



Revision detethering surgery in a child with tethered cord syndrome associated with split cord malformation type II

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Abstract

Background: Tethered cord syndrome (TCS) is a complex neurological condition caused by abnormal fixation of the spinal cord, resulting in pathological stretching during growth. It is commonly associated with congenital spinal anomalies such as split cord malformation. Children may present with pain, neurological deficits, or musculoskeletal deformities. Early recognition and appropriate surgical intervention are essential to prevent irreversible neurological damage.

Key words: Tethered cord syndrome (TCS); Diastematomyelia; Split cord malformation Type II

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1. Introduction

Tethered cord syndrome is a disorder in which the spinal cord is abnormally attached to surrounding tissues, limiting its normal movement within the spinal canal. Split cord malformation Type II, also known as diastematomyelia, is characterized by two hemi cords enclosed within a single dural sac without an intervening septum^[1].

2. Case presentation

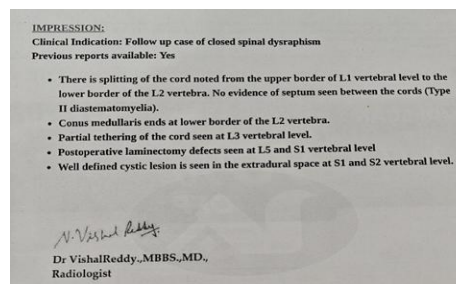
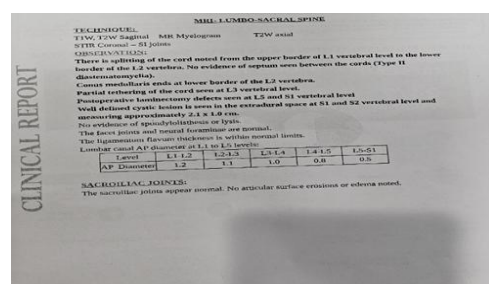
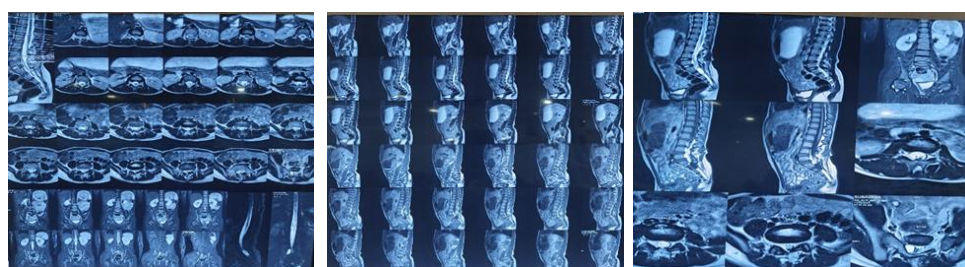
A Pediatric female patient presented with complaints of activity-related lower back pain, intermittent pain in the left lower limb, and a healing ulcer over the left foot. The child was a known case of tethered cord with an associated S1–S2 extradural cyst and split cord malformation Type II. Bladder and bowel habits were normal. The patient had previously undergone detethering surgery and was admitted for further evaluation and management due to recurrence of symptoms^[2].

3. On examination

- General condition: Stable.
- Gait: Normal.

- Neurological examination:
- Motor power: 5/5 in both lower limbs.
- Limb asymmetry: Right lower limb smaller than left.
- Sensory system: No gross deficits.
- Bowel and bladder function: Normal.

4. Evidence



5. Pathology

Magnetic resonance imaging of the whole spine revealed a split cord extending from the upper border of L1 to the lower border of L2 vertebra, without evidence of a bony or fibrous septum, confirming Split Cord Malformation Type II. An extradural cyst at the S1–S2 level contributing to tethering of the spinal cord was also noted.

6. Signs and symptoms / clinical manifestations

- Lower back pain aggravated by activity.
- Intermittent lower limb pain.
- Foot ulceration.
- Limb size discrepancy.
- Absence of bowel and bladder dysfunction.

7. Medical management

The patient underwent revision detethering of the filum terminal at the S1–S2 level following preoperative evaluation and anesthetic clearance. Postoperative management

included intravenous analgesics, antibiotics, proton pump inhibitors, and supportive care. Early mobilization was encouraged under supervision.

8. Nursing management

- Continuous neurological assessment.
- Pain assessment and management.
- Strict wound care and infection prevention.
- Monitoring urinary output and bladder function.
- Assistance with gradual mobilization.
- Education of caregivers regarding postoperative care and follow-up.

9. Outcomes

The postoperative period was uneventful. The urinary catheter was removed on the second postoperative day with successful spontaneous voiding. The patient demonstrated symptomatic improvement and remained neurologically stable at discharge.

10. Patient satisfaction

The patient's caregivers expressed satisfaction with the surgical outcome, nursing care, and overall treatment process. Improvement in pain and mobility was noted.

11. Evaluation

Revision detethering surgery effectively alleviated symptoms and prevented further neurological deterioration. Multidisciplinary management and vigilant nursing care contributed to a positive outcome.

12. Conclusion

This case emphasizes the importance of long-term follow-up in pediatric patients with tethered cord syndrome, especially those with associated split cord malformations. Timely revision detethering can lead to favorable neurological and functional outcomes when symptoms recur.

References

- [1] Pang D, Wilberger JE. Tethered cord syndrome in children. *Neurosurgery*.
- [2] McLone DG, Naidich TP. Diastematomyelia and split cord malformations. *Paediatric Neurosurgery*.
- [3] Tubbs RS et al. Surgical management of tethered cord syndrome. *Journal of Neurosurgery: Paediatrics*.