



**AN UNUSUAL ASSOCIATION OF D12 FRACTURE WITH IDEM SOL-A CASE REPORT**

**DR. PALLAV AGRAWAL**

MBBS, MS, MCH (NEUROSURGERY) (std.), DEPARTMENT OF NEUROSURGERY, BANGUR INSTITUTE OF NEUROSCIENCES, I.P.G.M.E.&R., KOLKATA

**DR. ABHISHEK SINGH**

MBBS, MS, MCH (NEUROSURGERY) (std.), DEPARTMENT OF NEUROSURGERY, BANGUR INSTITUTE OF NEUROSCIENCES, I.P.G.M.E.&R., KOLKATA

**DR. MARUTI D. PUJARI**

MBBS, MS, MCH (NEUROSURGERY) (std.), DEPARTMENT OF NEUROSURGERY, BANGUR INSTITUTE OF NEUROSCIENCES, I.P.G.M.E.&R., KOLKATA

**DR. SUBHASIS GHOSH**

MBBS, MS, MCH (NEUROSURGERY), PROFESSOR, DEPARTMENT OF NEUROSURGERY, BANGUR INSTITUTE OF NEUROSCIENCES,

**DR. SAMARENDRANATH GHOSH**

DipBMS, D. ORTH, M.S., DNB, MCH (NEUROSURGERY), PROFESSOR & HEAD OF DEPARTMENT, DEPARTMENT OF NEUROSURGERY, BANGUR INSTITUTE OF NEUROSCIENCES, I.P.G.M.E.&R., KOLKATA

**ABSTRACT**

Traumatic fracture of dorsal vertebra is not uncommon neither uncommon is any lesion at spinal cord. However here we are going to report on a 48 yr old female who presented with two different pathology in the dorsal region in form of D 12 fracture & D10 intradural extramedullary sol simultaneously. This case is presented on account of unusual association of D12 fracture with D10 IDEM which has not been reported in literature to the best of our knowledge.

**KEYWORDS :**

**INTRODUCTION**

Damage to the spinal cord either due to trauma or some other lesion is a catastrophic event as it may render the patient paralysed for life. Most of the traumatic fractures present with acute onset neurodeficits but in our case patient presented with gradually progressive neurodeficit that too started about one month following trauma that led us to think of some other pathology apart from trauma too. Investigations revealed fracture of D12 vertebra & D 10 IDEM. We planned for surgical intervention & bilateral D10, D11, L1 transpedicular screw rod fixation with D10, D11, D12 laminectomy & complete removal of tumor was done. Post operatively patient is showing recovery in motor & sensory function of both lower limb with improvement in bowel/bladder function.

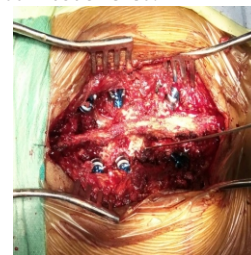
**CASE HISTORY**

A 48 yr old lady with history of fall on staircase 5 months ago presented with low back pain & gradually progressive asymmetric type of weakness in both lower limbs, decreased sensation in both lower limbs since 3 months & bladder incontinence since 1 month. There is no history of head injury or loss of consciousness neither any history of fever, weight loss, chronic cough nor past or family history of Tuberculosis. On examination she was afebrile & other vital parameters were normal. Neurological examination revealed grade 3 power in both lower limbs, sensory involvement below D12. Knee & ankle reflexes were exaggerated & plantar reflex was positive bilaterally. Her chest Xray was normal & plain Xray of spine showed fracture of D12 vertebra while rest of spine was normal. MRI of the spine revealed fracture of D12 vertebra along with an intradural extramedullary lesion at D10 which was hypointense on T1 & isointense on T2.



**Fig 1.** sagittal mri of spine shows hypo to isointense lesion at D10 associated with fracture of D12 vertebra

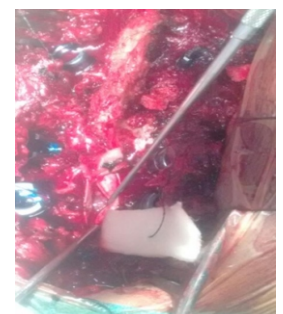
As the tumour was adjacent to the fracture site we planned to deal with both the pathology simultaneously. Patient was operated under general anaesthesia in prone position. Bilateral D10 D11 L1 transpedicular screw rod fixation was done followed by D10 D11 D12 decompressive laminectomy & midline durotomy at the level of D10 D11. A plane was created between tumour & the cord & total excision of the tumour was achieved.



**Fig.2** showing bilateral transpedicular screw rod fixation at the level of D10 D11 L1 for stabilisation



**Fig.3**



**Fig.4**

Midline durotomy was performed at the level of D10 D11 following D10 D11 L1 fixation & laminectomy. Pointer showing an intradural extramedullary SOL at D10 level. Surgery was uneventful & post

operatively she was neurologically same. At one month follow up her stiffness & power in the lower limb improved with also improvement of bladder functions.

#### DISCUSSION:

Thoracolumbar junction is prone to injury because of an inherent susceptibility to the kinetic energy transfer from the stiff thoracic spine to relatively more flexible lumbar spine.<sup>1</sup> Further complicating this problem is estimated rate of 50% of concomitant neurological injury that is associated with these fractures whose subsequent lifelong disability results in a huge societal cost.<sup>2</sup> Condition that weakens the bone increase the fracture risk & most important predisposing factor for thoracic & lumbar fracture is osteoporosis. Pathological fracture are also seen with myeloma, metastasis, TB. These patients may present with sudden paraparesis after trivial trauma. However if a patient presents with gradually progressive weakness, some compressive pathology should be kept in mind which can be infective, inflammatory or neoplastic. Neoplastic lesions can be extradural or intradural. Intradural can be intramedullary or extramedullary of which IDEM are the most common intraspinal primary tumours of which neurinoma & meningiomas being the most frequent. Whatever be the pathology at spinal cord region, pain, weakness, sensory loss & bowel/bladder involvement will be the presenting symptoms in most of the cases. MRI is the investigation of choice for diagnosing lesions at spinal cord. Surgical management is the treatment of choice for IDEM whereas in case of intramedullary tumour asymptomatic lesions may be followed since there is significant risk of neurologic deficit with surgery but for symptomatic lesions surgery should be performed as soon as possible after diagnosis since surgical results correlate with preoperative neurological conditions.<sup>3</sup> As far as management of thoracolumbar fracture is concerned most thoracolumbar fractures are burst fractures. Wood & colleagues in a randomised prospective trial comparing operative & nonoperative treatment of thoracolumbar burst fracture found no clinically significant advantage of surgery.<sup>4,5</sup> Siebenga and associates in a randomised study concluded that surgery results in fewer deformity & superior functional & pain outcome.<sup>6</sup> The goal of surgery in thoracolumbar fracture are neural decompression & restoration of spinal alignment. Instrument fixation & bone fusion are the techniques used to achieve the latter aim.

#### CONCLUSION

Diagnosis of second lesion is usually delayed & if we are not vigilant enough it may lead to catastrophe. As in our case clinical presentation of patient did not match with our clinical diagnosis it prompted us to think towards some other pathology & patient was diagnosed early which led to timely intervention & preservation of functions.

#### REFERENCES

1. Denis F. The three column spine and its significance in the classification of acute thoracolumbar spinal injuries. *Spine*. 1983;8:817–831.
2. Saboe LA, Reid DC, Davis LA, et al. Spine trauma and associated injuries. *J Trauma*. 1991;31:43–48.
3. Post K D, Stein B M: surgical management of spinal cord tumours and arteriovenous malformations. In *Operative neurosurgical techniques*, Schmidek H H and Sweet W H, (eds.). W.B. Saunders, Philadelphia, 3rd ed., 1995, Vol. 2: pp 2027–48.
4. Wood K, Buttermann G, Mehbod A, et al. Operative compared with nonoperative treatment of a thoracolumbar burst fracture without neurological deficit: a prospective, randomized study. *J Bone Joint Surg Am*. 2003;85-A:773–781
5. Wood KB, Li W, Lebl DS, et al. Management of thoracolumbar spine fractures. *Spine J*. 2014;14:145–164.
6. Siebenga J, Leferink VJ, Segers MJ, et al. Treatment of traumatic thoracolumbar spine fractures: a multicenter prospective randomized study of operative versus nonsurgical treatment. *Spine*. 2006;31:2881–2890.