

## Early Surgical Treatment in Bilateral Cervical Locked Facets: Case Report

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### Abstract

Bilateral cervical locked facets are a serious condition that may result in complete spinal cord injury. Though the treatment is not standardized advances in radiology and surgical techniques led the surgeons to operate on the patients earlier. We report a case with bilateral cervical locked facet. He was treated with early surgery and had the chance of early rehabilitation.

**Keywords:** Bilateral cervical locked facets; Early surgery

### Introduction

Bilateral locked facets occur by a hyperflexion mechanism and commonly associated with neurological involvement [1]. This type of spinal injury is the most severe form and seen in about % 5 of the cases [2]. Bilateral facet dislocation occurs when a vertebra inferior facet dislocates anteriorly over the vertebra superior facet due to hyperflexion locking in the intervertebral foramina, creating a severely unstable fracture [2]. Fracture of facets, lamina and spinous processes may be coexistent. Early decompression has been frequently proposed [2] Treatment is not standardized. We present a diving accident with bilateral locked cervical facets.

### Case Report

A 16-year-old male patient was transferred to the emergency department from a peripheral hospital after diving into a pool. Methyl-prednisolone treatment was started. On arrival Glasgow coma scale was 15. His motor and sensory level of C 6 was determined. Neurological deficit was complete with urinary retention and he had no rectal tone (ASIA A). Cervical spine computed tomography showed C 5 fracture dislocation with complete bilateral locked facets (naked facet sign) [3]. Cervical vertebral MRI showed nearly complete cord compression the patient was transferred to operation room. He was intubated under anesthesia and after application of Gardner-Wells tongs, closed reduction was unsuccessful. Therefore following open reduction with decompression from posterior route, screws were inserted into the articular masses of the spinal segments using Magerly technique [4], and fixation was completed with rods. After closure of the wound the patient was positioned supine. After cervical 5 corpectomy and discectomy, fibula graft was fixed with anterior cervical plate and screws. Intraoperative

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radiology and postoperative computed tomography showed the cervical spine alignment and decompression of the spinal canal was adequate. Postoperative neurological examination didn't show any any change in motor or sensory function. Two days later due to respiratory complications he was intubated and needed respiratory support. Then he was transferred to a specialized hospital about respiratory disease. After the termination of therapy he was hospitalized in a specialized rehabilitation centre in another city.

### Discussion and Conclusion

Bilateral cervical locked facets occur by severe flexion injuries. [1,4,5] Disruption of ligaments of apophyseal joints, ligamentum flavum, longitudinal and interspinous ligaments also occurs. As seen in our case, diving accidents seen in approximately 15% of the cases [6] with complete spinal cord injury in 65-87%. Computed tomography shows 'naked facet sign' as the appropriate articulating mate is either absent or on the wrong side of the facet (Greenberg MS., 2010). Preoperative MRI is generally recommended since 1990s [2] and enabled us to evaluate the status of the spinal cord and potential offending soft tissue or bony structure placing the spinal cord at risk [7]. Decompression of the neural structures, reduction of the malalignment and restoration of spinal stability was our goal in this case as accepted in the literature [1]. Most of the authors agree with early closed reduction, realignment-stabilization, and high dose methylprednisolone treatment. Similarly, we applied the same treatment but as it was not successful, we continued

our treatment with early open reduction- stabilization. Although timing of surgery differs according to different authors and no prospective study was made for this issue, early decompression less than 24-72 hr. has been frequently proposed [1]. Posterior wiring has been the standard cervical stabilization technique since the late 1800s but in cases like ours, involving facet or lamina fracture, this technique is not accommodated. Therefore we chose posterior articular screwing technique followed by anterior corpectomy and fixation. Since late 1980s Roy-Camille R et al reported clinical series of posterior cervical plating with

good results achieved up to 85 %. Although the surgical approach is not standardized, combined anterior and posterior fixation is superior in terms of stability [1] as in our case.

## Conclusion

Early decompression and fixation is important for patients with bilateral cervical locked facets in order to give chance for early rehabilitation. Advances in radiology and surgical techniques during the last 25 years encouraged the surgeons in easier decision making and operating on such patients earlier.

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