# Cervical lateral mass screw fixation

- Redefining the Cervical Pedicle Entry Point (CPEP) in the Insertion of Cervical Pedicle Screw Using O-Arm Navigation: A Prospective Radiological Study From India
- Effect of Screw Thread Pitch, Purchase Depth, and Trajectory on Cervical Lateral Mass Fixation Strength
- Subaxial Cervical Lateral Mass Screw and Rod Fixation: Surgical Experience and Outcome Analysis
- Lower cervical C6/C7 andersson lesion with upper cervical C1/C2 fracture in ankylosing spondylitis: a case report and literature review
- Surgical Outcomes of Single-Stage Correction Using Cervical Pedicle Screw Fixation Rather Than Lateral Mass Fixation in NF1-Associated Pediatric Cervical Kyphosis: A Retrospective Study with a Minimum 2-Year Follow-Up
- Accuracy and safety assessment of subaxial cervical pedicle screw instrumentation: a systematic review
- 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

http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4068847/

In 1994, Abumi et al. were the first to introduce screws into the pedicles in the lower cervical spine in order to manage fractures and dislocations, followed by Jeanneret et al. . Later, Abumi and Kaneda reported a large number of patients who underwent transpedicular fixations for the treatment of unstable cervical spine caused by trauma, tumors, infections, degenerative conditions and failed anterior fusions, with a higher fusion rate and no complications except for one patient who developed transient postoperative radiculopathy.

Lateral mass screw fixation with plates or rods has become the standard method of posterior cervical spine fixation and stabilization for a variety of surgical indications. Despite ubiquitous usage, the safety and efficacy of this technique have not yet been established sufficiently to permit “on-label” U.S. Food and Drug Administration approval for lateral mass screw fixation systems. The purpose of this study was to describe the safety profile and effectiveness of such systems when used in stabilizing the posterior cervical spine.

http://www.cureus.com/articles/2443-vertebral-body-reconstruction-using-expandable-titanium-cages-after-anterior-decompression-for-cervical-spondylotic-myelopathy-a-review#.U7fTwxYmpow

## Video

http://vimeo.com/26186230

Twenty articles (two retrospective comparative studies and eighteen case series) satisfied the inclusion and exclusion criteria and were included. Both of the comparative studies involved comparison of lateral mass screw fixation with wiring and indicated that the risk of complications was comparable between treatments (range, 0% to 7.1% compared with 0% to 6.3%, respectively). In one

study, the fusion rate reported in the screw fixation group (100%) was similar to that in the wiring group (97%).

## Complications

Risks following lateral mass screw fixation were low across the eighteen case series. Nerve root injury attributed to screw placement occurred in 1.0% (95% confidence interval, 0.3% to 1.6%) of patients. No cases of vertebral artery injury were reported. Instrumentation complications such as screw or rod pullout, screw or plate breakage, and screw loosening occurred in <1% of the screws inserted. Fusion was achieved in 97.0% of patients across nine case series.

The risks of complications were low and the fusion rate was high when lateral mass screw fixation was used in patients undergoing posterior cervical subaxial fusion. Nerve root injury attributed to screw placement occurred in only 1% of 1041 patients. No cases of vertebral artery injury were identified in 758 patients. Screw or rod pullout, screw or plate breakage, and screw loosening occurred in <1% of the screws inserted [1)].

## Instruments

http://www.aesculapimplantsystems.com/assets/base/doc/DOC859-S4CervicalSystemBrochure.pdf

## References

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