Reviewer's comment concerning “Continuing conservative care versus cross-over to radiofrequency kyphoplasty: a comparative effectiveness study on the treatment of vertebral body fractures” (doi:10.1007/s00586-012-2148-8 by R. Bornemann, M. Hanna, K. Kabir, H. Goost, D. C. Wirtz, R. Pflugmacher)

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Osteoporotic vertebral fractures are very frequent, and management of such fractures is controversial. Two randomized controlled trials concluded that an augmentation technique, percutaneous vertebroplasty with PMMA, was no better than placebo. However, two subsequent controlled randomized trials found that a different augmentation procedure, kyphoplasty, was beneficial for treating these fractures.

In this report, the authors present a double cohort clinical study in which patients selected treatment based on pain and functional impairment. A study like this is probably as relevant as a clinical trial for evaluating a surgical technique. The results demonstrated that vertebral augmentation with PMMA relieved pain and improved function much faster than conservative treatment. We observed similar results in a similar study of vertebroplasty [1]. In our study, however, the pain and functional results were similar in both groups of patients at the one-year follow-up.

One interesting finding in this study is that the authors did address progression of the deformity after 6 weeks in patients who opted for conservative treatment. However, we do not know the clinical results of these patients after 1 year or whether loss of kyphosis had any clinical relevance.

In my opinion, although this study is fundamentally sound, the conclusions need to be revised. Specifically, the results indicate that vertebral augmentation with PMMA should be offered to patients with a fresh fracture. However, it is important to first understand why half of their

patients never opted for surgery. I am not convinced that it is because they did not receive complete or clear information about the procedure. We have to remember that most of these fractures heal with conservative treatment, and only an estimated 30% of vertebral fractures receive clinical attention. This means that vertebral fractures in the majority of patients remain undetected, because the patients have no major symptoms [2].

The study provides clinical data about the efficacy of treating a symptomatic osteoporotic vertebral fracture using augmentation with PMMA that are in agreement with what we have observed in our clinical practice. It is difficult to debate which technique is better since we do not yet know the clinical relevance of an epidural leakage or a small reduction of the kyphosis.

I completely agree with the authors when they note that further research is needed regarding patient factors to improve patient counseling. Currently there are 10 different classifications for vertebral fractures, but all studies about augmentation techniques include all osteoporotic vertebral fractures in the same group. Perhaps it is time to define which of these fractures need surgical treatment. For example, we cannot compare a solitaire compression fracture of L3 with <20% of height loss with a wedge fracture at the thoraco-lumbar spine with a cleft and several co-morbidities, such as prolonged steroid treatment. In a study that we performed years ago, we demonstrated that vertebroplasty with PMMA had excellent efficacy in 92.4% of healthy patients (with no co-morbidities) with a fractured vertebra, a positive MRI signal and mild collapse [3].

In conclusion, this is an excellent study that demonstrates the efficacy of a controversial technique that may let us offer our patients faster relief. However, further studies about the indications are needed to avoid overuse of the procedure.

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References

1. Alvarez L, Alcaraz M, Pérez-Higueras A, Granizo JJ, de Miguel I, Rossi RE, Quiñones D (2006) Percutaneous vertebroplasty: functional improvement in patients with osteoporotic compression fractures. *Spine (Phila Pa 1976)* 31:1113–1118
2. Cooper C, O'Neill T, Silman A (1993) The epidemiology of vertebral fractures. European Vertebral Osteoporosis Study Group. *Bone* 14:S89–S97
3. Alvarez L, Pérez-Higueras A, Granizo JJ, de Miguel I, Quiñones D, Rossi RE (2005) Predictors of outcomes of percutaneous vertebroplasty for osteoporotic vertebral fractures. *Spine (Phila Pa 1976)* 30:87–92