

Anterior odontoid screw fixation indications

[Anterior odontoid screw fixation](#) (AOSF) and posterior [occipitocervical fusion](#) are both well-accepted techniques for surgical treatment but with unique indications and contraindications as well as varied reported outcomes.

Joaquim et al. reviewed the [literature](#) about specific patients and fracture characteristics that may guide treatment toward one technique over the other. AOSF can preserve atlantoaxial motion, but requires a reduced odontoid, an intact [transverse ligament](#), and a favorable fracture line to achieve adequate fracture compression. Additionally, older patients may have a higher rate of [pseudarthrosis](#) using this technique, as well as postoperative [dysphagia](#). posterior [occipitocervical fusion](#) has a higher rate of [fusion](#) and is indicated in patients with severe atlantoaxial misalignment and with poor bone quality. posterior [occipitocervical fusion](#) allows direct open reduction of displaced fragments and can reduce any [atlantoaxial instability](#). It is also used as a salvage procedure after failed AOSF. However, this technique results in loss of atlantoaxial motion, requires [prone positioning](#), and demands a longer operative duration than AOSF, factors that can be a challenge in patients with severe medical conditions. Although both anterior and posterior approaches are acceptable, many clinical and radiological factors should be taken into account when choosing the best surgical approach. Surgeons must be prepared to perform both procedures to adequately treat these injuries ¹⁾

Full-Endoscopic [Anterior Odontoid Screw Fixation](#) is a feasible and effective option for [Odontoid fracture type II treatment](#). The [procedure](#) is less invasive than other techniques and provides clear direct visualization of the involved structures ²⁾.

Direct anterior screw fixation is an effective and safe method for treating recent [odontoid fractures](#) (<6 months postinjury). It confers immediate stability, preserves C1-2 rotatory motion, and achieves a fusion rate that compares favorably with alternative treatment methods. In contradistinction, in patients with remote fractures (> or = 18 months postinjury), a significantly lower rate of fusion is found when using this technique, and these patients are believed to be poor candidates for this procedure ³⁾.

Although anterior screw fixation is the ideal choice for type II odontoid fractures with anterior superior to posterior inferior fracture line, it may not be the best choice for comminuted or fracture end hardened type II odontoid fractures ⁴⁾.

¹⁾
Joaquim AF, Patel AA. Surgical [treatment](#) of Type II [odontoid fractures](#): [anterior odontoid screw fixation](#) or posterior cervical [instrumented fusion](#)? Neurosurg Focus. 2015 Apr;38(4):E11. doi: 10.3171/2015.1.FOCUS14781. PMID: 25828487.

²⁾
Kotheeranurak V, Pholprajug P, Jitpakdee K, Pruttikul P, Chitragran R, Singhatanadgige W, Limthongkul W, Yingsakmongkol W, Kim JS. Full-Endoscopic [Anterior Odontoid Screw Fixation](#): A Novel [Surgical Technique](#). Orthop Surg. 2022 Apr 20. doi: 10.1111/os.13271. Epub ahead of print. PMID: 35445547.

³⁾

Apfelbaum RI, Lonser RR, Veres R, Casey A. Direct [anterior screw fixation](#) for recent and remote [odontoid fractures](#). J Neurosurg. 2000 Oct;93(2 Suppl):227-36. PubMed PMID: 11012053.

4)

Yang S, Liu YJ, Jiang WM. Experience in surgery treatment of type II odontoid fractures: A report of two cases and review of the literature. Chin J Traumatol. 2019 Nov 1. pii: S1008-1275(19)30333-5. doi: 10.1016/j.cjtee.2019.10.003. [Epub ahead of print] PubMed PMID: 31757743.

From:

<https://neurosurgerywiki.com/wiki/> - **Neurosurgery Wiki**

Permanent link:

https://neurosurgerywiki.com/wiki/doku.php?id=anterior_odontoid_screw_fixation_indications

Last update: **2024/06/07 02:58**

