Vertebral compression fractures: What does the evidence show?

To the editor: I read "Vertebral compression fractures in primary care: Recommendations from a consensus panel" (published as a supplement to the *Journal of Family Practice*, September 2005) with dismay.

In general the panel gave disproportionate attention to the surgical management of osteoporotic vertebral compression fractures (VCFs), as only a minority of patients with painful osteoporotic VCFs require surgical intervention. My complimentary copy was furnished by Kyphon, the manufacturers of a proprietary device favorably reviewed by the consensus panel. I find it worrisome that 4 of 6 consensus panel members declaring potential conflict of interest disclosed a relationship with Kyphon; particularly since the panel failed to mention that kyphoplasty may cost $6000 more than vertebroplasty per vertebral level treated. Furthermore the panel leads the reader to believe that kyphoplasty has been convincingly shown to "restore spinal alignment" and thereby reduce subsequent fracture risk. In fact, post-kyphoplasty fracture risk may approach 25% within 2 months of the procedure.

The panel asserts that vertebroplasty does not restore vertebral height or reduce spinal deformity. In fact, a substantial body of peer review literature indicates that vertebral height restoration following kyphoplasty and vertebroplasty may be similar and that the small magnitudes of height restoration ordinarily achieved by either of these interventions may not even matter clinically.

The illustrative case reports were grossly transparent endorsements for kyphoplasty as in Case A the patient underwent kyphoplasty "under local anesthesia" (general anesthesia is more usually required), had the fracture "stabilized by PMMA" and had "excellent restoration of vertebral morphology without cement leak" whereas in Case B the patient underwent vertebroplasty and ended up with a "cement mantle" and "only [*sic*] mild intravascular leakage."

Your obligation to disseminate balanced, evidence-based information to your broad primary care base has been betrayed in this instance. Your editorial staff should resist issuing authoritative sounding "recommendations from consensus panels" which are nothing more than thinly disguised commercial endorsements for a proprietary product.

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The authors respond:

As moderator of the Consensus Panel on Vertebral Fracture Care in a Primary Care Setting, I would like to respond to the concerns of Dr Fergus McKiernan.

The Consensus Panel was supported by an unrestricted grant to the Texas Academy of Family Physicians and the Primary Care Education Consortium. We independently chose a panel of experts active in the management of these patients. The conflict of interest disclosures show consultation with a broad spectrum of companies providing treatments to patients with osteoporosis.

The focus of the panel was to summarize the current literature on, and their clinical experience with, VCFs, reviewing the

effects on patient quality of life, methods of VCF diagnosis, and current treatment modalities. The panel recommended that vertebroplasty or kyphoplasty be considered for patients with progressive deformity or intractable pain. A substantial body of clinical research documents the impact of the spinal deformity, independent of acute fracture pain, on the physical function, mental health and quality of life of patients with osteoporotic VCFs. Three of the panel members—Drs Gold, Papaioannou, and Silverman—have published extensively in this area. Only one panel member, Dr Truumees, is a physician who performs vertebroplasty and kyphoplasty. Dr Truumees is the primary author of the position paper on vertebral augmentation for the North American Spine Society.[1]

The decrements created by the osteoporotic spinal deformity increase with each additional radiographically detected VCF, including loss of quality of life,[2] and risk of future VCF within 1 year.[3] Excess mortality[4] and decline in measures of pulmonary function[5] also increase with increasing deformity. Improvements in spinal alignment through the positioning of patients undergoing vertebroplasty have been shown in the subset of VCFs that are mobile, but comparisons to improvements from kyphoplasty can only be made within the same patient. Voggenreiter[6] performed this analysis and reported that positioning provided some improvement, using the balloons doubled the improvement, and the final height achieved after kyphoplasty was maintained.

Biomechanics of the spine predict that deformity correction will reduce the number of subsequent fractures by unloading the anterior spine.[7] This is supported by two concurrently controlled studies, where significant reduction in subsequent fractures in patients treated by kyphoplasty compared with nonoperative management were seen at 6 months[8] and 1 year.[9] These papers also show that pain and function are significantly improved in patients undergoing kyphoplasty compared to nonoperative management at 6 months[8–10] and 1 year.[9]

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