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
- Cord split starts here
- Bony spur
- Reunion of hemicords

TYPE II DSM
- Hemicord
CLASSIFICATION

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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

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<td>Dimple</td>
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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
ULTRASOUND

NORMAL CORD

TWO HEMI CORDS
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
- Pathognomic 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

Rethering in 10 %
CONCLUSIONS

• Diastematomyelia is a rare form of spinal dyraphism

• 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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