KREP

2025

KARNATAKA RADIOLOGY EDUCATION PROGRAM

CASE PRESENTATION

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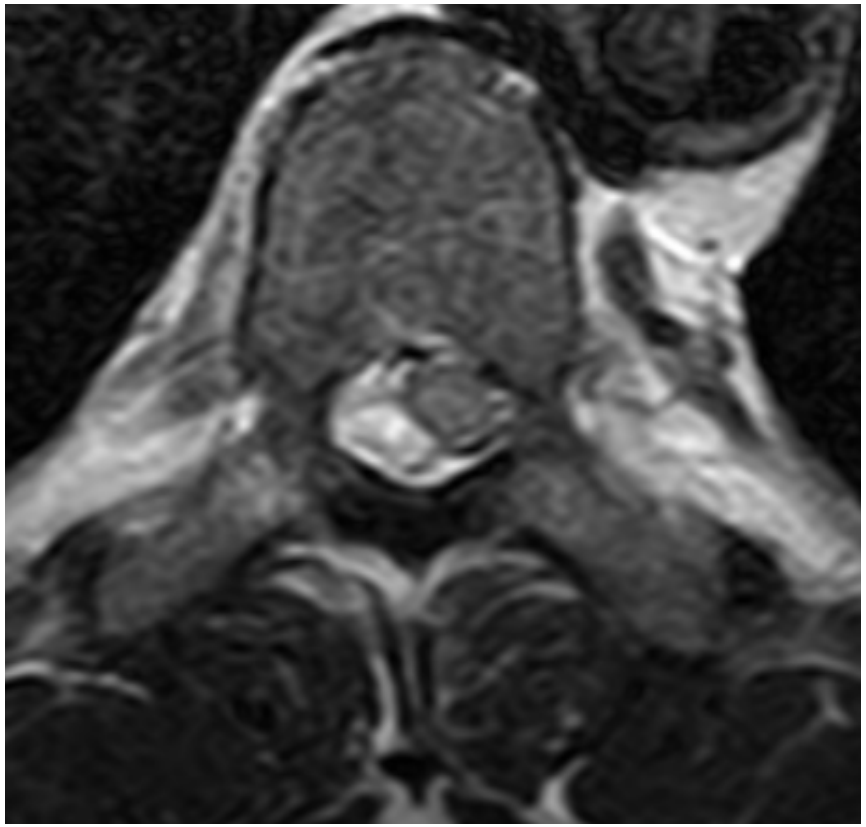
Case 1

- 35 year old, male
- c/o tingling sensation of B/L lower limbs – 2m
- c/o weakness of B/L lower limbs – 1m
- h/o multiple falls due to imbalance – 1m
- No h/o fever/trauma
- K/C/O T2 DM – 1m
- O/E – fine touch & perception – absent in B/L LL
  reduced knee reflex - RLL

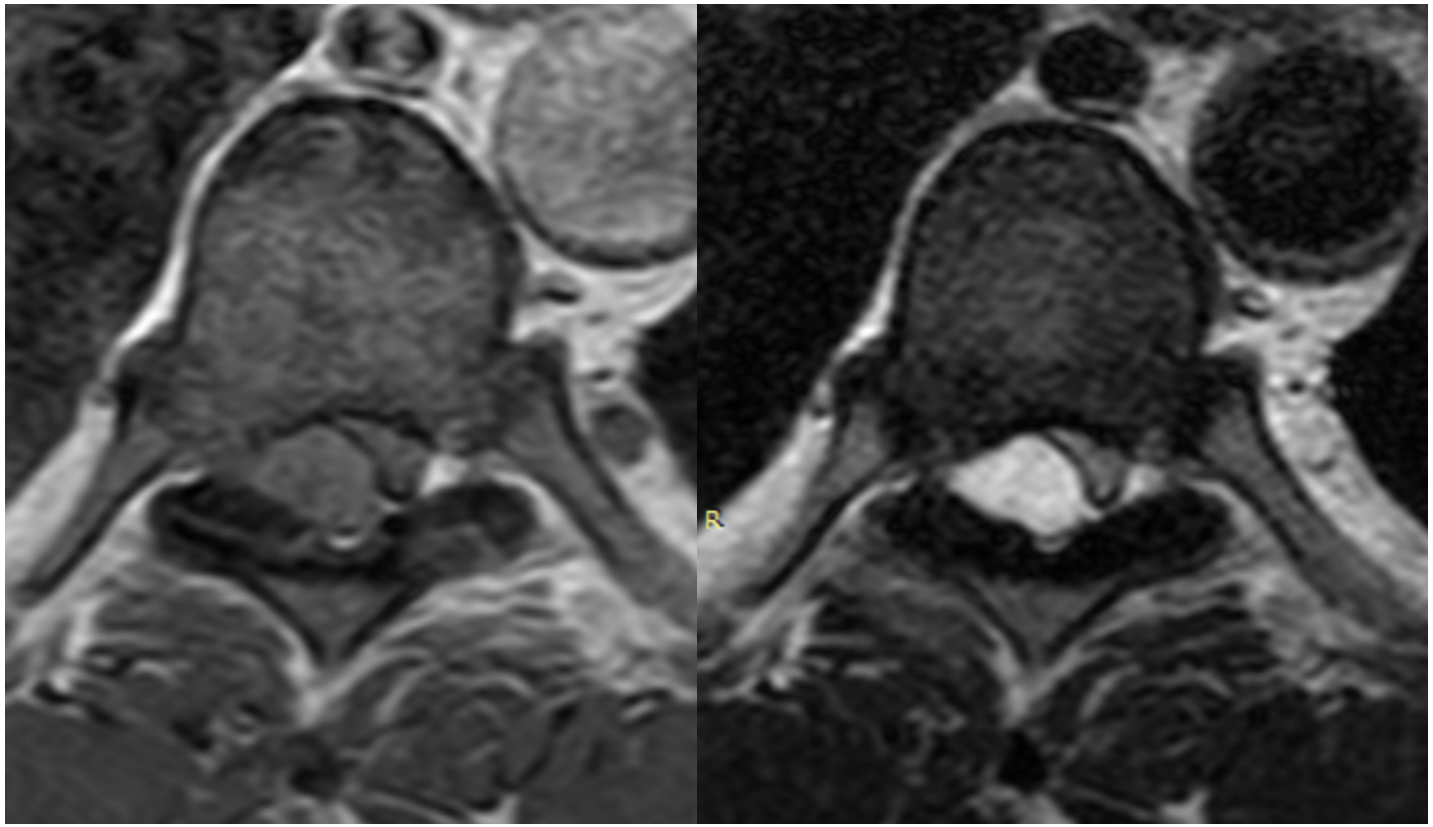
T1 T2 STIR

Solitary well defined extra-medullary extradural TI isointense and T2/ STIR hyperintense lesion measuring 0.6x0.9x1.4cm (CCXAPXTR) noted at D8-D9 intervertebral disc level. The lesion is forming acute angle with the dura with no spinal cord expansion – extradural lesion.



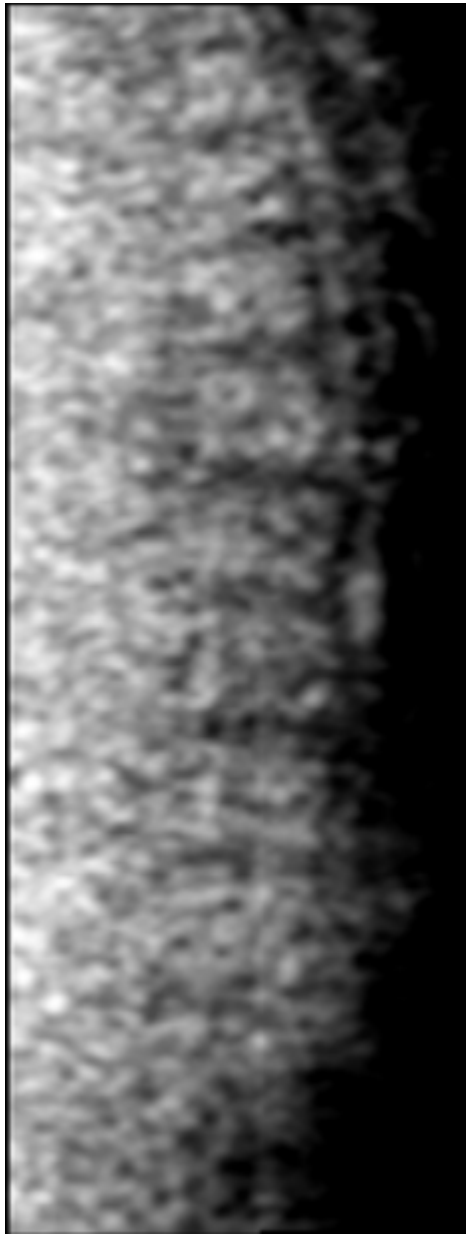
T2

Axial section at the level of pedicles, the lesion is extradural.

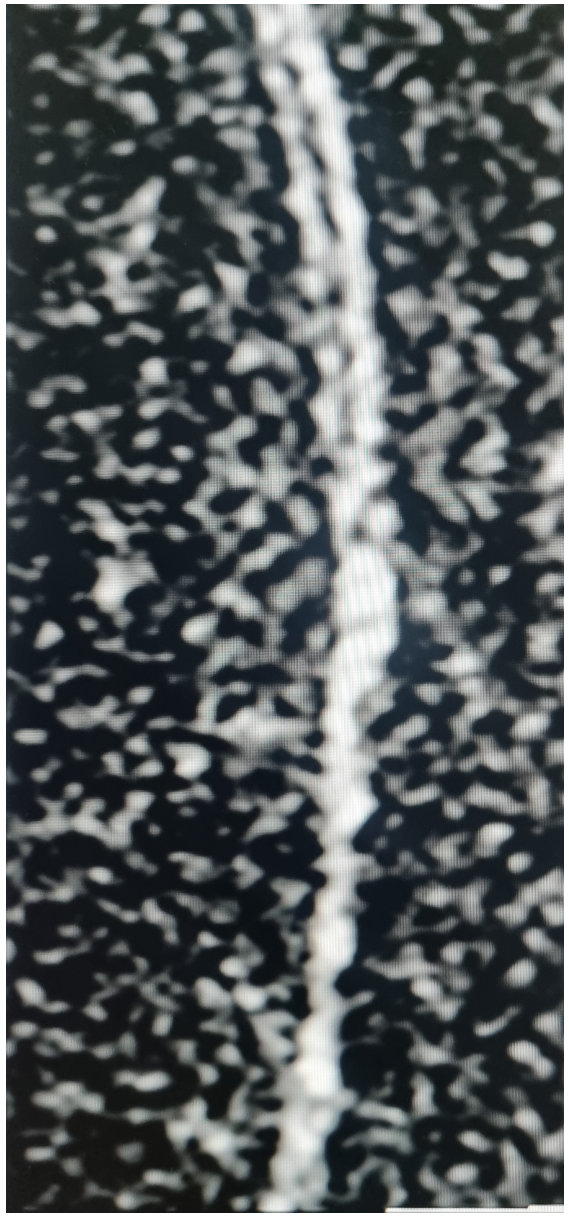


T1 T2

The lesion is compressing spinal cord medially and exiting nerve root laterally. The lesion is seen extending into right neural foramina – lesion is arising from spinal nerve sheath.



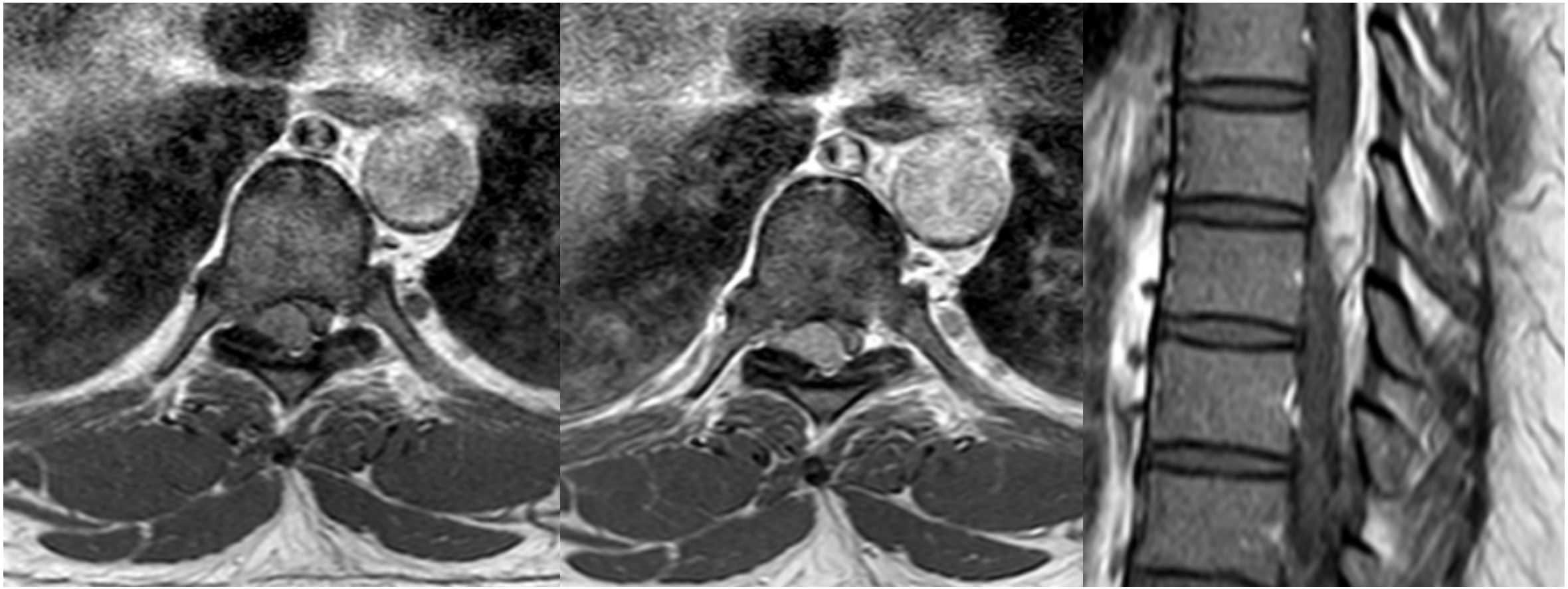
DWI



ADC

GRE

The lesion shows no diffusion restriction and blooming.



T1

T1 + C

On post contrast, lesion shows homogenous enhancement.

IMPRESSION

- Well defined solitary extramedullary extradural spinal canal lesion at D8 – D9 vertebral level which is displacing spinal cord and showing enhancement on post contrast – Spinal nerve sheath tumour

1. Schwannoma
2. Neurofibroma

Case 2

- 40 year, female
- c/o low back pain , radiating to bilateral lower limbs (R>L)since 1m
- c/o tingling sensation in bilateral lower limbs since 1m
- No h/o trauma/fever
- No known co- morbidities

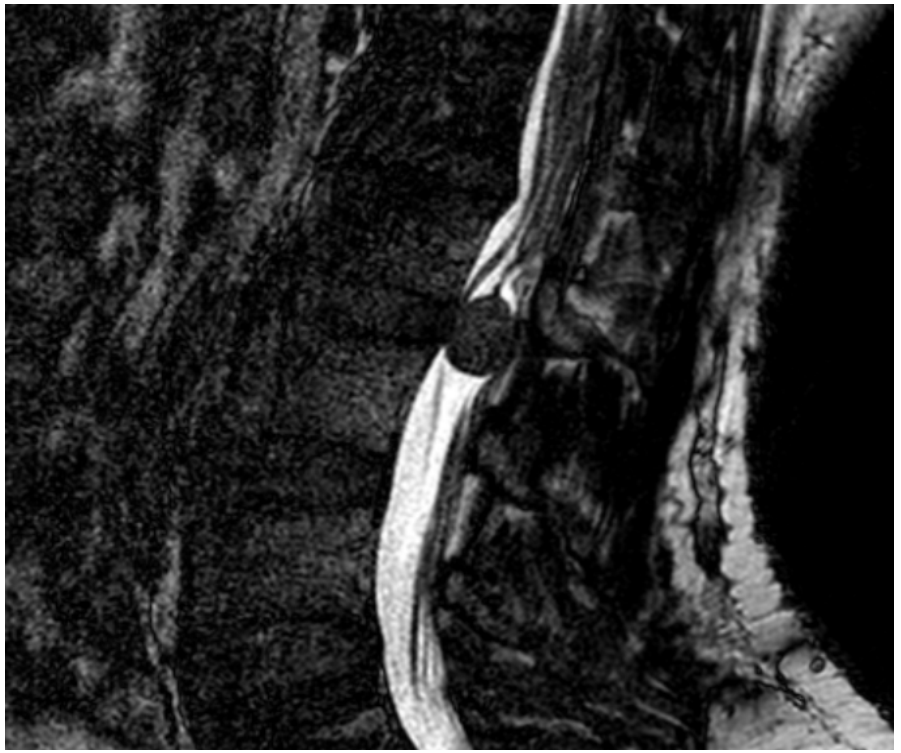
T1

T2

STIR

Well- defined intra dural extra- medullary mass lesion which is TI isointense, T2/STIR hyperintense at the L2-L3 intervertebral disc level, measures 8. 4x13.4x10.2mm(CCxAPxTR).

T2



CISS

The lesion is seen arising from one of the cauda equina nerve root. This lesion is causing displacement of rest of caudal equina nerve roots laterally. Filum terminale is noted separately and there was no extension into neural foramina.

DWI

ADC

The lesion shows true diffusion restriction.

GRE

No blooming.

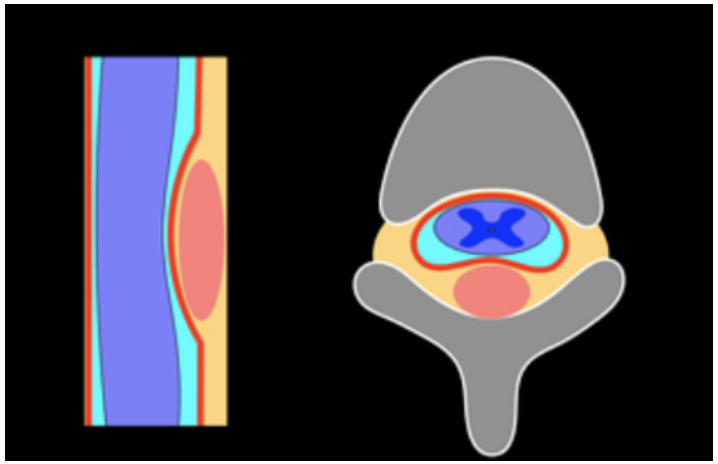
T1 + C

The lesion shows avid homogenous enhancement on post contrast study.

IMPRESSION

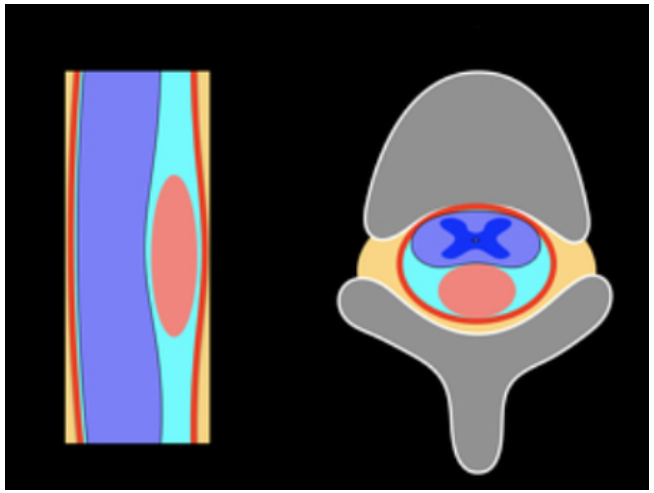
- Well defined solitary intradural spinal canal lesion at L2 – L3 vertebral level which is displacing cauda equina nerve roots and showing enhancement on post contrast – Spinal nerve sheath tumour *likely Schwannoma*

SPINAL CANAL TUMORS



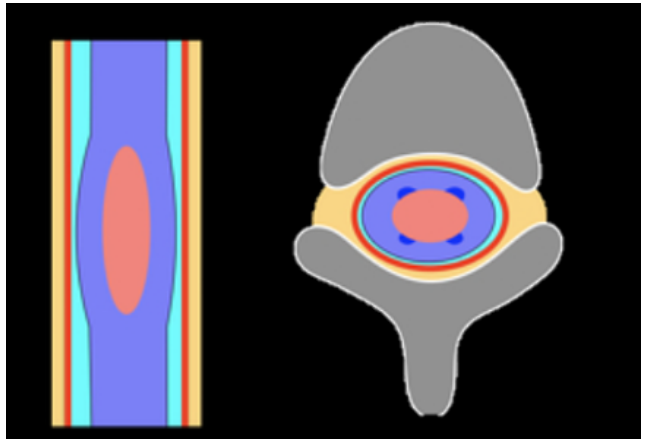
EXTRADURAL

- Schwannoma
- Neurofibroma
- Meningioma
- Epidural angiolipoma
- Epidural metastasis
- Primary bone/soft tissue tumour



INTRADURAL EXTRAMEDULLAY

- Meningioma
- Schwanoma
- Neurofibroma
- Leptomenigeal metastases



INTRAMEDULLARY

- Ependymoma
- Astrocytoma (diffuse/pilocytic)
- Hemangioblastoma
- Cord metastasis
- PNET
- Lymphoma

CAUDA EQUINA & FILUM TERMINALE

- Myxopapillary ependymoma
- Schwannoma
- Neurofibroma
- Paraganglioma
- Lymphoma
- Metastases

	Neurofibroma	Schwannoma	Meningioma	Myxopapillary ependymoma
Clinical features	Associated with NF -1 Noonan syndrome Asymptomatic > Pain	Associated with NF -2 Sensory symptoms (pain – more common)	Associated with NF -1 Ionizing radiation, Hormonal variation **Female predominance**	m/c primary neoplasm of conus medullaris/ cauda equina **Male predominance** Low back pain/Cauda equina syndrome
Pathology	**Schwan cells and fibroblasts** (Antoni A and Antoni B) **Tend to encase and infiltrate**	**Schwan cells** **Displace the nerve roots due to asymmetric growth**	**Meningothelial** > clear cell	**Ependymal glial cells** of filum terminale **CSF seeding is common,** aggressive in children
Location	Cervical	Cervical, Lumbar	Thoracic, usually located posterolaterally	Filum terminale/ conus medullaris
Imaging features	T1 – hypointense T2 – hyperintense, **Target sign +** Heterogenous enhancement **widened neural foramina +**	T1 – isointense > hypointense T2 – hyperintense with mixed signal Heterogenous – cystic/vascular changes (hemorrhage/thrombus) Moderate enhancement **widened neural foramina +**	T1 – iso to hypointense T2 - iso to hyperintense **Ginkgo leaf sign+** (intradural) Intense homogenous enhancement, **Dural tail +** Calcifications +/-	T1- hypointense T2 – hyperintense **Cap sign +** Calcifications +/- Homogenous / Heterogenous enhancement (amount of haemorrhage)
Tx	Surgery if symptomatic	Surgery	Surgery	Conus medullaris involvement an important surgical consideration