status might explain the previously reported improved mortality with vertebral augmentation, they analyzed their data 2 ways: using traditional multivariate analysis (adjusted for patient demographics and comorbid condition) and using propensity score matching (to better account for baseline differences). Using traditional multivariate adjustments, mortality was 17% lower (95% CI, 8%-25%) in the vertebral augmentation group compared with nonsurgically treated patients, but using propensity matching they found no significant difference in 1-year mortality. In addition, in the propensity-matched group, they found that mortality in the 30 days preceding vertebral augmentation was significantly lower than that observed for nonsurgical patients, further demonstrating that augmentation patients were a lower-risk group. An important limitation of these data, acknowledged by the authors, is the lack of separate analyses for vertebroplasty and kyphoplasty procedures. Nonetheless, these results strongly suggest that previously reported differences in mortality among those who do and do not receive vertebral augmentation reflect baseline differences and not a beneficial effect of augmentation itself.

In summary, vertebral augmentation remains a frequently used intervention for symptomatic vertebral fractures, presumably because of the belief that it reduces fracture-related pain and disability and possibly improves survival. The highest-quality evidence (ie, randomized and adequately blinded trials) do not provide a compelling rationale for augmentation procedures and suggest that there are little or no differences in long-term pain and function compared with conservative management. The utility of augmentation to alleviate short-term pain and disability remains unclear. Furthermore, the study by McCullough et al convincingly demonstrates that vertebral augmentation is unlikely to reduce mortality after vertebral fracture. Thus, as summarized in a recent independent technology assessment addressing vertebral augmentation, until better evidence becomes available, the potential benefits of vertebral augmentation remain unproven, and it should not be routinely offered to patients with osteoporotic vertebral fracture to improve pain, improve function, or reduce mortality.

ARTICLE INFORMATION

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REFERENCES


Spinal Augmentation for Vertebral Fracture

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Spinal augmentation is the injection of bone cement into the collapsed vertebral body for treatment of osteoporotic vertebral fractures. In this study of spinal augmentation compared with conservative therapy, spinal augmentation was no more effective than conservative therapy in reducing the rate of major complications or mortality but resulted in higher rates of hospitalization and admission to the intensive care unit and to skilled nursing facilities. Based on the findings of no benefit from this invasive procedure, and definite harms including higher rates of hospitalization and other risks, we have designated this study by McCullough et al as Less Is More.