A Rare Case of Spinal Dysraphism with Partial Agenesis of the Corpus Callosum

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Case Report

- 27-year-old male complaining of low back pain since 2009
- Diffuse low back and lower extremity pain with paresthesias, no specific dermatomal distribution
- Generalized weakness of lower extremities
- Recently began experiencing urinary retention
- Developed neurogenic claudication
- Decreased balance
MRI of the Lumbar Spine

- Conus medullaris tip at L4-5 level
- Thickening of the filum terminale
- Fibrolipomatous tissue vs. extradural arachnoid cyst
Partial Agenesis of Corpus Callosum

Our patient’s MRI brain showing absent splenium

T1-weighted MRI of brain showing normal appearance of the corpus callosum
Diagnosed with Tethered Cord Syndrome
Laminectomy of L5, S1, S2, and S3
    Untethering of the spinal cord was unsuccessful
Transferred to acute inpatient rehabilitation facility
Post-Operative Rehabilitation

- Post-operative back pain, muscle spasms
- Improvement in paresthesias and pain
- Symptoms of urinary retention improved. Post-void residual volume was minimal
- Discharged with modified independence of ADLs, requiring a single point cane to ambulate
Occult Spinal Dysraphism

Primarily a pediatric diagnosis

Rarely, symptoms will not manifest until adulthood

Incidence of closed spinal dysraphism is 0.05-5 in every 1000 births\(^\text{10}\)

Incidence of tethered cord syndrome in adults is unknown, but number of adults being diagnosed grows

If symptomatic, early surgical treatment reduces progressive neurological symptoms
Adult Tethered Cord Syndrome

- Etiology:
  - Thickened Filum Terminale
  - Lipoma
  - Lipomyelomeningocele
  - Diastematomyelia
  - Dermoid Cyst

- Symptoms
  - Pain
  - Weakness
  - Paresthesias
  - Urological dysfunction
Association with Agenesis of Corpus Callosum

- Incidence rate of 2-3% in the developmentally disabled population\(^7,^10\)
- May be asymptomatic, but is known to accompany seizures, cognitive disorders, autism, epilepsy, neuropsychiatric disorders, developmental retardation
- Can be observed in association with spinal malformations
  - Erol et al. (2013) described a 36.4% rate of callosal dysgenetic patients with closed spinal dysraphism in pediatrics\(^10\)
- The coexistence of dysgenesis of the corpus callosum and tethered cord syndrome in adults is rare and poorly documented
Conclusion

- 27 year-old male with late onset of symptoms related to Tethered Cord Syndrome due to thickening of filum terminale

- Although surgery was unsuccessful in untethering the cord, post-operative results were favorable

- Asymptomatic partial agenesis of corpus callosum with no evidence of open neural tube defects

- Always ask about bladder dysfunction in patients presenting with low back pain


