

DIASTEMATOMYELIA

DEFINITION

- Diastematomyelia is a rare form of spinal dysraphism characterized by a sagittal cleft that splits the spinal cord or conus medullaris, into two hemicords
- Each hemicord contains central canal, dorsal horn /root and a ventral horn/root

ETIOLOGY

- abnormal development of the notochord between 15 and 18 days gestation resulting in complete or incomplete division of the spinal cord into two Hemicords
- Most common anomaly of the split notochord spectrum

- Different from DIPLOMYELIA where 2 separate complete cords
- Diastematomyelia and diplomyelia considered part of SPLIT CORD MALFORMATIONS

DEMOGRAPHICS

- Diagnosis in childhood
- Adult presentation uncommon
- $F > M$

CLASSIFICATION

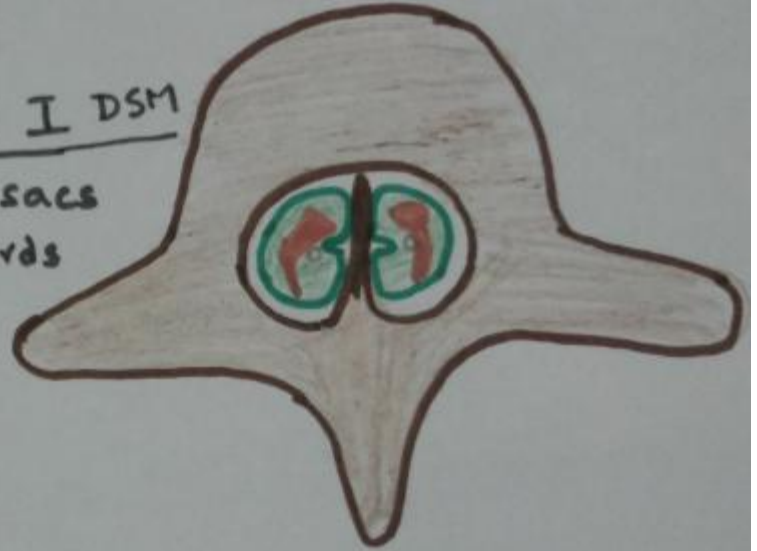
- PANG TYPE I
- 2 dural sac
- Osseous/fibrous spur
- More commonly symptomatic
- PANG TYPE II
- 1 dural sac
- No spur but fibrous bands may tether cord
- Rarely symptomatic unless tethering



NORMAL CORD

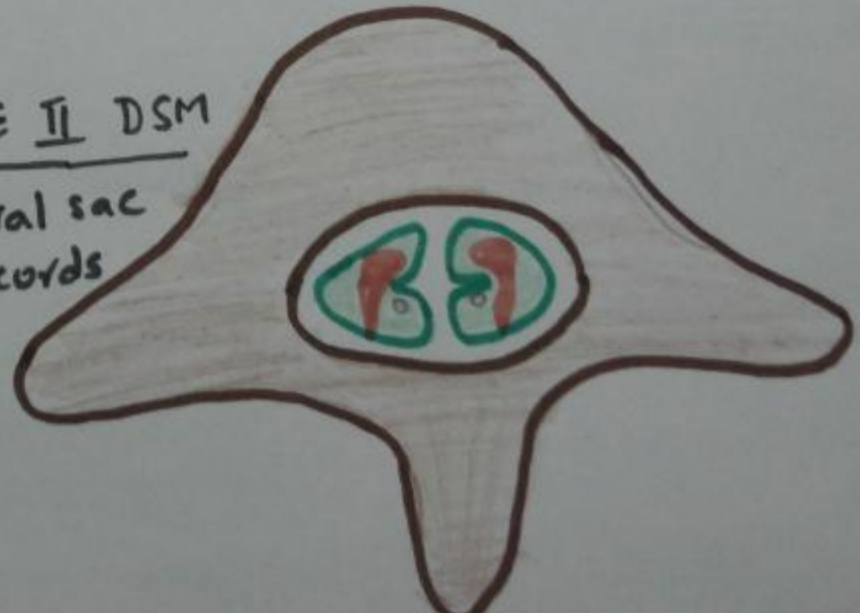
TYPE I DSM

2 Dural sacs
2 Hemicords
SPUR



TYPE II DSM

One dural sac
2 hemicords
No spur



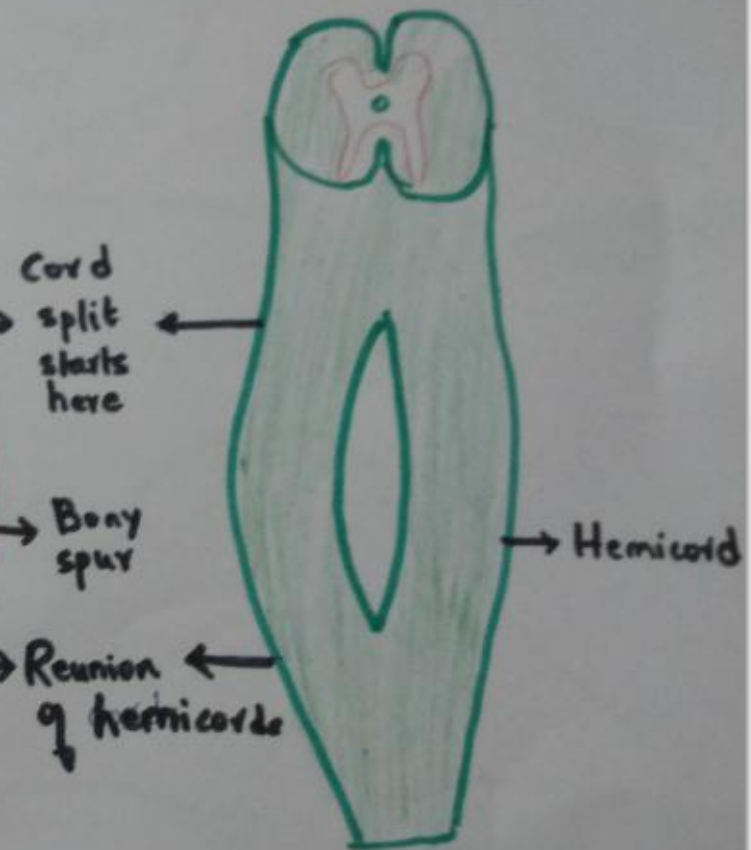
NORMAL CORD



TYPE I DSM



TYPE II DSM



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SYMPTOMS

- 🏠- Skin stigmata
- 🏠 Orthopedic deformities of foot.
- 🏠 Spina bifida aperta
- 🏠 Weakness in lower extremities
- 🏠 Scoliosis
- 🏠 Bladder and bowel disturbance
- 🏠 Short &/thin leg
- 🏠 Back pain

CLINICAL PROFILE

Skin findings

Hypertrichosis

Capillary haemangioma

Hyperpigmentation

Subcutaneous lipoma

Dimple

Orthopedic deformities

Scoliosis

Kyphosis

Unilateral leg atrophy

Pes cavus/valgus

Trophic ulcers

Neurological findings

Paraparesis

Unilateral leg paresis

Bladder and bowel dysfunction.





ASSOCIATED LESIONS

- Tethered cord 75 %
- Thick filum terminale 40 -90 %

ASSOCIATED LESIONS

85% of the patients had more than one spinal lesion as

- ❧ Thick filum terminale.
- ❧ Myelomeningocele.
- ❧ Meningocele.
- ❧ lipo-myelomeningocele.
- ❧ intra-dural arachnoid cyst.

- ❧ dermal sinus tract.
- ❧ dermoid cyst.
- ❧ teratoma.
- ❧ dorsal lipoma.

RADIOLOGICAL FINDINGS

- Plain Xrays
- Ultrasound
- CT
- MRI

PLAIN XRAY FINDINGS

- ✿ Bifid lamina.
- ✿ Scoliosis.
- ✿ Hemi vertebra.
- ✿ Accessory lamina.
- ✿ Fused ribs.
- ✿ Widened interpediculate distance

- ✦ Bony median septum.
- ✦ Bifid vertebra.
- ✦ Kypho-scoliosis.
- ✦ Sacral agenesis.
- ✦ Blocked vertebra.

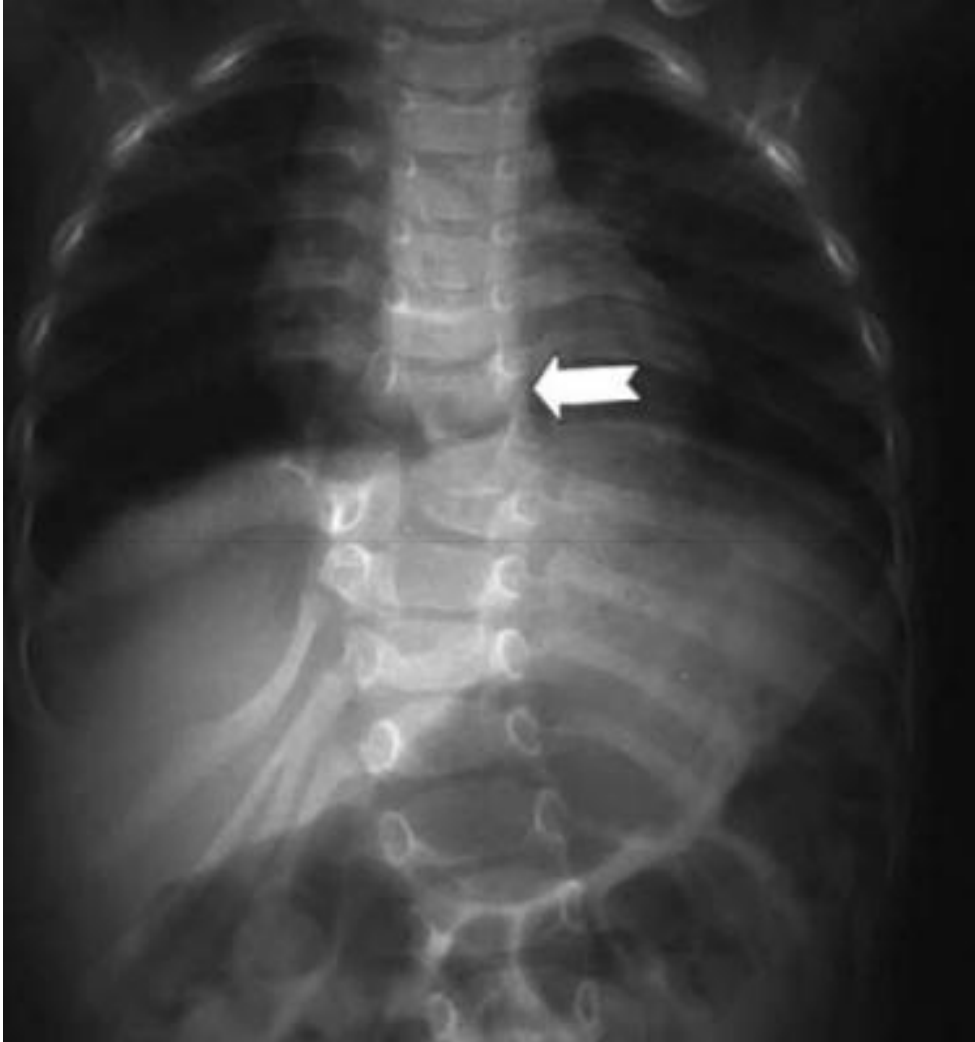
PLAIN XRAY



PLAIN XRAY



PLAIN XRAY

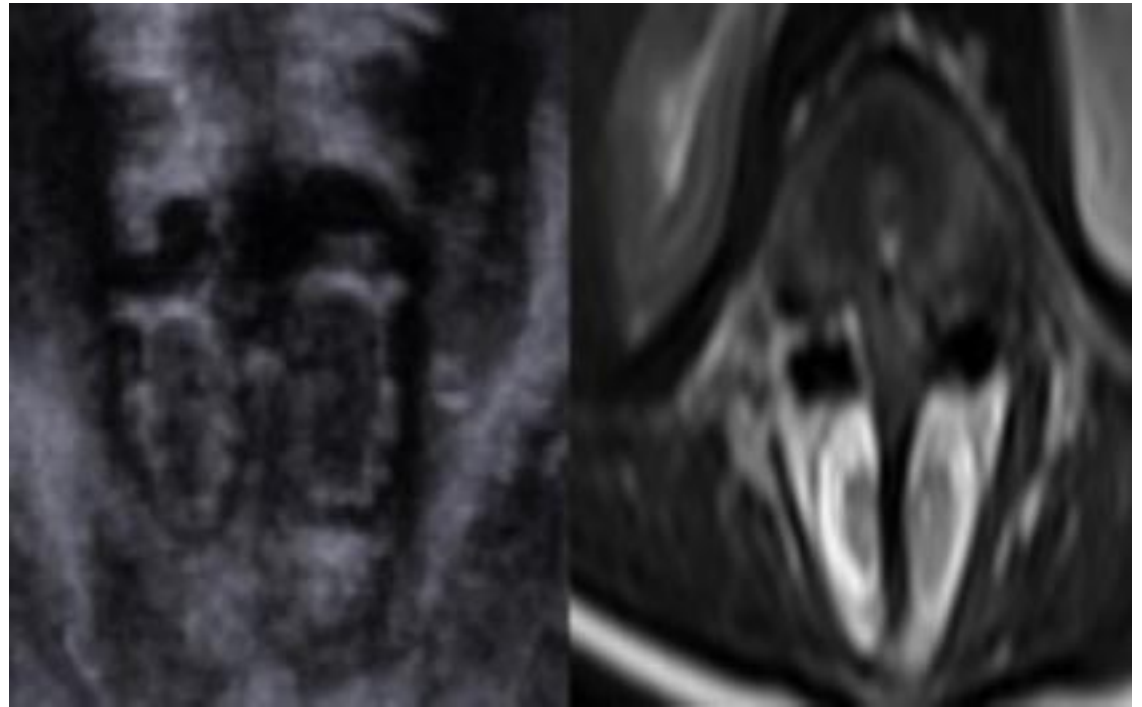


ULTRASOUND

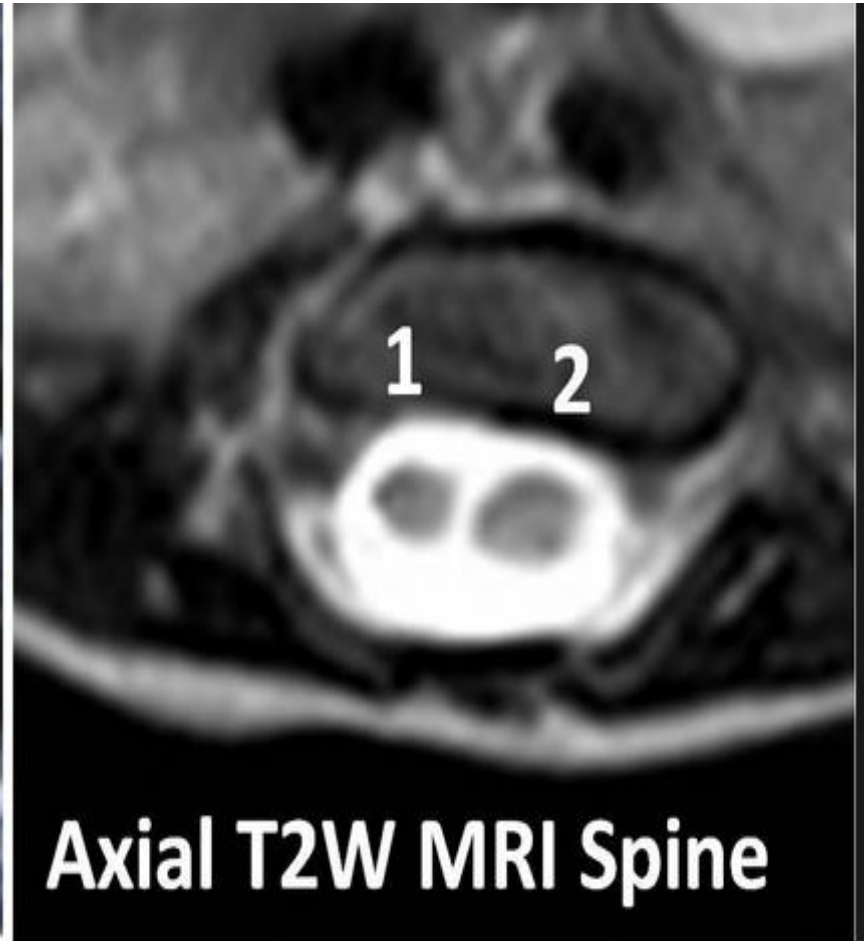
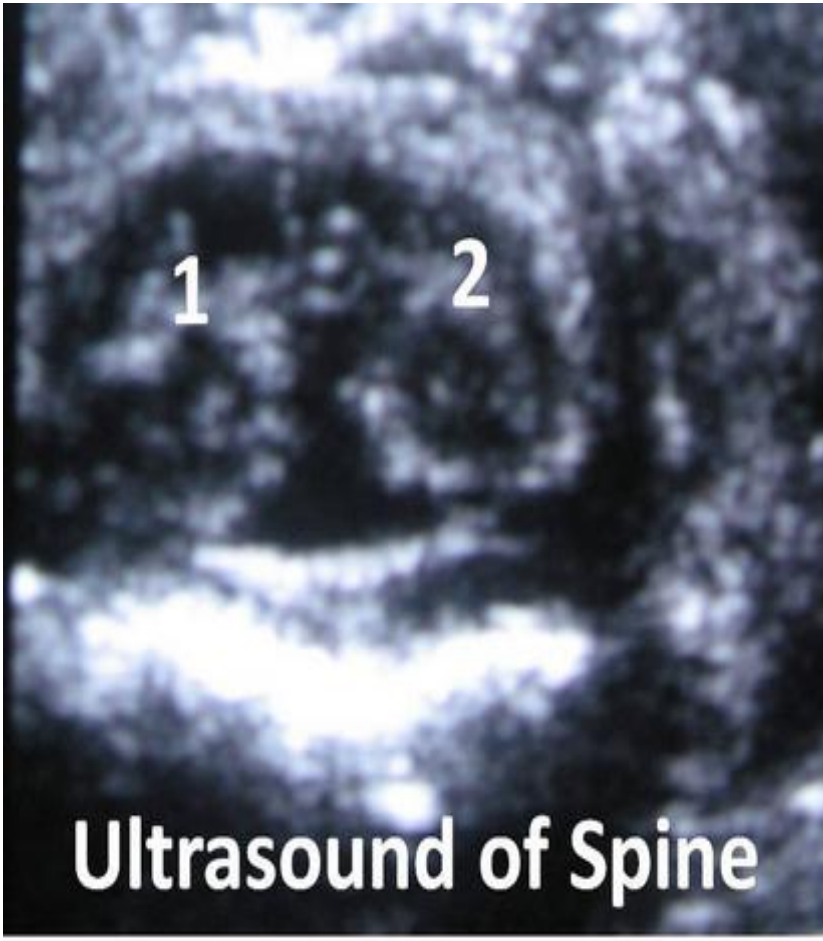
NORMAL CORD



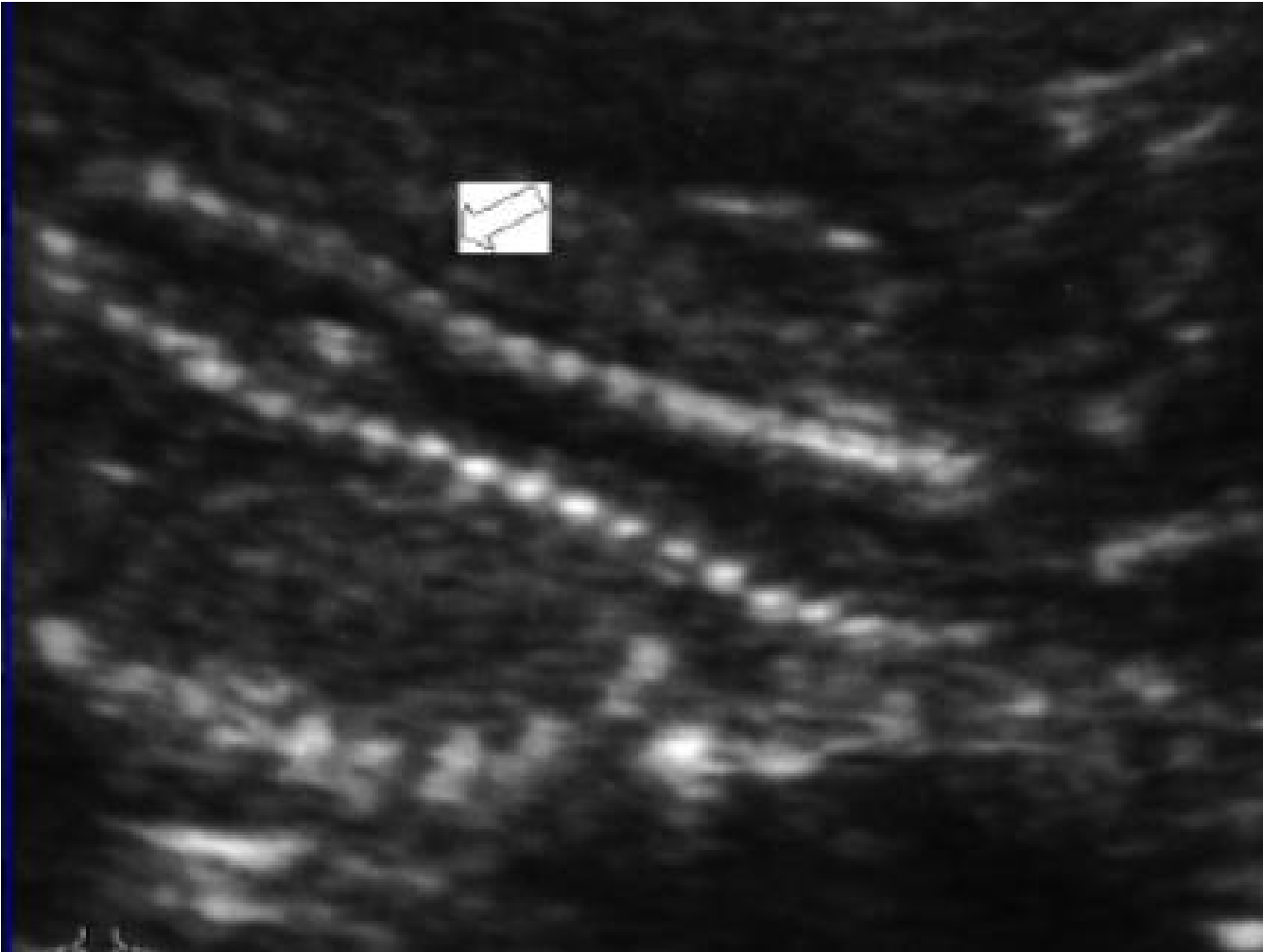
TWO HEMI CORDS



ULTRASOUND



ANTENATAL ULTRASOUND



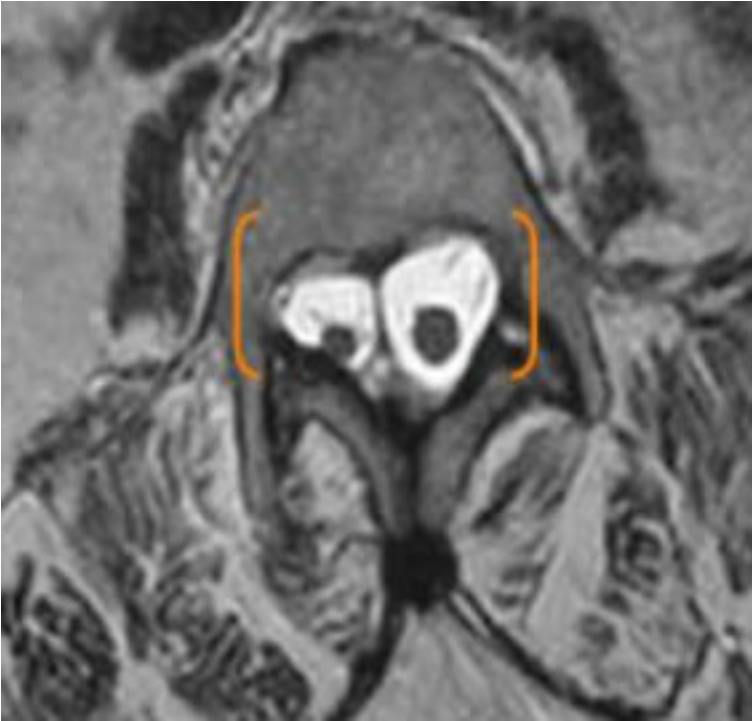
MRI



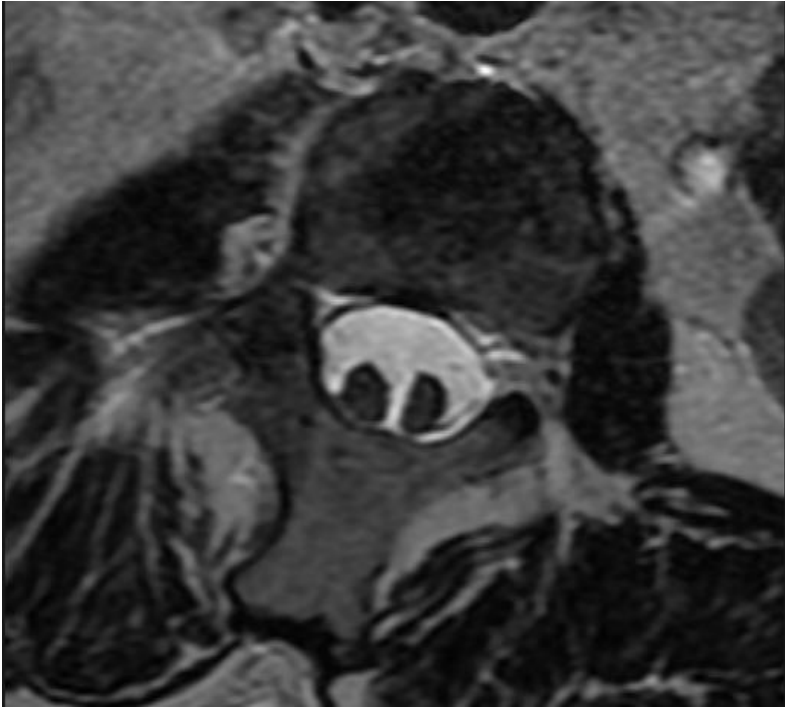
MRI

- Establishes the diagnosis
- Classifies into type I or type II
- Detects tethered cord
- Other associated anomalies

TYPE I

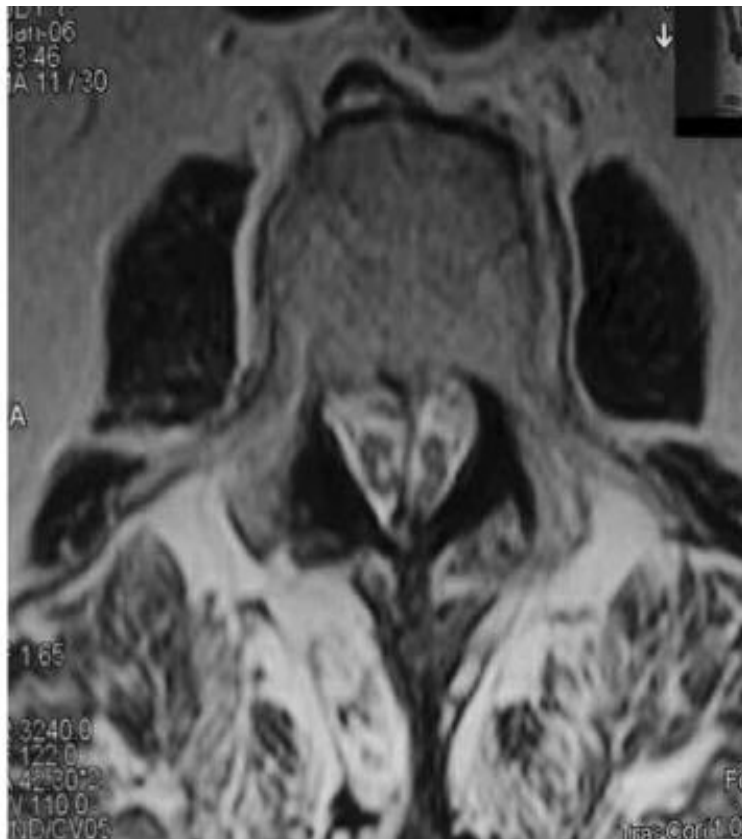


TYPE II

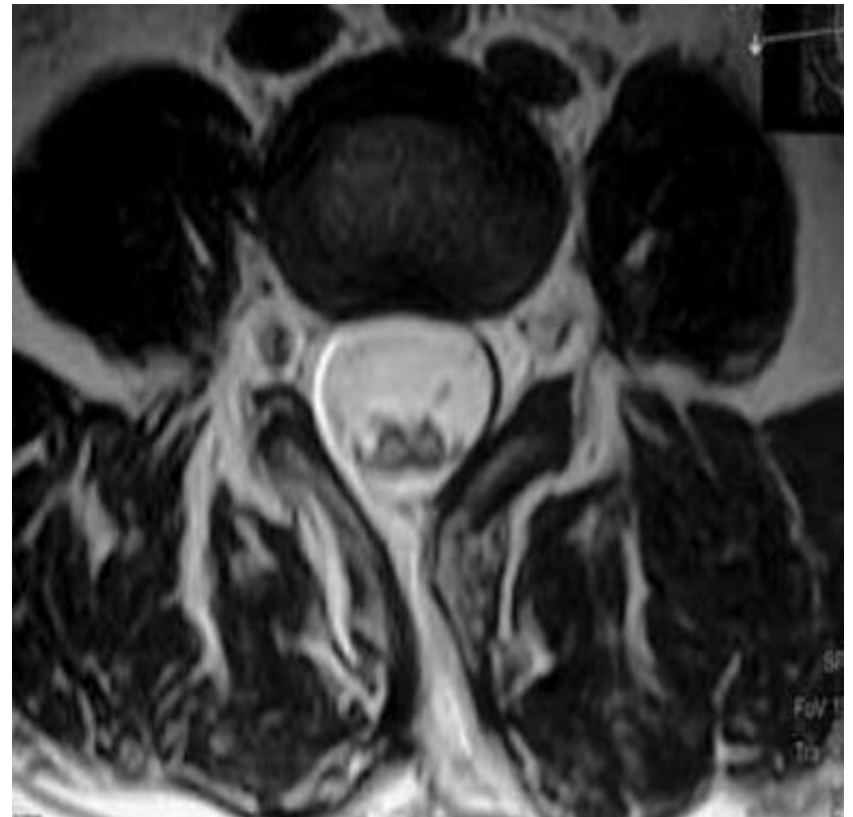


MRI

TYPE I



TYPE II



DIASTEMATOMYELIA WITH TETHERED CORD



DIASTEMATOMYELIA WITH LIPOMA OF FILUM TERMINALE



CT SCAN

- Best for bony anomalies

CT SCAN - BONY SPUR

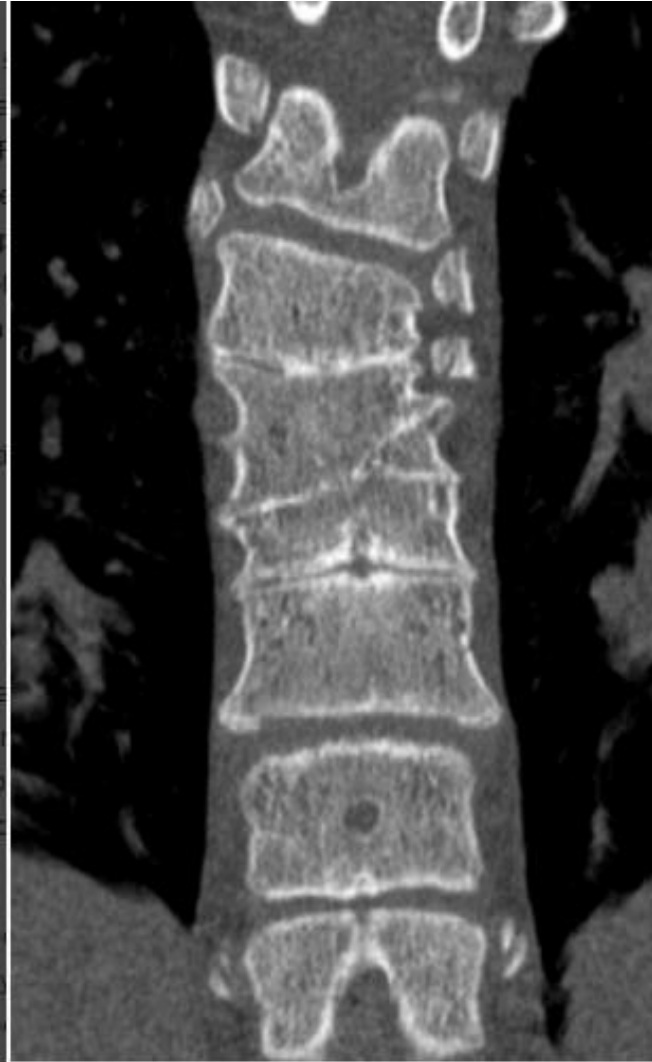


3 D CT

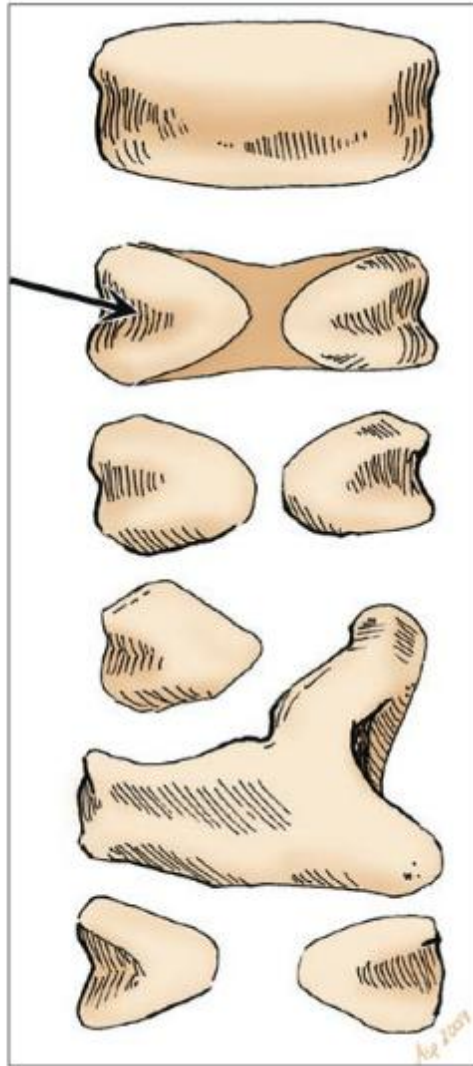
- Intersegmental laminar fusion
- Pathognomonic finding



CT – FUSION OF VERTEBRAL BODIES



3D CT – SEGMENTATIONAL ANOMALIES



TREATMENT

- Asymptomatic No treatment
- Symptomatic
 - surgical release of tethered cord
 - resection of spur
 - repair of dura

90 % improve following surgery

Retherring in 10 %

CONCLUSIONS

- Diastematomyelia is a rare form of spinal dysraphism
- Splitting of cord into 2 hemicords
- Associated pathologies are very common

CONCLUSIONS

- Classified into type 1 and type 2 depending on the number of dural sacs and spur
- Radiological imaging plays an important role
- MRI is the investigation of choice
- Overall prognosis is good

THANK YOU

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