Cervical unilateral locked facet

Latest articles

- Management of Subaxial Cervical Spine Injury with Unilateral Locked Facet: An Institutional Experience
- 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?
- 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
- Skull traction reattachment combined with ACDF in the treatment of C2-C3 transverse dislocation with unilateral cervical facet locked: A case report
- Delayed Unilateral Facet Interlocking After a Stable Superior Articular Process Fracture of the Cervical Spine: A Case Report
- Evaluation for Vertebral Artery Injury with Cervical Dislocated Fracture and Optimal Treatment before Reduction
- Socio-demographic factors, clinico-radiological profile of patients with traumatic cervical spine injury in South India, and its association with short-term clinical outcome
- Subaxial cervical articular process subluxation and dislocation: Cervical locked facet injuries in dogs

---

Unilateral cervical locked facet, is a complex cervical spine injury and has been described as a locket facet, a perched facet, a jumped facet, and a rotational facet injury.

Classification

- Classification of unilateral cervical locked facet with or without lateral mass-facet fractures and a retrospective observational study of 55 cases
- Treatment of locked lower cervical fracture and dislocation with anterior cervical fusion and internal fixation combined with the release of interlocking facet through the Luschka joint and anterior lamina space
- Anterior Retropharyngeal Reduction and Sequential Posterior Fusion for Atlantoaxial Rotatory Fixation With Locked C1-C2 Lateral Facet
- A new classification for cervical vertebral injuries: influence of CT
- Completely dislocated hangman's fracture with a locked C2-3 facet. Case report
- Vertical facet splitting: a special variant of rotary dislocations of the cervical spine

---

Tang et al. describe a morphology-based unilateral cervical facet interlocking classification in an attempt to clarify the injury mechanism, instability, neurological deficits, and radiological features, and determine optimum management strategies for these injuries. A total of 55 patients with unilateral cervical locked facet (UCLF) involving C3 to C7 were identified between January 1, 2012,

and December 1, 2019. The injuries were classified into three types, and they were further divided into six subtypes using three-dimensional computed tomography. The injury mechanism, clinical features, neurological deficits, and imaging characteristics were analyzed, and the appropriate treatment strategies for UCLF were discussed. UCLFs were divided into the following six subtypes: UCLF without lateral mass-facet fracture (type I) in nine cases, with superior articular process fracture (type II A) in 22, with inferior articular process fracture (type II B) in seven, both superior and inferior articular process fractures (type II C) in four, with lateral mass splitting fracture (type III A) in three, and with lateral mass comminution fractures (type III B) in ten. A total of 22 (40.0%) of the 55 patients presented with radiculopathy, and 23 patients (41.8%) had spinal cord injuries. The subtype analyses showed high rates of radiculopathy in types II A (68.2%) and II C (75.0%), as well as significant spinal cord injury in types I (77.8%) and III (61.5%). Destruction of the facet capsule was observed in all patients, but the injury of the disc, ligamentous complex and vertebra had a significant difference among the types or subtypes. The instability parameters of the axial rotation angle, segmental kyphosis, and sagittal displacement showed significant differences in various types of UCLF. Closed reduction by preoperative and intraoperative general anesthesia traction was achieved in 27 patients (49.1%), and the success rate of closed reduction in type I (22.2%) was significantly lower than that in type II (51.5%) and type III (61.5%). A total of 35 of 55 patients underwent a single anterior fixation and fusion, 10 patients were treated with posterior pedicle and (or) lateral mass fixation, and combined surgery was performed in ten patients. Ten patients (18.2%) with poor outcomes were observed after the first surgery. Among them, 3 patients treated with a single anterior surgery had persistent or aggravated radiculopathy and posterior approach surgery with ipsilateral facet resection, foramen enlargement, and pedicle and (or) lateral mass screw fixation was performed immediately, 5 patients treated with a short-segment posterior surgery showed mild late kyphosis deformity, and 2 patients with vertebral malalignment were encountered after anterior single-level fusion during the follow-up. This retrospective study indicated that UCLF is a rotationally unstable cervical spine injury. The classification proposed in this study will contribute to understanding the injury mechanism, radiological characteristics, and neurological deficits in various types of UCLF, which will help the surgeons to evaluate the preoperative closed reduction and guide the selection of surgical approach and fusion segment [1)].

Mechanism

Cervical hyperflexion + cervical rotation.

Unilateral cervical facet injury is a important subgroup of cervical spine injury, and motor vehicle accidents (MVAs) have been reported as the leading cause.

It may extend rostrally or caudally into either one of the adjacent facets, ventrally into the foramen transversarium, tranverse process, or pedicle or dorsally into the lamina. The lower cervical spine, specifically C5-6 and C6-7, has been reported as the most frequently injured portion.

Clinical

Although a relatively uncommon type of injury, facet fracture-dislocations are associated with a high incidence of severe neurological morbidity and represent difficult management problems.

25 % of patients are neurologically intact, 37% have cervical nerve root deficit, 22 % have incomplete

spinal cord injury and 15 % have quadriplegia [2].

Diagnosis

see Cervical unilateral locked facet diagnosis.

Treatment

Cervical unilateral locked facet treatment

Case series

Cervical unilateral locked facet case series

Case report from the HGUA

59-year-old woman, after waking up, presented dizziness, and nausea followed by a second-long syncope with fall cervical spine injury on the kitchen bench.

Immediate and complete recovery. She had paresthesias in his arms that subsided.

Episodes of palpitations, during his admission in sinus rhythm with a tendency to bradycardia.

CT cervical spine

Findings are compatible with C4-C5 bilateral cervical facet dislocation with possible teardrop fracture of the anterior and upper edge of C5.

Cervical MRI

Alteration of the alignment with anterolisthesis of vertebrae C1 to C4 on the alignment axis of C5-6 due to bilateral facet dislocation between C4 and C5 with the cervical unilateral locked facet on the

left side.

Increased signal is observed due to edema in the interspinous area with increased space of the c4/5 spinous processes in relation to interspinous ligament rupture while a break in the continuity of the ligamentum flavum is noted at that level and possibly also at C5/ 6 due to injury to the posterior ligamentous complex with resulting instability that causes pseudoherniation of the C4/5 disc and is responsible for vertebral displacement that causes stenosis of the central diameter of the spinal canal. The spinal cord shows normal thickness and signals intensity. It is associated with the existence of a small soft tissue hematoma in front of the C5 and C6 bodies. The vertebral spaces show a reduced height and the discs show a loss of their signal intensity indicating dehydration and degenerative changes of the same. In C5/6 and C6/7 spaces, there are degenerative changes with marginal osteophytes that cause central stenosis of the bilateral spinal and foraminal canal. Subchondral bone edema in the anterior margin of the subchondral bone adjacent to the upper endplates of T1, T2, and especially T3 in relation to a flexion-extension lesion mechanism.

In conclusion, anterolisthesis due to left C4/5 facet block, injury to the posterior ligamentous complex, and severe spinal canal stenosis without injury to the spinal cord. Subchondral bone edema in bodies T1 to T3.

1)
Tang C, Fan YH, Liao YH, Tang Q, Ma F, Wang Q, Zhong J. Classification of unilateral cervical locked facet with or without lateral mass-facet fractures and a retrospective observational study of 55 cases. Sci Rep. 2021 Aug 16;11(1):16615. doi: 10.1038/s41598-021-96090-4. PMID: 34400738; PMCID: PMC8367956.
2)
Andreshak JL, Dekutoski MB. Management of unilateral facet dislocations: a review of the literature. Orthopedics. 1997 Oct;20(10):917-26. Review. PubMed PMID: 9362076.