

Image Report

Triplomyelia in a case of diastematomyelia: A new entity

Charandeep Singh Gandhoke¹, Surendra Kumar Gupta¹, Anil Kumar Sharma¹, Sashank Ayalasonmayajula², Mamta Sinha², Saroj Kumar Pati³, Simran Kaur Syal⁴

Departments of ¹Neurosurgery, ²Anaesthesiology and ³Radiology, AIIMS Raipur, Tatibandh, Raipur, Chhattisgarh, ⁴Department of Pediatric Endocrinology, Bai Jerbai Wadia Hospital for Children, Parel, Mumbai, Maharashtra, India.

E-mail: *Charandeep Singh Gandhoke - charandeepsingh2008@gmail.com; Surendra Kumar Gupta - drsurendrakrgupta@gmail.com; Anil Kumar Sharma - dr.anilsharma02@gmail.com; Sashank Ayalasonmayajula - sashank.1905@gmail.com; Mamta Sinha - drmamta12@gmail.com; Saroj Kumar Pati - saroj.pati@gmail.com; Simran Kaur Syal - simransyal100@gmail.com



*Corresponding author:

Charandeep Singh Gandhoke,
Department of Neurosurgery,
AIIMS Raipur, Tatibandh,
Raipur - 492 099, Chhattisgarh,
India.

charandeepsingh2008@gmail.com

We report the case of a 6-year-old female child, 3rd child of a nonconsanguineous marriage, who presented with complaints of weakness of the right lower limb and deformity of the right foot since birth. She also complained of fever on and off, abdominal pain and dribbling of urine for 4 months. On examination, power in the right lower limb was 3/5 and all sensations in the right lower limb were decreased. She also had right foot congenital talipes equinovarus. Urine Routine/Microscopy was suggestive of urinary tract infection. Urine Culture/Sensitivity showed the growth of *Escherichia coli*. Antibiotics were given according to culture sensitivity. Her radiology revealed kyphoscoliotic deformity with segmentation anomalies including hemivertebrae and bifid spine at multiple levels, low lying tethered spinal cord (up to the upper sacral level) with diastematomyelia [Type 1 Split cord malformation (SCM) with 2 dural tubes] with a bony spur at D12/L1 level with triplomyelia at D10 level (3 hemicords within a single dural tube) and small lipomyelomeningocele attached to the right hemicord at L4/L5 level [Figures 1-4]. Horseshoe kidney was also present. Urodynamic study was suggestive of neurogenic bladder. At surgery, D10 to S1 laminectomy, excision of the dural sheathed bony spur with attached dura, detethering of

Received : 31 March 2020
Accepted : 18 September 2020
Published : 08 October 2020

DOI
10.25259/SNI_142_2020

Quick Response Code:



Figure 1: X-ray dorsolumbar spine showing severe kyphoscoliotic deformity.

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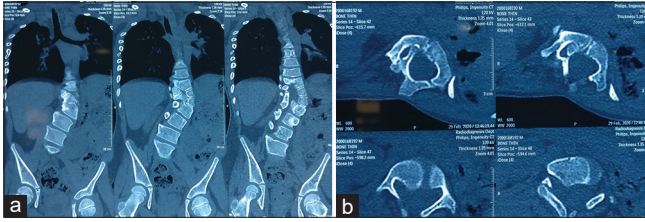


Figure 2: Computed tomography dorsolumbar spine revealed (a) segmentation anomalies including hemivertebrae and bifid spine at multiple levels and (b) bony spur dividing the spinal canal into two asymmetrical halves at D12/L1 level.

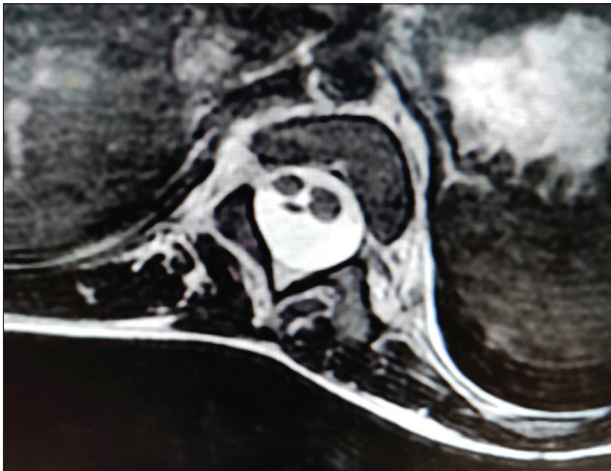


Figure 3: Axial magnetic resonance imaging dorsolumbar spine image at D10 level showing triplication of the spinal cord (triplomyelia).

cord (intraoperative neurophysiological monitoring through direct nerve root stimulation technique was used during detethering to avoid inadvertent injury to important nerves) with the reconstitution of the dural tube into one was done [Figure 4]. Intraoperatively, triplication of the spinal cord (triplomyelia) was seen [Figure 4b]. At D12/L1 level, the spinal cord split into two asymmetrical halves with separate dural coverings [Figure 4a]. At D10 level, the thicker left hemicord split again to form two smaller hemicords. A blunt dissector which was introduced at this level went through the split to touch the anterior dura. Above and below this level, the left hemicord continued as one [Figure 4b]. Her postoperative period was uneventful. The patient is on follow-up with us and is planned for a second stage deformity correction surgery at a later date. We reported this rare case to introduce a new entity in medical literature – “Triplomyelia in a case of Diastematomyelia,” which to the best of our knowledge is nowhere mentioned in world literature.

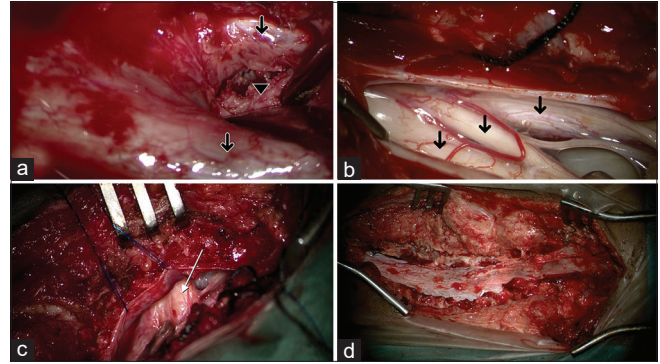


Figure 4: Intraoperative photographs showing (a) diastematomyelia with two dural tubes (arrows), with a rigid bony septum in between (black arrowhead). (b) At D10 level, there was triplication of the spinal cord (arrows). The thicker left hemicord split again to form two smaller hemicords. Above and below this level, the left hemicord continued as one. (c) Lipomyelomeningocele attached to the right hemicord at L4/L5 level (arrow) (d) reconstitution of the dural tube into one at the end of the procedure.

SCM's are of two types.^[1] Type 1 SCM or diastematomyelia is defined as two hemicords, each within a separate dural tube, separated by a rigid bony septum.^[1] Type 2 SCM or diplomyelia consists of two hemicords within a single dural tube, separated by a fibrous septum.^[1]

Declaration of patient consent

Patient's consent not required as patients identity is not disclosed or compromised.

Financial support and sponsorship

Nil.

Conflicts of interest

There are no conflicts of interest.

REFERENCES

1. Pang D, Dias MS, Ahab-Barmada M. Split cord malformation: Part I: A unified theory of embryogenesis for double spinal cord malformations. *Neurosurgery* 1992;31:451-80.

How to cite this article: Gandhoke CS, Gupta SK, Sharma AK, Ayalasomayajula S, Sinha M, Pati SK, *et al.* Triplomyelia in a case of diastematomyelia: A new entity. *Surg Neurol Int* 2020;11:324.