Cervical facet dislocation

- Traumatic Jumped Cervical Facets in Adult Patients: A Case Series
- Reduction of traumatic unilateral locked facet of the subaxial cervical spine: what predicts successful closed skeletal traction, and is anterior or posterior surgery superior after unsuccessful closed reduction?
- Surgical Management of Facet Fracture Dislocations of the Subaxial Spine: A Retrospective Cohort Study
- MRI-Based Surgical Planning for Irreducible Subaxial Cervical Fracture-Dislocation With Bilateral Locked Facet Joints: A Retrospective Cohort Study
- Clinical Outcome of lateral mass screws for traumatic sub-axial facet dislocation
- Clinical and radiographic outcomes of posterior cervical arthrodesis and stabilization via lateral mass screwing and rod fixation: a retrospective study at a tertiary hospital in Addis Ababa, Ethiopia
- Delayed Post-Operative C5 Palsy After Reduction of Unilateral Cervical Facet Dislocation: A Case Report
- Pediatric Cervical Spine Injuries: Lessons From a Rare Case of C5/C6 Facet Dislocation in an Adolescent With a Systematic Literature Review

Cervical subluxation of more than 50% or perched facet joint cervical luxation. These injuries are definitely a sign of severe disruption of the posterior ligamentous complex and therefore an indicator of at least a B-type or even C-type injury.

In the presence of vertebrobasilar symptoms, a CT- or MR-angiogram is recommended.

Possible nerve root compression by the facet fragment may therefore require an additional posterior approach in case of an anterior stabilization.

Unilateral or bilateral locked facets require a differentiated concept in order to ensure a safe reduction without neurological compromise.

In general, the closed reduction should be performed under fluoroscopy by an experienced spine surgeon on operating room (OR) standby or directly in the OR. To ease closed reduction patient relaxation is recommended. Because there is an inverse correlation between time since luxation and reduction success, the closed reduction should be performed as early as safely possible.

In neurologically intact patients, it is recommended to perform the closed reduction in the anesthetized patient in the OR directly prior to surgery. In case a closed reduction is not possible, immediate anterior decompression is performed, followed by an open reduction attempt with a distractor (eg, CASPAR Cervical Distractor). Usually, the reduction should be achieved with this algorithm in more than 95% of locked facets.13,14 In the rare case that an anterior open reduction may not be achieved, the reduction has to be performed by an open posterior approach following the mandatory complete anterior decompression.

In case the surgeon prefers primary open posterior reduction, a preoperative MRI is mandatory to exclude herniated disc material, which may constrain the spinal canal following reduction without

anterior decompression (see section “Diagnostics”).

Patients with neurological compromise should undergo reduction as soon as possible; however, the benefits and risks of immediate reduction should be thoroughly assessed [1)]

A Separation fracture

B Comminuted fracture

C Split fracture

D Traumatic spondylolisis

Cervical facet fractures more frequently involves superior facet may be unilateral or bilateral.

Epidemiology

location ~75% of all facet dislocations occur within the subaxial spine (C3 to C7)

17% of all injuries are fractures of C7 or dislocation at the C7-T1 junction this reinforces the need to obtain radiographic visualization of the cervicothoracic junction Pathophysiology mechanism flexion and distraction forces +/- an element of rotation

Cervical facet dislocations are among the most common traumatic spinal injuries.

Etiology

The injury usually results from forced flexion of the cervical spine. However, where there is a degree of rotation, the facet dislocation may only occur to one facet joint:

bilateral facet dislocation: unstable

unilateral facet dislocation: stable

Facet dislocation can occur to varying degrees:

subluxed facets

perched facets

Cervical locked facets.

Represent spectrum of osteoligamentous pathology that includes unilateral facet dislocation most frequently missed cervical spine injury on plain xrays leads to ~25% subluxation on xray associated with monoradiculopathy that improves with traction

bilateral facet dislocation leads to ~50% subluxation on xray often associated with significant spinal cord injury facet fractures more frequently involves superior facet may be unilateral or bilateral.

Treatment

see Cervical facet dislocation treatment.

Case series

A database search identified 96 patients (mean age = 37.9, range = 14-74 yr, 68 (70%) male. The most common affected levels were C4-C5 (30), C5-C6 (29), and C6-C7 (30). Bilateral dislocation occurred in 51 patients (53%). Seventy-eight (81%) patients had neurological deficits, 31 (32%) being complete (Abbreviated Injury Score A) spinal cord injuries. Preoperative closed reduction was attempted in 60 (63%) patients, with 33 (55%) achieving satisfactory alignment. After anterior cervical discectomy, reduction, allograft placement, and instrumentation, a total of 92 (96%) patients had achieved satisfactory realignment. Median time to surgery was 13.27 h. Eight (8%) patients required posterior fixation due to intraoperative determination of incomplete realignment (4; 4%) and development of early progressive deformity (4; 4%). Mean follow-up was 4.5 mo (range 0.5-24 mo) with 33 (34%) patients lost to follow-up.

Anterior approaches are viable for reduction and stabilization of cervical facet dislocations. Further prospective studies are required to evaluate clinical and long-term success [2].

1)
Schleicher P, Kobbe P, Kandziora F, Scholz M, Badke A, Brakopp F, Ekkerlein H, Gercek E, Hartensuer R, Hartung P, Jarvers JS, Matschke S, Morrison R, Müller CW, Pishnamaz M, Reinhold M, Schmeiser G, Schnake KJ, Stein G, Ullrich B, Weiss T, Zimmermann V. Treatment of Injuries to the Subaxial Cervical Spine: Recommendations of the Spine Section of the German Society for Orthopaedics and Trauma (DGOU). Global Spine J. 2018 Sep;8(2 Suppl):25S-33S. doi: 10.1177/2192568217745062. Epub 2018 Sep 7. PMID: 30210958; PMCID: PMC6130109.
2)
Theodotou CB, Ghobrial GM, Middleton AL, Wang MY, Levi AD. Anterior Reduction and Fusion of Cervical Facet Dislocations. Neurosurgery. 2018 Mar 14. doi: 10.1093/neuros/nyy032. [Epub ahead of print] PubMed PMID: 29547951.