

Case Report

Isolated Bowel and Bladder Dysfunction following Single Level Lumbar Discectomy : A Rare Observation

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Abstract:

Cauda equina syndrome is reported as a complication in 0.2% - 1% following lumbar disc herniation. The pathophysiologic mechanism of this complication and its management is yet poorly understood. Though some factors has postulated in different studies. In this case, patient's back pain and leg pain is satisfactorily improved with newly onset retention of urine followed by overflow incontinence and constipation after a single level lumbar discectomy. No abnormalities were seen on the postoperative imaging studies. This is a retrospective analysis of records and radiographs in a patient who developed acute bowel and bladder dysfunction after surgery for lumbar disc herniation.

Keywords: *Cauda equina syndrome - Isolated bladder dysfunction-lumbar discectomy*

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Introduction:

Postoperative cauda equina syndrome is a well-documented complication in patients undergoing lumbar discectomy.^{1,2,3,4} The syndrome is characterized by bilateral sciatica, lower-extremity weakness, saddle-type hypoesthesia, and bowel and bladder dysfunction.⁵ Apart from tumor, trauma, infection and spinal canal stenosis large series of cauda equina syndrome has reported as a postoperative complication following lumbar spine procedures. In this paper, we describe a case of isolated bowel and bladder dysfunction following lumbar discectomy with complete preservation of neurological function in lower limb.

Illustrative case :

This 48-year-old male had a one year history of low back pain radiate to right lower limb through buttock,

postero-lateral aspect of thigh, calf down to great toe. MR imaging shows herniated lumbar disc at L4/5 level.

Operative finding shows, there was unintended durotomy occurred during fenestration. Then L4 laminectomy was done in order to suturing the dural tear. Immediate post operative period his back pain and radiating pain was satisfactorily improved. Muscle power of both lower limb- MRC grade 5 in all group of muscle and he can walk independently. But he experienced newly onset of retention of urine without any urge followed by dribbling of urine. Moreover he noticed about constipation without any defecation reflex. Digital rectal examination reveals, Anal tone was present but reduced, voluntary finger gripping not adequate, there was impact fecal matter. Post operatively he has treated with steroid, neuroprotective

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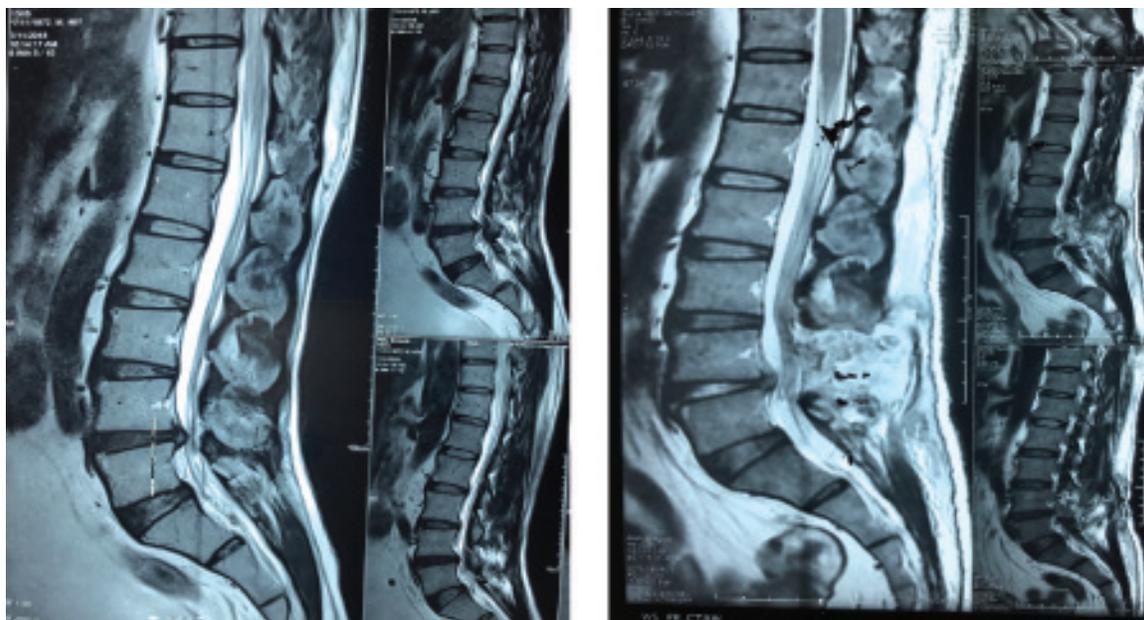


Fig-1: Pre operative sagittal T2WI shows disc dessication and herniation at L4/5 level with obliteration of CSF column and thecal sac indentation (A), post operative state of discectomy at L4/5 level (B).

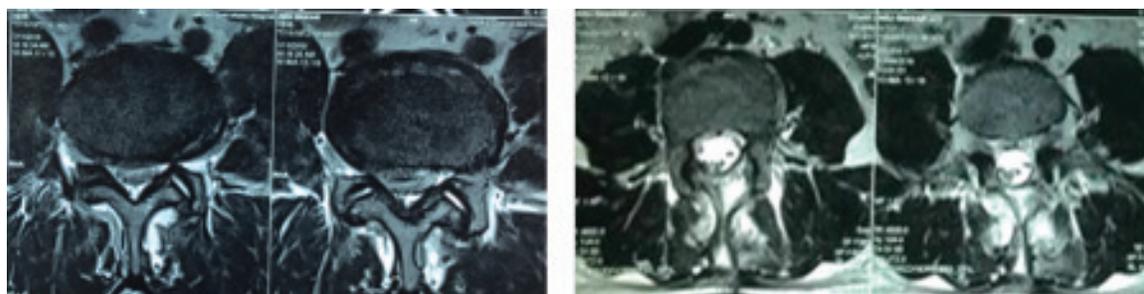


Fig-2: Pre operative axial T2WI shows central and right paracentral disc herniation (A), Post operative state shows, CSF column present & nerve roots within the thecal sac are well distributed (B).

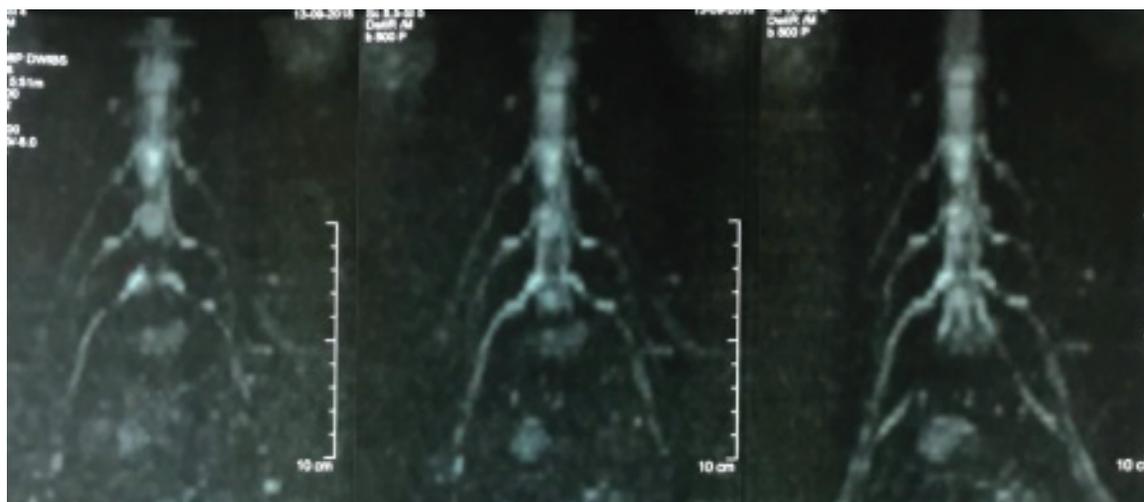


Fig-3: Post operative state of MR Neurography of lumbo-sacral spine shows, there is no compression in lumbar roots.

agents and tab. Bethanecol (Urotone) 25 mg. He also advised to performed pelvic floor exercise and bladder exercise. But his autonomic function not improved after 2 months of conservative medication.

Discussion:

Cauda equina syndrome in patients undergoing lumbar discectomy has been described in the literature, with an incidence ranging from 0.08 to 1.2%.⁶ The origin of this disorder has remained unknown⁷. Several theories have been proposed to explain the pathogenetic mechanism responsible for cauda equina syndrome, such as underlying spinal canal stenosis along with low-lying conus medullaris,⁶ malpositioning of free epidural fat graft, incarceration of the cauda equina through small, initially unrecognized dural defects,⁸ the effect of anesthetic agents, epidural abscess, retained surgical sponge, placement of excessive amounts of hemostatic agents (Surgicel and Gelfoam), epidural hematoma, enterotoxin C, and sudden alteration of the vascular supply of the cauda equina.

The venous congestion theory has gained popularity among spinal surgeons because it is the only one that has some experimental support.⁶ The syndrome has also been described following surgery for spinal stenosis where venous stasis secondary to inadequate decompression was considered to be the cause.⁷ The complication often results in some degree of persisting disability for the patient, most often bladder incontinence.⁹ It would, thus, be of great value if patients at risk of developing this complication could be identified before surgery. The treatment of choice seems to be extended decompression within 48 hours.⁶ However, in this case as there was no compressive feature found in post operative MRI and MR neurography, we were not evident to re-explore.

Conclusion:

Cauda equina syndrome is reported as a sequela in 0.2%–1% of the surgeries for lumbar disc herniation. There is, however, no consensus on the possible pathophysiologic mechanism to the complication or to its management. There is a scope to identify the precise cause of this type of isolated bowel-bladder dysfunction and possible satisfactory treatment by doing neurourological, neuro-radiological and neuro-physiological evaluation.

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