

Cervical unilateral locked facet diagnosis

- Management of Subaxial Cervical Spine Injury with Unilateral Locked Facet: An Institutional Experience
- 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
- Subaxial cervical articular process subluxation and dislocation: Cervical locked facet injuries in dogs
- 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
- Multicentre comparative study of Z-shape elevating-pulling reduction and skull traction reduction for treatment of lower cervical locked facets
- Management of irreducible unilateral facet joint dislocations in subaxial cervical spine: two case reports and a review of the literature
- In Vitro Biomechanical Study of Epidural Pressure during the Z-shape Elevating-Pulling Reduction Technique for Cervical Unilateral Locked Facets

Cervical Spine Radiography for unilateral locked facet diagnosis

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- Treatment of cervical subaxial injury in the very young child

C spine x-rays

Rotatory subluxation.

Anterolisthesis of less than 25%

AP [spinous processes](#) above the subluxation rotate to the same side as the locked facet.

Bow tie sign: rotated facets on lateral view

Rotation and misalignment of spinous processes on AP view which point to the involved side

Widening of the interspinous space at affected level

Computed tomography

A [naked facet](#) or [inverted hamburger sign](#) may be present

also helpful to detect other fractures and their extent

Three-dimensional computed tomography for cervical unilateral locked facet diagnosis

- [Classification of unilateral cervical locked facet with or without lateral mass-facet fractures and a retrospective observational study of 55 cases](#)
- [Analysis and discussion on the facet of the spinal column, spiral CT lock multiplanar reconstruction and 3D reconstruction](#)
- [Anterior Retropharyngeal Reduction and Sequential Posterior Fusion for Atlantoaxial Rotatory Fixation With Locked C1-C2 Lateral Facet](#)
- [Study on the rotary angle, plain radiographs and CT appearance in unilateral locked facet of cervical spine](#)
- [Nonsurgical treatment of a C6-7 unilateral locked facet joint in an infant. Case report](#)

X-ray and CT both can independently diagnose the unilateral locked facet of the cervical spine. CT and three-dimensional reconstruction are better than X-ray for diagnosing it ¹⁾

MPR and 3D images were more clear and more intuitive in vertebral facet joint locking compared to axial CT scan images. Spiral CT MPR and 3D reconstruction contributed to the diagnosis of vertebral facet joint locking and the reduction of misdiagnoses rates ²⁾.

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 ³⁾.

MRI

MRI is used to detect other soft tissue injuries like [cervical disc herniation](#) and [spinal cord edema/contusion](#).

¹⁾

He HC, Zhao BL, Zhu QS, Ma HS, Lai Y, Liu JX, Lü ZW. [Study on the rotary angle, plain radiographs and CT appearance in unilateral locked facet of cervical spine]. Zhongguo Gu Shang. 2010 Dec;23(12):925-8. Chinese. PMID: 21265201.

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Zheng Z, Wang S, Si D. [Analysis and discussion on the facet of the spinal column, spiral CT lock multiplanar reconstruction and 3D reconstruction]. Zhong Nan Da Xue Xue Bao Yi Xue Ban. 2015 Oct;40(10):1143-7. Chinese. doi: 10.11817/j.issn.1672-7347.2015.10.015. PMID: 26541851.

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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.

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