## Vertebral augmentation in osteoporotic spine fractures

see Vertebroplasty for osteoporotic vertebral fracture.

## **WFNS Spine Committee recommendations**

Computerized literature was searched from 2010 to 2021 using keywords "vertebral augmentation," "osteoporotic fracture," "technique," "surgery," "complication," and "outcome." PubMed yielded 92 articles whereas Google Scholar resulted in 120 articles. 29 articles were studied in detail. The studies comprised seventeen RCTs, two prospective non-randomized studies, three retrospective studies, and seven systematic reviews. The statements were produced to reach a consensus in two separate meetings of the WFNS Spine Committee. The statements were voted on and reached a positive or negative consensus using the Delphi method.

Evidence synthesis: Drafted statements on "Vertebral Augmentation in osteoporotic Spine Fractures" were voted upon by expert panelists in Virtual WFNS Spine Committee Consensus Meetings conducted on January 11, 2021, and February 13, 2021. Statements reaching positive consensus provided the basis for the WFNS guidelines regarding vertebral augmentation in osteoporotic spine fractures.

WFNS Spine Committee recommendations on vertebral augmentation in osteoporotic spine fractures are summarized in this article. Vertebral augmentation is superior to conservative treatment for vertebral osteoporotic fractures but has conflicting results in comparison with placebo. Both vertebroplasty and kyphoplasty are equally effective. Most of the studies regarding the efficacy of vertebral augmentation procedures to reduce pain have been largely inconclusive. It is suggested that further high-quality, better-designed randomized controlled studies are required to establish the role of vertebral augmentation in spine osteoporotic compression fractures <sup>1)</sup>

## **Reviews**

A systematic literature search was conducted using the PubMed and Cochrane electronic databases for systematic reviews, review articles, meta-analyses, and randomized clinical trials prior to May 2017. The keywords were "vertebroplasty," "kyphoplasty," and "vertebral augmentation."

Results: Thirty-three papers (7 systematic reviews, 6 cohort studies, 15 randomized clinical trials, and 5 international guidelines) were included in this narrative review.

Conclusion: Vertebral augmentation is a safe procedure, with low rates of serious complications and no increase in subsequent post-treatment fracture risk  $^{2)}$ 

Several studies demonstrated the positive effects of vertebral augmentation on maintenance of postoperative pain reduction at long-term follow-up. There is more evidence on the relationship

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between vertebral augmentation and adjacent segment vertebral compression fractures. In addition, the literature verifies that good outcomes can be expected in patients with spinal metastases and multiple myeloma.

Summary: The incidence of symptomatic vertebral compression fractures is on the rise. For those patients with severe pain or progressive collapse due to osteoporotic or osteolytic vertebral compression fractures, early vertebral augmentation affords excellent early pain relief, early return to function, and restores and maintains sagittal alignment <sup>3)</sup>.

1)

Sharif S, Ali MY, Costa F, Zileli M, Parthiban J. Vertebral augmentation in osteoporotic spine fractures: WFNS Spine Committee recommendations. J Neurosurg Sci. 2022 Aug;66(4):311-326. doi: 10.23736/S0390-5616.22.05642-9. PMID: 36153881.

Sharif S, Ali MY, Costa F, Zileli M, Parthiban J. Vertebral augmentation in osteoporotic spine fractures: WFNS Spine Committee recommendations. J Neurosurg Sci. 2022 Aug;66(4):311-326. doi: 10.23736/S0390-5616.22.05642-9. PMID: 36153881.

Siemionow K, Lieberman IH. Vertebral augmentation in osteoporotic and osteolytic fractures. Curr Opin Support Palliat Care. 2009 Sep;3(3):219-25. doi: 10.1097/SPC.0b013e32832ea6e6. PMID: 19553816.

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