KARNATAKA RADIOLOGY EDUCATION PROGRAM

CASE PRESENTATION

MENTOR: DR SANTOSH PATIL

KAHER UNIVERSITY

J.N.MEDICAL COLLEGE, BELAGAVI

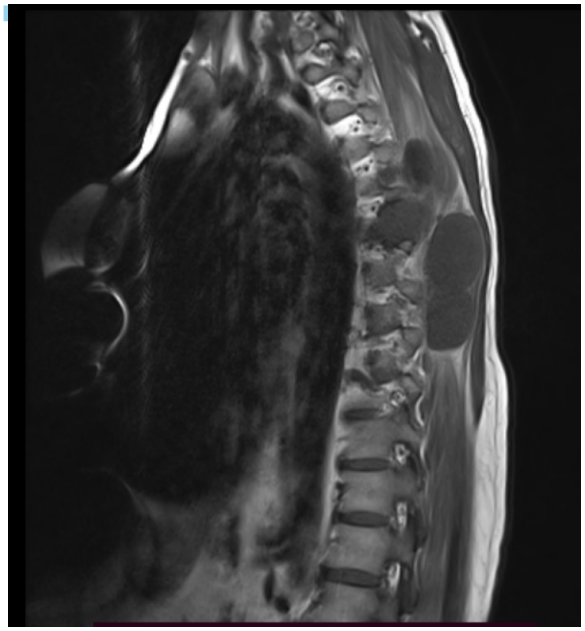
HISTORY-

A 51 year old female patient presented to the KLE Hospital on 4th April 2025 for getting a MRI SPINE PLAIN SCAN done, On taking brief history it was found-

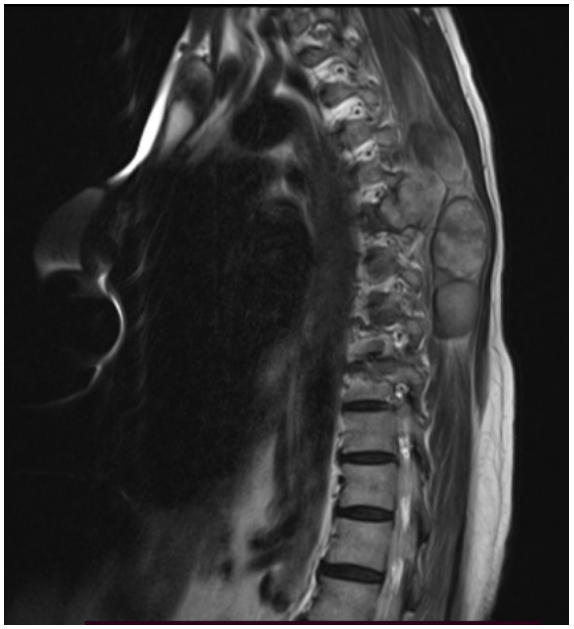
- Patient had mild mid & lower back pain which was non radiating in nature since a period of 1 year
- Gradually the pain had increased in severity over a period of last 1 month.
- Since last 1 month patient also had developed swelling over the mid back region
- Swelling had increased in size rapidly in last 1 month span associated with increased upper back pain
- Patient also had complaints of pain in the left upper limb
- There was no history of bowel/ bladder involvement


R
D-L Spine AP
52.9 %
D-L Spine Lat
53.0 %
KALLAVVA R ANGADI ,
51 year(s) Female
04/04/2025 11:20:38
3220
DR AJAY KALE
KLE CENTENARY CHARITABLE HOSPITAL & MRC

FINDINGS ON MRI SPINE PLAIN-



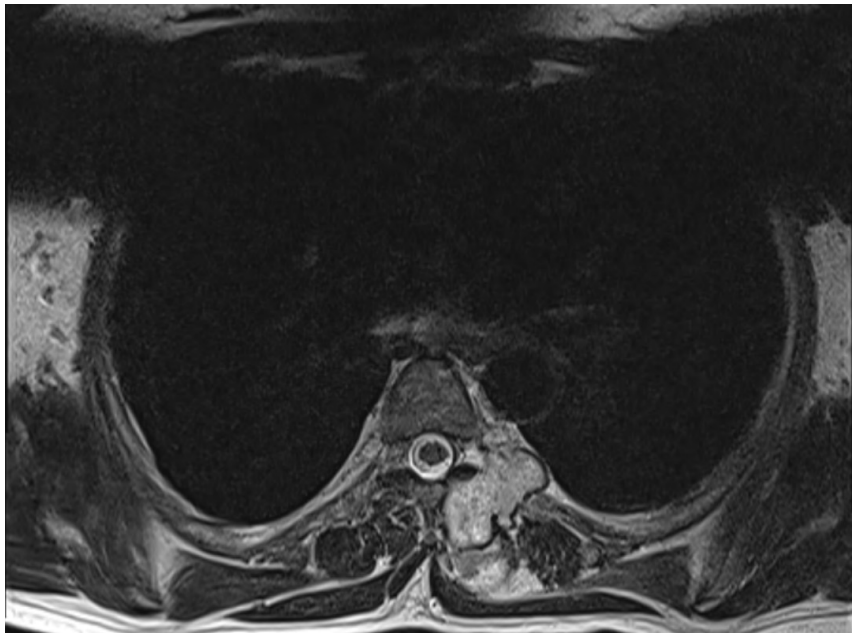
T1 SAGITTAL



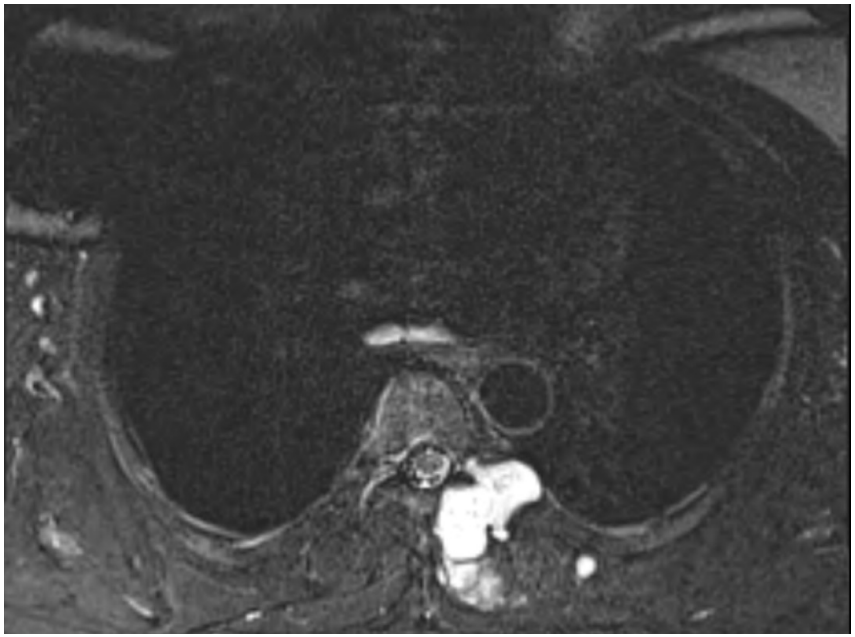
T2 SAGITTAL

There are seen few well-defined T1 hypointense and T2 heterogeneously hyperintense muti-lobulated mass lesions with smooth margins in the left para-midline back region in the intermuscular plane from D4 to D8 vertebral body levels for an approximate length of 8.0-9.0 cms.

FINDINGS ON MRI SPINE PLAIN-



T2 AXIAL

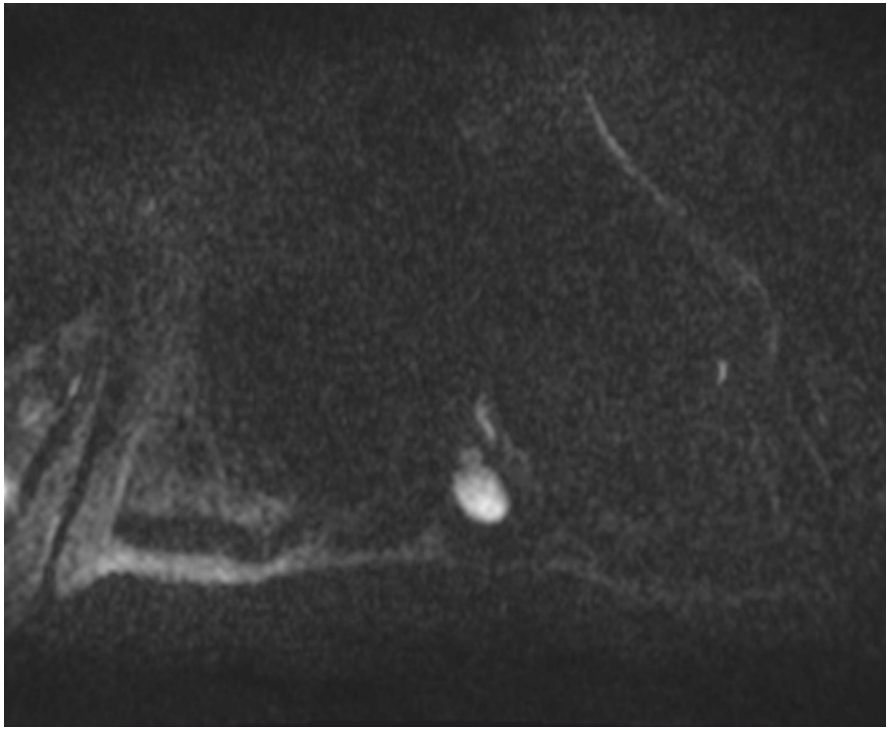


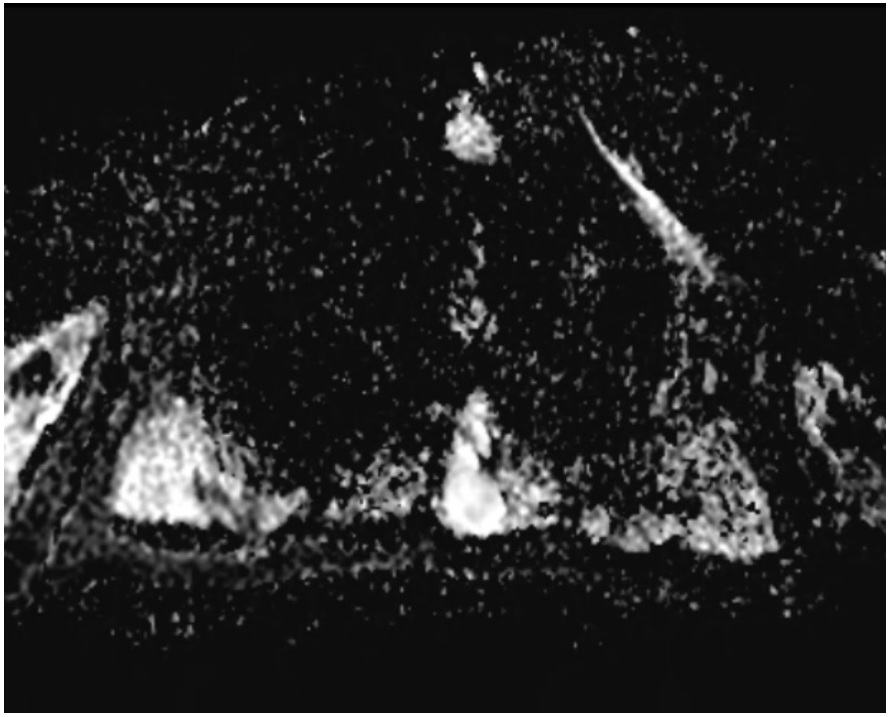
FAT SATURATED SEQUENCE

The mass lesions are seen to efface the epaxial musculature particularly the multifidus muscle on left side with epicenter of the lesion present in intermuscular plane.

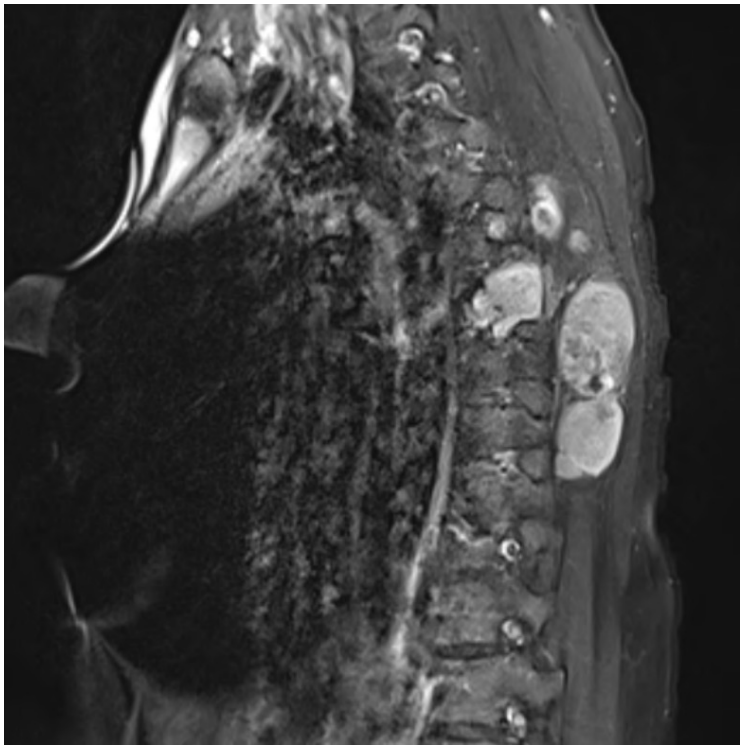
Medially, One of the lesion is seen to extend into the left neural foramina at D5-D6 level causing its widening

FINDINGS ON MRI SPINE PLAIN-





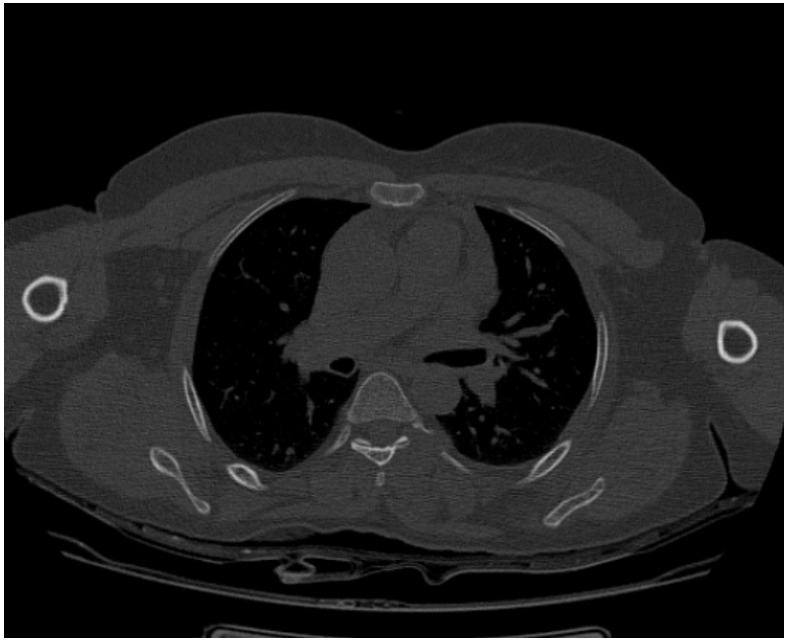
On DWI sequence, there are seen areas of subtle diffusion restriction.

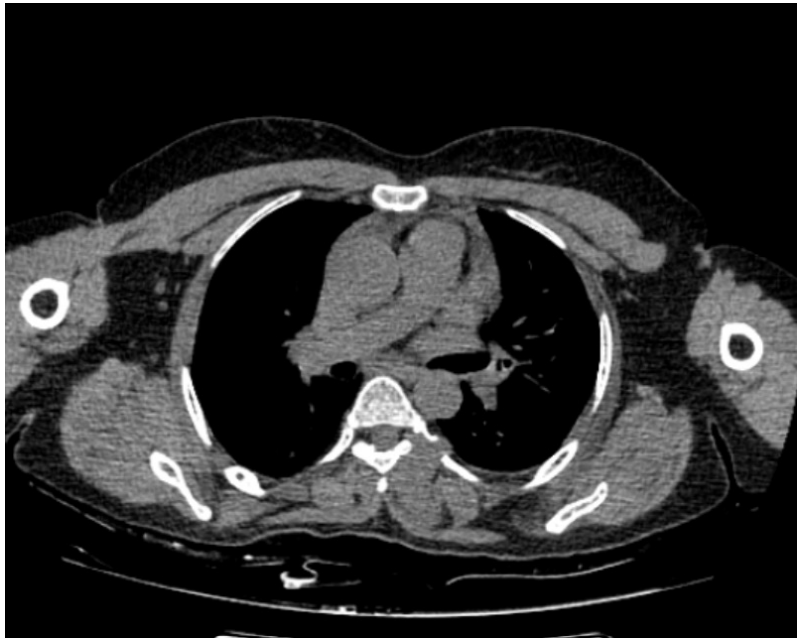


On contrast administration, the lesions show peripheral rim of enhancement and central hypointense area (target sign).

Also lesion shows a small T2 hypointense area which is seen to show no enhancement on contrast study.

FINDINGS ON CT-





Anteriorly, One of the lesion is seen to cause scalloping of the posterior aspect of left transverse process of the D6 vertebral body and posterior aspect of the 6^{th} rib on left side. However, there is no evidence of any bony destruction noted.

Medially, The lesion is seen to cause neural foramina widening at the level of D5-D6 on left side

DIFFERENTIALS-

1. Neurofibroma
2. Schwannoma
3. Malignant peripheral nerve sheath tumour

NEUROFIBROMA-

- POINTS IN FAVOUR -
  - T1 hypointense and T2 hyperintense mass lesion with enhancement on contrast study.
  - The lesion was seen to cause widening of the neural foramina with mild intracanalicular extension
  - Split fat sign positive
  - On CT, osseous remodelling/ scalloping was noted.
  - There was no evidence of any cystic area/ fatty change/ hemorrhage within the lesion.

- POINTS AGAINST-
  - Rapidly growing mass
  - Presence of pain over these nodules
  - Heterogenous appearance of lesion on T2 weighted imaging.

SCHWANNOMA-

- POINTS IN FAVOUR-
  - T1 hypointense and T2 hyperintense mass lesion with enhancement on contrast study.
  - The lesion was seen to cause widening of the neural foramina with mild intracanalicular extension
  - Heterogenous appearance of lesion on T2 weighted imaging
  - Split fat sign positive
  - On CT, osseous remodelling/ scalloping was noted.

- POINTS AGAINST-
  - Rapidly growing mass
  - Presence of pain over these nodules
  - There was no evidence of any cystic area/ fatty change/ hemorrhage within the lesion.

MALIGNANT PERIPHERAL NERVE SHEATH TUMOURS-

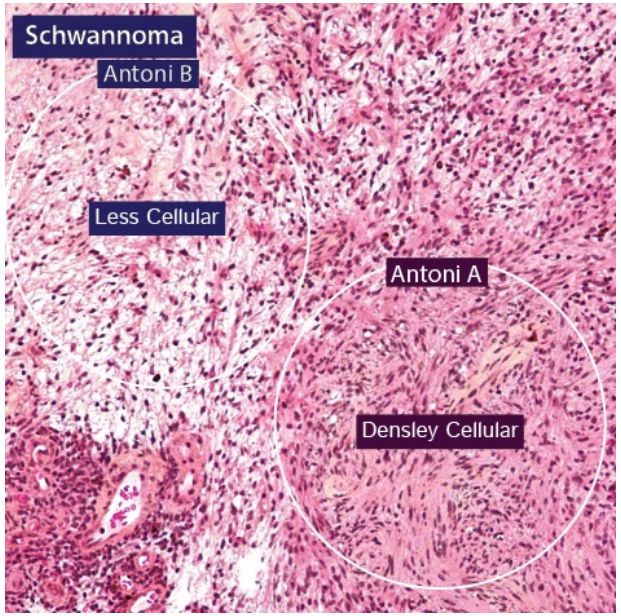
- POINTS IN FAVOUR-
  - T1 hypointense and T2 hyperintense mass lesion with enhancement on contrast study.
  - The lesion was seen to cause widening of the neural foramina with mild intracanalicular extension
  - Rapidly growing mass
  - Presence of pain over these nodules
  - Overall lesion size more than 5 cms

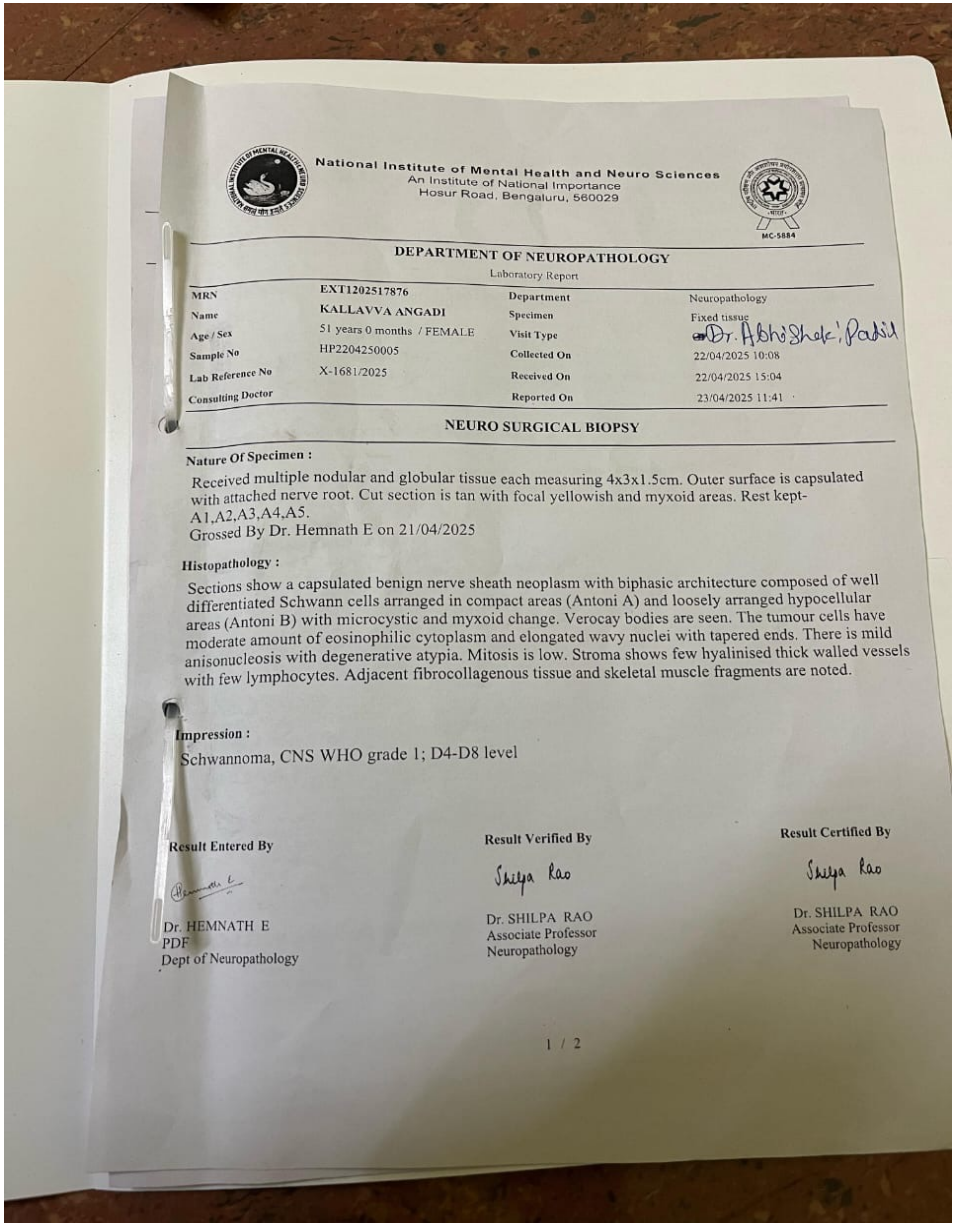
- POINTS AGAINST-
  - Often present as T2 hypointense lesion due to the presence of high collagen
  - Margins of the lesion were smooth
  - Target sign positive
  - No evidence of hemorrhage or areas of necrosis within the lesion
  - No evidence of any bony destruction/ bony erosion/ aggressive periosteal reaction.

FOLLOW UP-

- Patient was operated on 15th April 2025- D4 to D8 exploration with excision/ debulking of multiple soft tissue lesions was done.
- Patient was not given any chemo/ radiation therapy
- Sample was taken post surgery and sent for histopathological examination.
- Patients condition improved significantly post surgery and so patient was discharged 2 days later.
- Patient has been advised for MRI spine 6 months later to look for any recurrence in future.
- Currently patient is taking medications like Benfica forte & juviana plus which is used in treatment of neuropathic pain

HISTOPATHOLOGICAL EXAMINATION-





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An Institute of National Importance
Hosur Road, Bengaluru, 560029

MC-5884

DEPARTMENT OF NEUROPATHOLOGY

Laboratory Report

MRN	EXT1202517876	Department	Neuropathology
Name	KALLAVVA ANGADI	Specimen	Fixed tissue
Age / Sex	51 years 0 months / FEMALE	Visit Type	Dr. Abhishek, Padiri
Sample No	HP2204250005	Collected On	22/04/2025 10:08
Lab Reference No	X-1681/2025	Received On	22/04/2025 15:04
Consulting Doctor		Reported On	23/04/2025 11:41

NEURO SURGICAL BIOPSY

Nature Of Specimen :

Received multiple nodular and globular tissue each measuring 4x3x1.5cm. Outer surface is capsulated with attached nerve root. Cut section is tan with focal yellowish and myxoid areas. Rest kept-A1,A2,A3,A4,A5.
Grossed By Dr. Hemnath E on 21/04/2025

Histopathology :

Sections show a capsulated benign nerve sheath neoplasm with biphasic architecture composed of well differentiated Schwann cells arranged in compact areas (Antoni A) and loosely arranged hypocellular areas (Antoni B) with microcystic and myxoid change. Verocay bodies are seen. The tumour cells have moderate amount of eosinophilic cytoplasm and elongated wavy nuclei with tapered ends. There is mild anisonucleosis with degenerative atypia. Mitosis is low. Stroma shows few hyalinised thick walled vessels with few lymphocytes. Adjacent fibrocollagenous tissue and skeletal muscle fragments are noted.

Impression :

Schwannoma, CNS WHO grade 1; D4-D8 level

Result Entered By

Dr. HEMNATH E
PDF
Dept of Neuropathology

Result Verified By

Shilpa Rao

Dr. SHILPA RAO
Associate Professor
Neuropathology

Result Certified By

Shilpa Rao

Dr. SHILPA RAO
Associate Professor
Neuropathology

1 / 2

SPINAL PERIPHERAL NERVE SHEATH TUMORS-

- Spinal nerve sheath tumors are the most common intradural extramedullary masses.
- 35-45% of patients with nerve root tumors have neurofibromatosis 2. Multiple lesions are common in these patients.
- Neurofibromas are associated with NF1, whereas schwannomas are associated with NF2.
- Spinal nerve sheath tumors include:
    - Spinal schwannoma
    - Spinal neurofibroma
    - Spinal ganglioneuroma

IMAGING FEATURES –

1. RADIOGRAPH-

Bone changes can be noted on plain film and can include:

- Enlarged neural foramina
- Bony errosions/ bony remodelling

2. CT-

- Density varies from hypodense to slightly hyperdense
- Widened neural exit foramina
- Bone scalloping
- Vertebral body scalloping
- Dumbell shaped lesion.

IMAGING FEATURES –

3. MRI-

T1: iso to hypointense

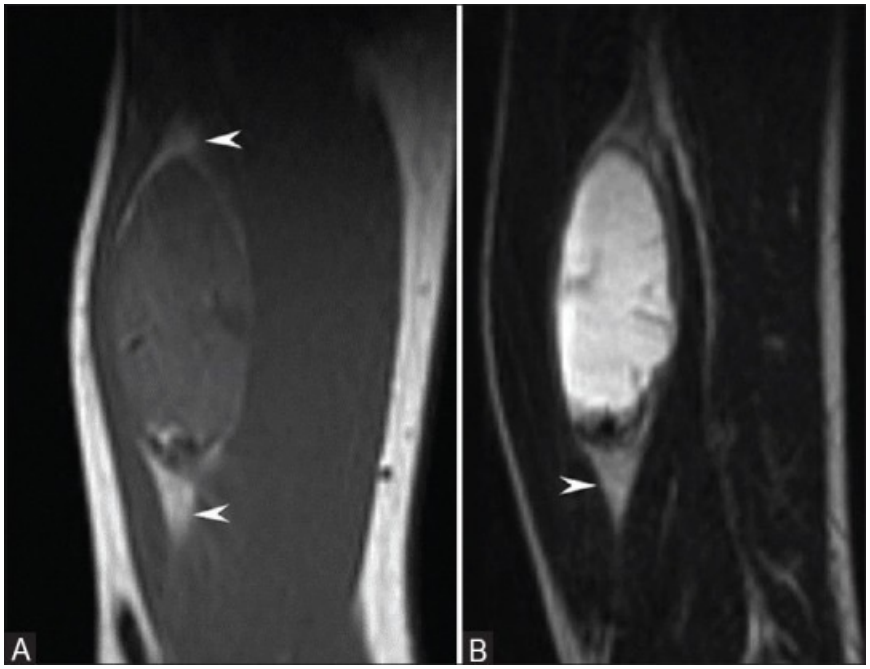
T2: Hyperintense

- Schwannomas may have mixed signal intensity on T2
- Hyperintense rim and central area of low signal resulting in a target sign may be seen in neurofibromas and occasionally also in schwannomas

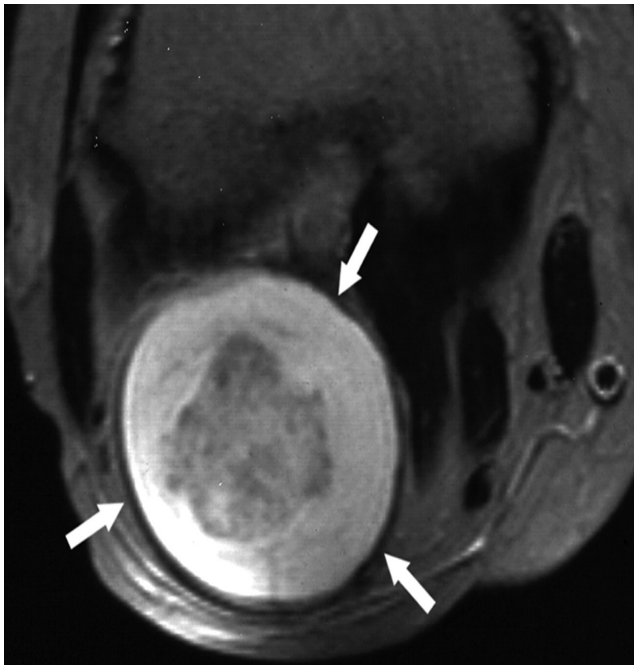
T1 C+ (Gd) : all of them show enhancement

FEATURES	SCHWANNOMA	NEUROFIBROMA	MALIGNANT PERIPHERAL NERVE SHEATH TUMOUR
NERVE RELATION TO THE MASS	Central	Eccenteric	Central
TARGET SIGN	Present	Present	Absent
Split fat sign	Present	Present	Absent
Fascicular sign	Present	Present	Can be present
Bony destruction	Absent	Absent	Present
Peri-lesional edema	Absent	Absent	Present

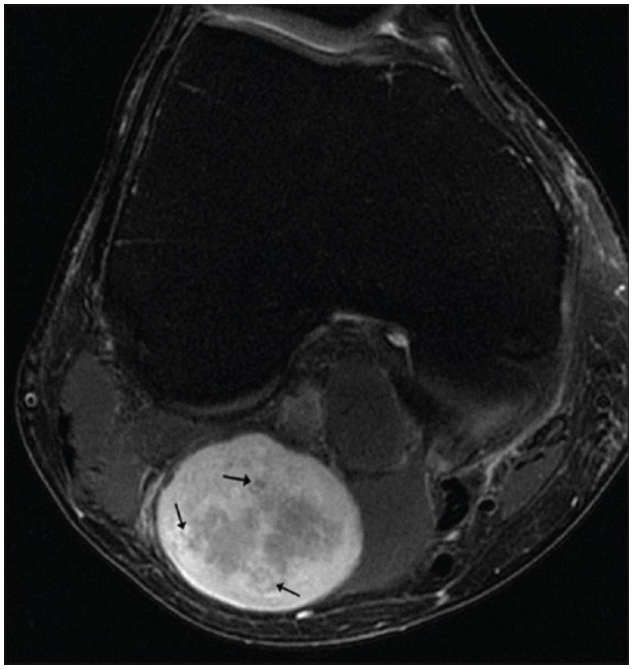
SIGNS-



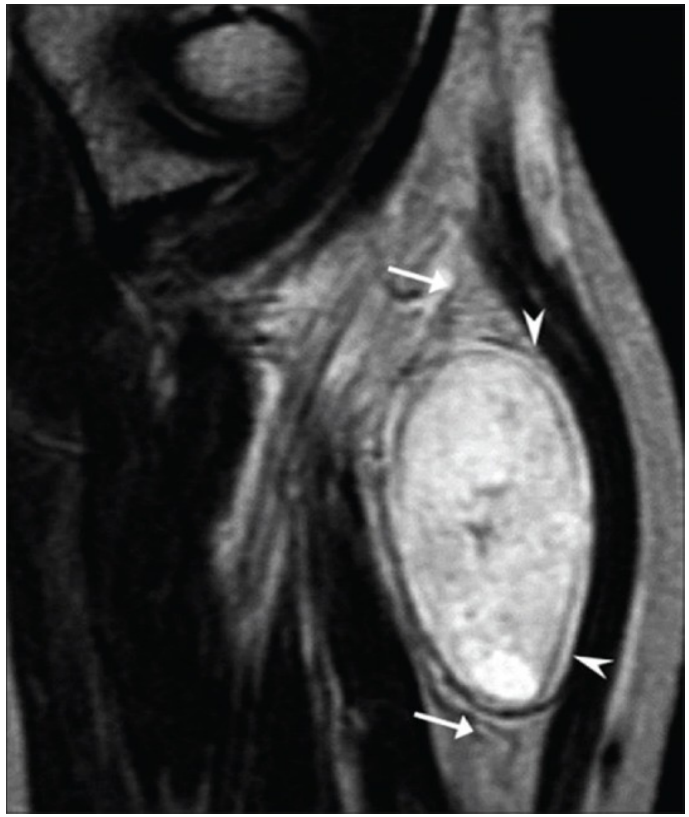
SPLIT FAT SIGN



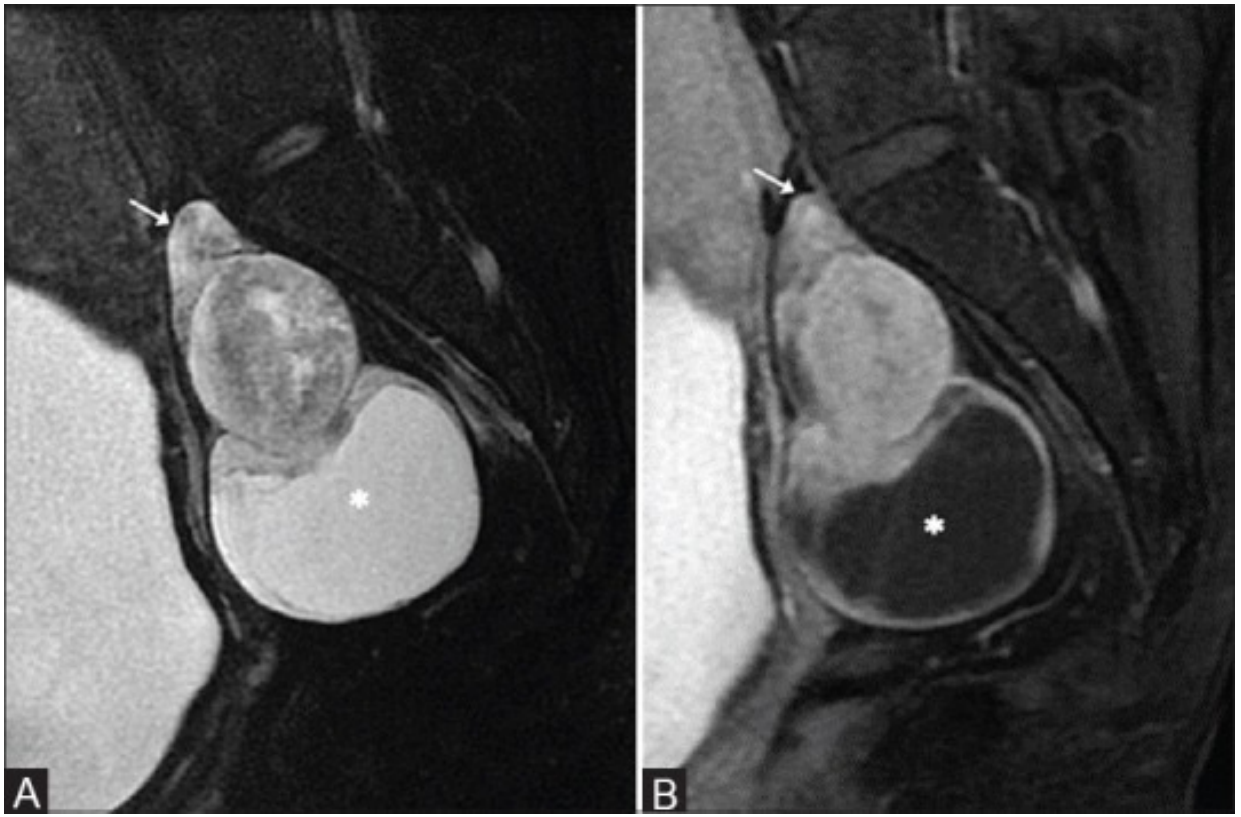
TARGET SIGN



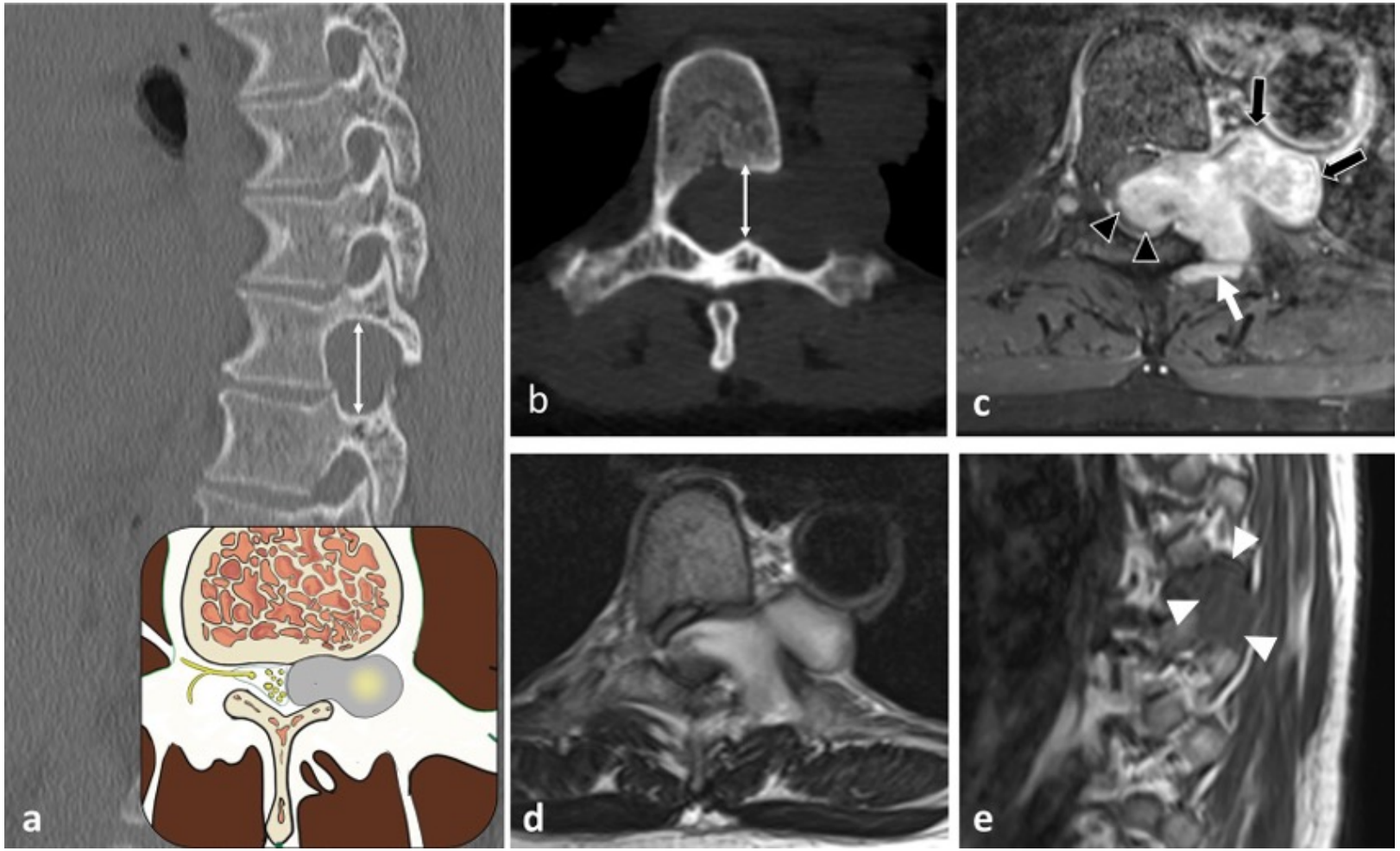
FASCICULAR SIGN



T2 HYPERINTENSE RIM



INTRATUMORAL CYST


a
b
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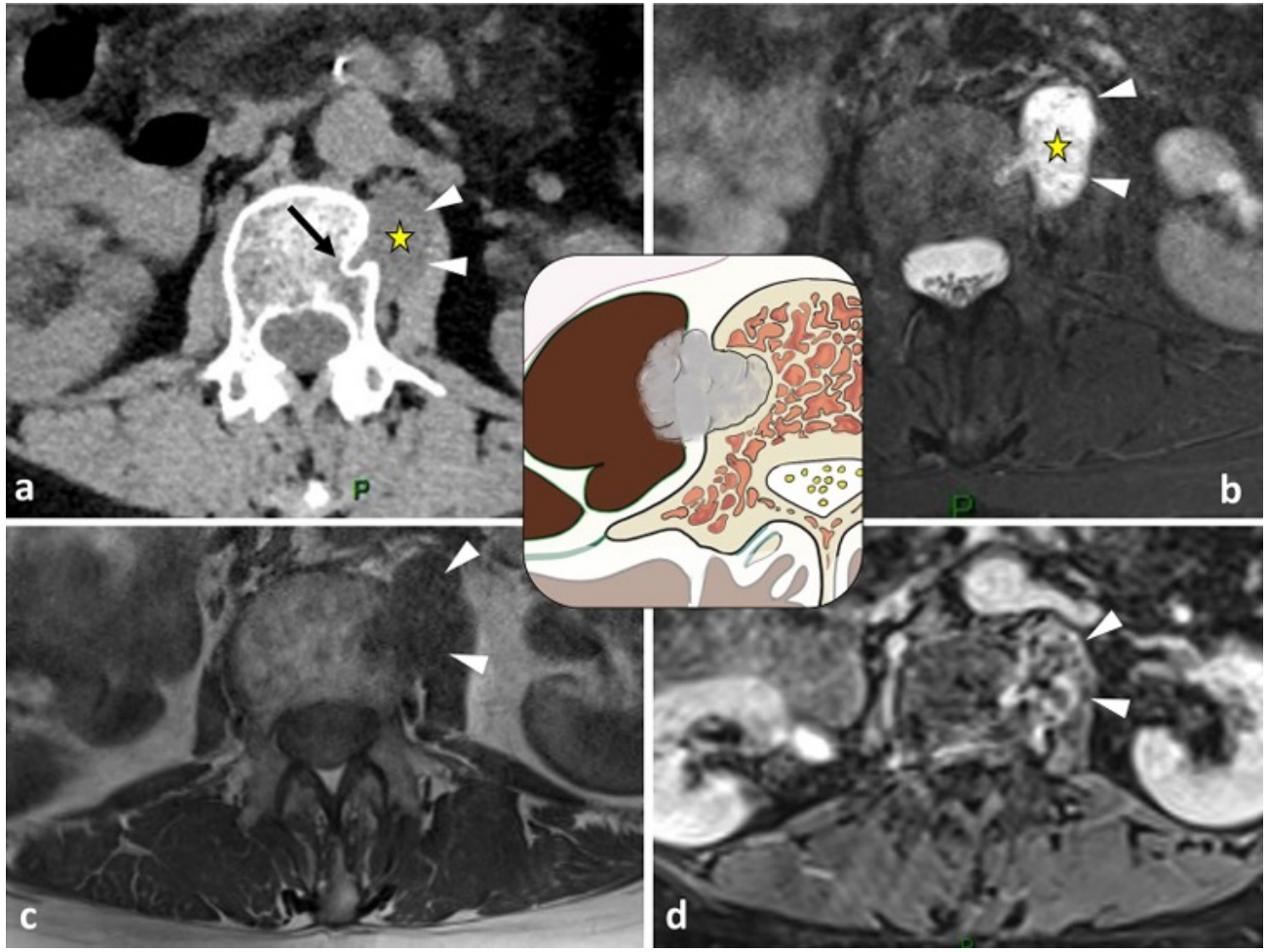
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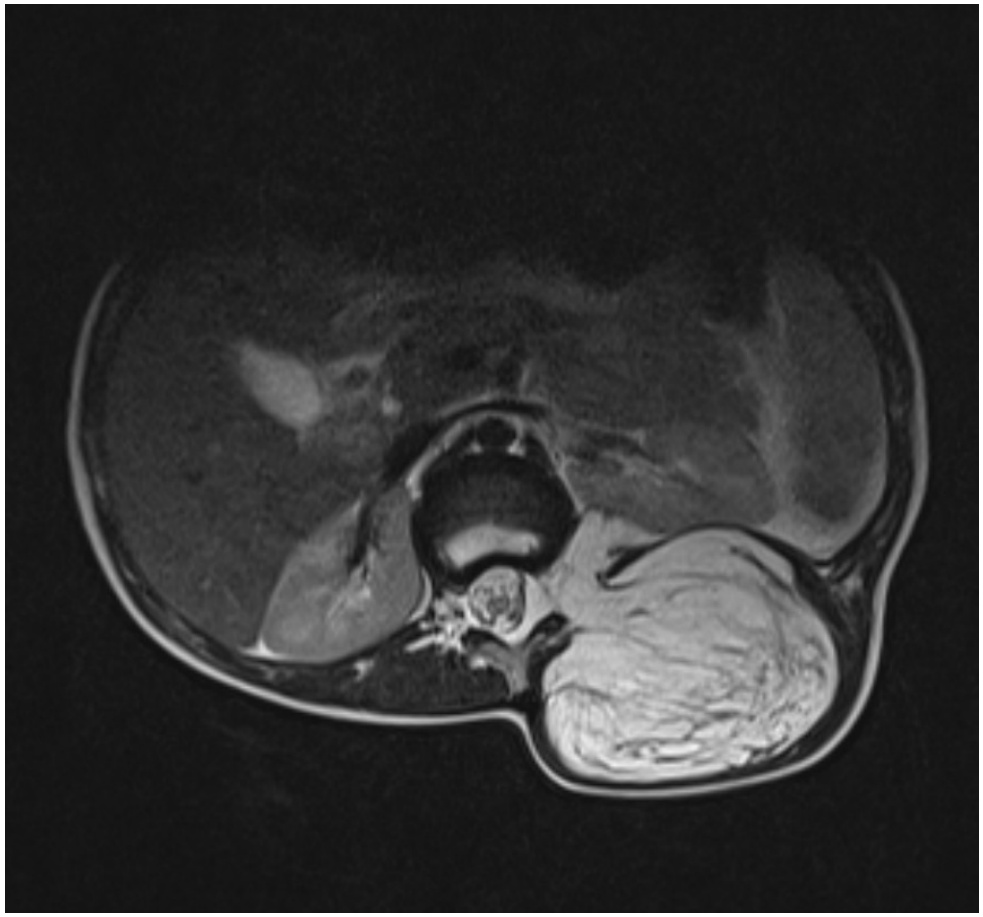

THANK YOU!