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REVIEW

Osteoporotic thoracolumbar vertebral compression fractures: Controversial issues and current solutions

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Osteoporotic fractures represent a significant public health burden; these fractures, particularly in the hip, vertebrae, distal radius, and proximal humerus, are associated with high mortality rates. Hip fractures alone are leading to a 20% mortality rate within the first year.[1] Osteoporosis, a metabolic bone disease, has attracted widespread attention globally in recent years. It often stems from osteopenia and involves changes in bone microstructure, making bones prone to fracture.[1] Osteoporotic vertebral compression fractures (OVCFs) commonly occur in the lower thoracic and lumbar vertebrae.[1] As a prevalent complication of osteoporosis, the incidence of OVCFs is increasing annually in elderly people.

The rising prevalence of Kümmell's disease, a delayed type of osteoporotic vertebral fracture, is becoming a significant challenge in aging population. It is characterized by vertebral osteonecrosis and subsequent collapse.[2] One of the promising approaches is the use of hollow pedicle screw-anchored bone cement combined with posterior long-segment fixation (LSF) aiming to provide the dual benefits of stabilizing the vertebral body through the anchoring effect of bone cement and reducing surgical trauma by avoiding extensive decompression and bone grafting.[3]

In a meta-analysis aiming to compare the efficacy and safety of unilateral versus bilateral percutaneous kyphoplasty (PKP) in treating OVCFs unilateral PKP appears equally effective as bilateral PKP for treating OVCFs, but with certain advantages in terms of procedure time, cement use, and pain reduction.[4]

In conclusion, we should be more concerned about anemia in patients with thoracolumbar OVCFs after unilateral extrapedicular approach compared to the unilateral transpedicular approach.[5]

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REFERENCES

1. Gong L, Bai Z. Association of genetically predicted blood metabolites with osteopenia in individuals over 60 years of age: A Mendelian randomization study. Jt Dis Relat Surg 2025;36:229-39. doi: 10.52312/jdrs.2025.1991.
2. Kan D, Wang J, Qiao G, Chen Y, Han D. Efficacy and safety of hollow pedicle screw-anchored bone cement combined with posterior long-segment fixation for Stage III Kümmell's disease. Jt Dis Relat Surg 2025;36:15-23. doi: 10.52312/jdrs.2024.1834.
3. Guo X, Qiu Y, Liu X, Teng H, Hu H. Percutaneous short segmental fixation combined with bone cement augmentation for stage III Kümmell's disease without

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nerve deformity. Medicine (Baltimore) 2024;103:e37087. doi: 10.1097/MD.0000000000037087.
4. Sun Y, Li X, Ma S, Chong H, Cai TC, Li KM, et al. Comparison of the efficacy and safety of unilateral and bilateral approach kyphoplasty in the treatment of osteoporotic vertebral compression fractures: A meta-analysis. Jt Dis Relat Surg 2024;35:491-503. doi: 10.52312/jdrs.2024.1701.
5. Kim T, Park J, Cho J, Yi JS, Lee HJ. Quantitative comparison of vertebral structural changes after percutaneous vertebroplasty between unilateral extrapedicular approach and bilateral transpedicular approach using voxel-based morphometry. Neurospine 2023;20:1287-302. doi: 10.14245/ns.2346536.268.