

Burst fracture Th 9-10 treat with Transthoracal Corpectomy

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Abstract. Spinal fracture and dislocation are among the most feared injuries by patients and physicians alike, as the consequences can be devastating, ranging from mild pain and discomfort to severe paralysis and even death. Spinal trauma is commonly found in patients admitted to level-one trauma centers after serious accidents like traffic, falling, and sports accidents. Injuries of the cervical spine account for one third of spinal fractures and half to two thirds of all spinal cord injuries. In the thoracolumbar spine, the most common unstable fracture is the burst fracture. Altogether, burst fractures have been reported to account for about 15% of spinal injuries. Incidence of burst fractures peaked at the thoracolumbar junction and between levels T5 and T8. In 10% of cases, more than one burst fracture was seen, thereof 53% on noncontiguous levels. Main accident mechanisms were falls, traffic, and sports. Neurological deficit was highest in patients with burst fractures of the cervical spine, independent of accident mechanism, and lowest in thoracolumbar junction fractures. Burst fractures occur frequently in high energy traumas and are most commonly associated with falling and traffic accidents. Multiple burst fractures occur in 10% of cases, half thereof on noncontiguous levels. Access to the anterior thoracic spine via the transthoracic approach (via thoracotomy) can be used for decompression and fusion. To perform adequate decompression and stabilization of the thoracic spine, obtaining good exposure is a must. Preservation and protection of the vascular structures in the thoracic cavity is the key to such an exposure. Preoperative workup should include imaging modalities (plain rontgens, MRI/CT scan) to specifically define the area of decompression. If a tumor is being evaluated, CT angiography and embolization are helpful in preoperative planning. Assistance by a thoracic surgeon for exposure is highly recommended.

Keyword: Burst Fracture, Surgery, Transthoracal Corpectomy, Stabilization

Received [5 Nov 2019] | Revised [26 Nov 2019] | Accepted [1 Dec 2019]

1 Introduction

Incidence of burst fractures peaked at the thoracolumbar junction and between levels T5 and T8. In 10% of cases, more than one burst fracture was seen, thereof 53% on noncontiguous levels.¹ Main accident mechanisms were falls, traffic, and sports. Neurological deficit was highest in

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patients with burst fractures of the cervical spine, independent of accident mechanism, and lowest in thoracolumbar junction fractures. Burst fractures occur frequently in high energy traumas and are most commonly associated with falling and traffic accidents.² Multiple Access to the anterior thoracic spine via the transthoracic approach (via thoracotomy) can be used for decompression and fusion. To perform adequate decompression and stabilization of the thoracic spine, obtaining good exposure is a must. Preservation and protection of the vascular structures in the thoracic cavity is the key to such an exposure.³

2 Case Report

A 43 years old man with a weakness of both limbs experience since 1 month ago after the patient fell from motor cycle with a sitting position. Motor strength of upper limbs was 5 and lower limbs was 3 with hypesthesia from the Th9 level below. MRI shows burst fracture Th9 and Th10 with canalis stenosis. The patient has performed Transthoracal Corpectomy and Stabilization.



Figure 1. X-Ray Vertebrae Anterior Posterior / Lateral, destruction corpus vertebrae Th9-10.

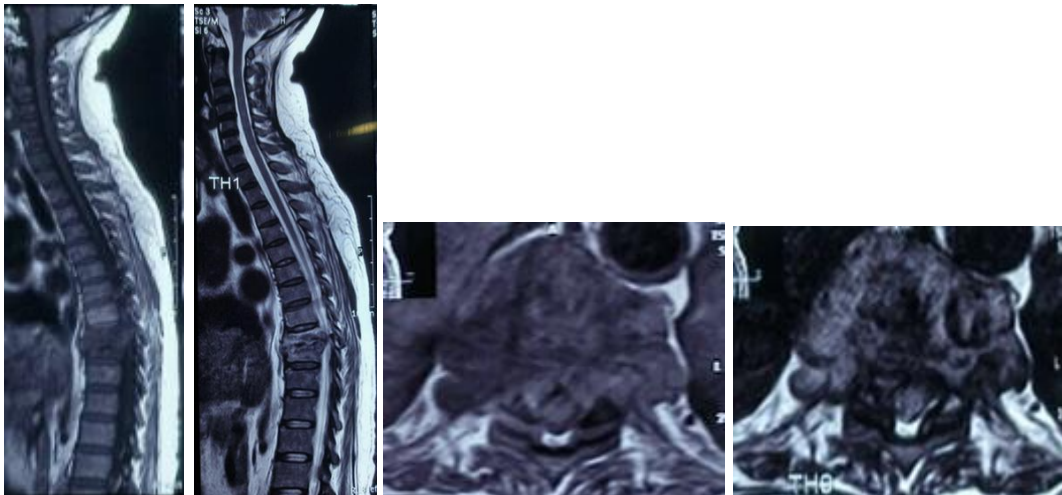


Figure 2. MRI Vertebrae T1-T2 sagital and axial, Burst Fracture Th9-10 with canal stenosis.

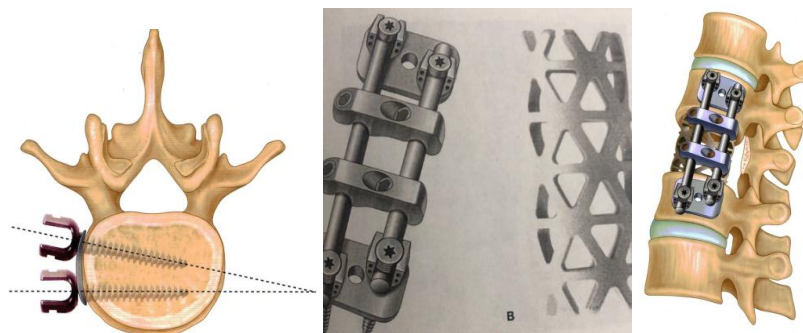


Figure 3. Illustration trajectory insertion pedicle screw, Sample cage and position fixation pedicle screw with rod.

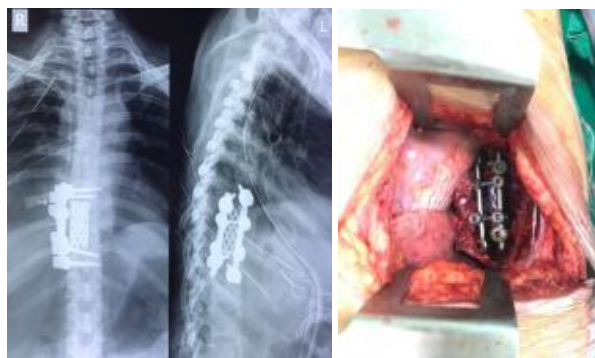


Figure 3. X ray post operative, cage, pedicle screw and vertebrae in accordance with normal anatomic.

3 Result

Post operative, the patient show some improvement for motoric strengths and the hypestesia deficits. On control X-Ray appears, cage, pedicle screw and vertebrae in accordance with normal anatomic.

4 Conclusion

Has been case reported of burst fracture Th 9-10 that is treated by a neurosurgery procedure of “Transthoracal Corpectomy and Stabilization” which its result could be seen by the control thoracal rontgen afterward. The treatment gave good result without any complication.

5 Conflict of Interest

The authors declare no conflict of interest regarding this manuscript.

6 Funding

The authors declare no financial interest in any of the materials discussed in this work.

REFERENCES

- [1] Frank V, Bensch, Mika P. The incidence and distribution of burst fractures. AmSoc Emergency Radiol 2005.
- [2] Alexande R, Tood J, Spine Surgery “Tricks of the Trade”. Thieme 2016:108-106.
- [3] Jandial R, McCormick Paul C, Black Peter M, ”Core Techniques in Operative Neurosurgery”. Elsevier 2011: 449-455.