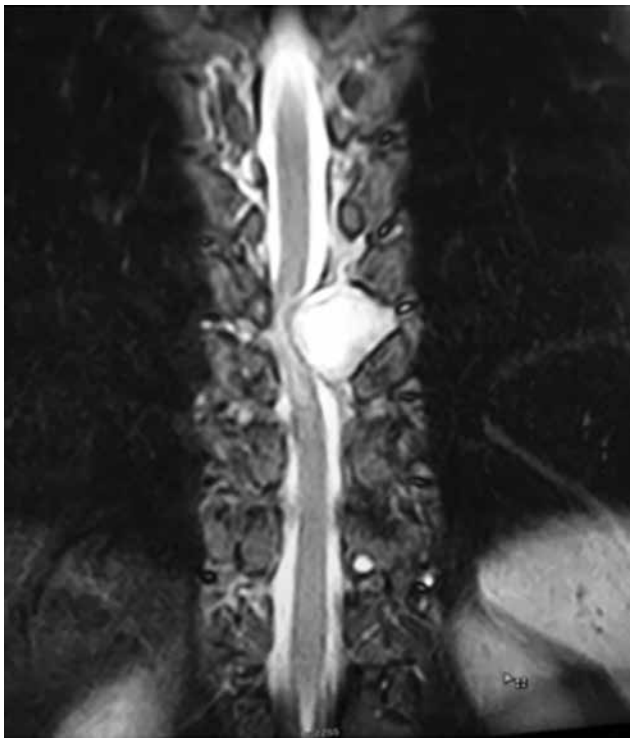

Fig 1. Coronal STIR image showing a well-defined dumbbell shaped intradural extramedullary tumor with marked spinal cord compression

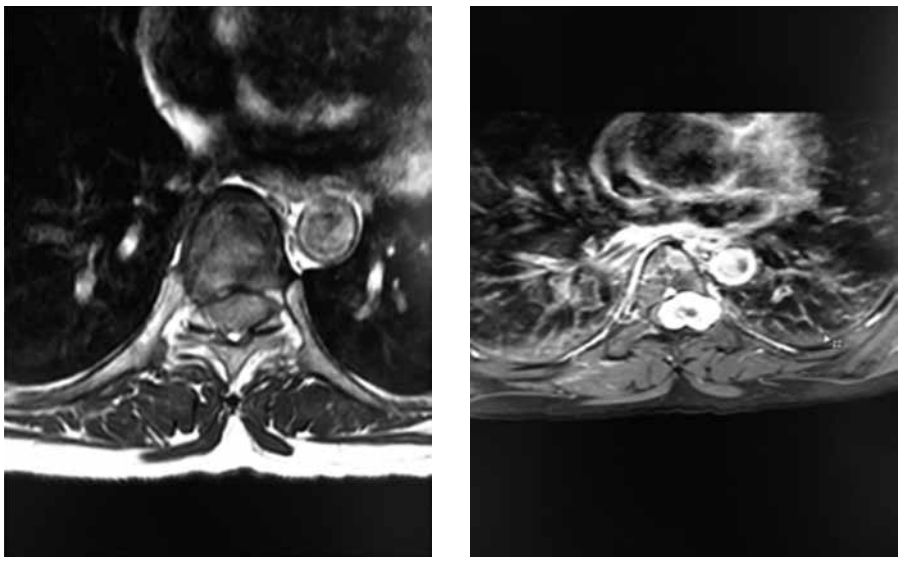

Fig 2. Pre- and post-contrast T1W axial images demonstrating peripheral strong contrast enhancement of the lesion that extends into left sided neural foramina at the level of D8/D9

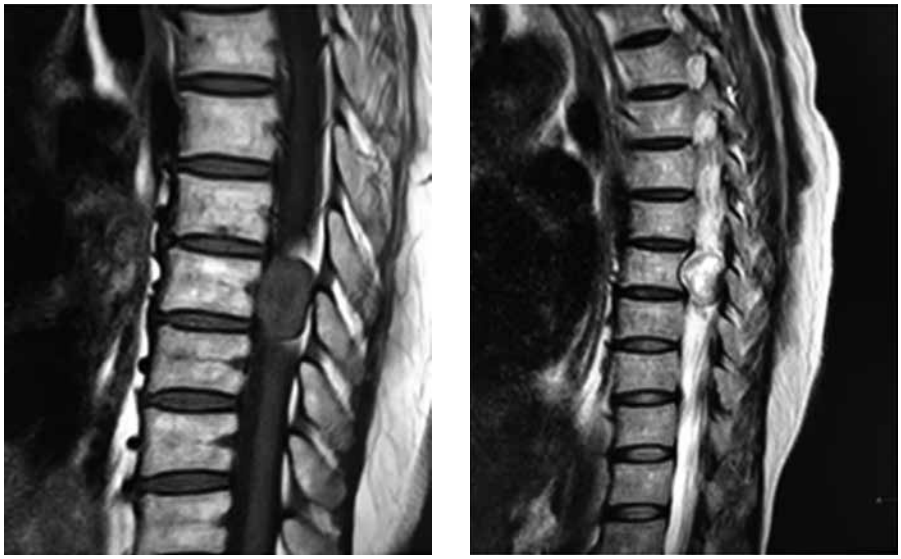

Fig 3. Sagittal T1W and T2W images showing an intradural well-circumscribed lesion at D8 level that is hypointense in T1W and hyperintense in T2W images

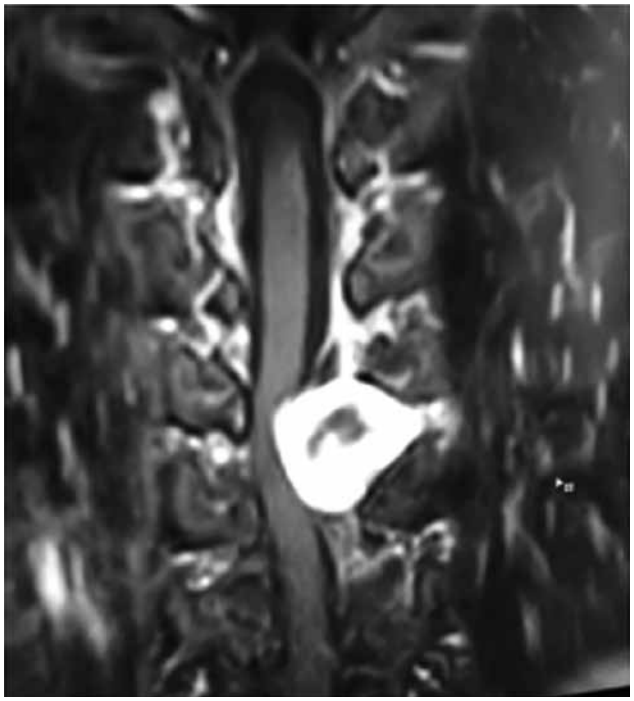

Fig 4. Post-contrast STIR coronal image showing an eccentric enhancing extramedullary tumor that pushes away the spinal cord to the right side

A 50-year-old woman attended the department of Radiology & Imaging in Enam Medical College & Hospital for MRI of dorsal spine with the history of inability to stand or walk since last two months and pain and weakness in both lower limbs for last three months.

MRI revealed a well-encapsulated T1W hypointense, T2W and STIR hyperintense extra-medullary intra-dural mass of about L=24 mm, T=24 mm and AP=16 mm involving left side of thecal sac at D7/D8 level. The mass causes effacement of subarachnoid space with displacing and compressing the spinal cord to

right laterally at D8 level. The lesion extends into neural foramina at the level of D8/D9. After I/V contrast, peripheral strong enhancement of the mass is noted. This mass was diagnosed as Schwannoma.

Schwannoma is the most common benign nerve sheath tumor within spinal canal typically arising from spinal nerve roots. They account for about 5−10% of all benign soft tissue tumors. Their biological behavior is characterized by slowly growing neoplasm arising from Schwann cells of dorsal sensory nerve roots displacing nerve fibers eccentrically.[1] They have a peak incidence in the fifth through seventh decades. About 95% of spinal schwannoma are solitary and sporadic. There is an association with neurofibromatosis type 2.

Spinal schwannomas are intradural extramedullary in location. Rarely intramedullary tumors are found. They are most frequently seen in cervical and lumbar regions.[2]

In general, schwannomas appear as solid, well-defined, rounded lesions, often with associated adjacent bony remodeling. When large, they may either align themselves with the long axis of the cord, forming sausage-shaped masses that can extend over several levels, or may protrude out of the neural foramen, forming a dumbbell-shaped mass.

Neurofibroma is the main differential diagnosis. Although neurofibromas and schwannomas can look identical, schwannomas are frequently associated with hemorrhage, cyst formation and fatty degeneration. These findings are rare in neurofibromas.[3]

MRI signal characteristics include

T1: 75% are isointense, 25% are hypointense

T2: more than 95% are hyperintense, often with mixed signal

T1 C+: virtually 100% enhance

Diagnosis is confirmed by MRI features and biopsy.[4] The main treatment for spinal schwannoma is excision where affected nerve is usually separated from the neoplasm after incision of epineurium. Gross total resection is usually curative for patients with sporadic tumors. For patients with NF2, there is a high incidence of new tumor formation.[5]

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