Percutaneous vertebroplasty

To The Editor: We were interested in the article by Farrokhi et al.2 (Farrokhi MR, Alibai E, Maghami Z: Randomized controlled trial of percutaneous vertebroplasty versus optimal medical management for the relief of pain and disability in acute osteoporotic vertebral compression fractures. Clinical article. J Neurosurg Spine 14:561–569, May, 2011). Osteoporotic vertebral compression fractures (VCFs) are often found in postmenopausal women, females who have undergone early oophorectomy, and patients who have received long-term steroid treatment. Although the outcome of percutaneous vertebroplasty (PV) has been debated,1,3 the procedure has shown early improvement of pain in most patients with osteoporotic VCFs.1,3 Farrokhi et al. conducted their study based on the eligible criteria of severe back pain resulting from osteoporotic VCFs that was refractory to pain medication and poorly responsive to medical therapy, localized pain close to the corresponding fractured vertebra, significant osteoporosis with a T-score < 2.5, collapsed vertebral height on radiographs of the spine, and vacuum phenomenon or bone marrow edema of the vertebral fracture on MR imaging. They showed that PV improved quality of life, restored the average vertebral body height, and corrected vertebral deformity in the management of painful acute osteoporotic VCFs.

They observed that the incidence of new fractures in the optimal medical management group was higher than in the PV group. This finding was inconsistent with our experiences in the management of osteoporotic VCF at Tri-Service General Hospital in Taiwan. It is well known that cement is hard after polymerization. Therefore, the injected cement would produce some pressure in adjacent vertebrae on flexion of the back and would lead to new fractures.1,2 Note, however, that PV has provided a beneficial effect on pain reduction and stabilization of the cleft vertebra. In fact, osteoporotic VCF is not a surgically curable disease. It requires optimal medical management to prevent further collapsed vertebrae.

Despite this concern, the authors’ study has established additional evidence in support of PV in dealing with painful osteoporotic VCF. The procedure has provided an alternative treatment for patients with intractable osteoporotic VCF. Further large-scale, multicenter randomized controlled trials would further clarify the effect of PV in the management of osteoporotic VCF.

RESPONSE: Percutaneous vertebroplasty is not a cure for VCFs but is a palliative treatment for controlling pain and preventing spinal deformity.1,6,8,10 In addition, it should be mentioned that medical treatment does not prevent spinal deformity in patients with VCFs.7 We agree that medical therapy should be prescribed for the prevention of new VCFs in osteoporotic patients and not for the treatment of fractures. Percutaneous vertebroplasty is a minimally invasive technique in controlling pain, providing more immediate pain relief and improving more rapidly daily functional activity in patients with VCFs than optimal medical treatment.6,8–11

In our study a proper amount of cement was injected into the vertebral body, and thus fewer adjacent fractures occurred.2–5 Therefore, we think this idea that vertebral hardening with the PV technique can increase new vertebral fractures is not correct. It seems that as the results of our study show, injecting a smaller volume of cement—almost 3.5 ml via a unilateral parapedicular approach—can reduce vertebral hardening and lead to a lower adjacent vertebral fracture rate.

We should note that our study had strict inclusion cri-
teria including 1) localized acute pain resulting from VCFs, 2) acute radiological findings such as bone marrow edema of the vertebral fracture on MR imaging, 3) fractures for less than 1 year, and 4) unresponsiveness to conservative treatment. Therefore, if other studies have inclusion criteria similar to those in our study, the studies can be compared. We propose that multicenter studies with the same inclusion criteria should be undertaken.

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References


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Spine clearance

To The Editor: I congratulate Wadhwa et al. (Wadhwa R, Shamieh S, Haydel J, et al: The role of flexion and extension computed tomography with reconstruction in clearing the cervical spine in trauma patients: a pilot study. Clinical article. J Neurosurg Spine 14:341–347, March, 2011) for their attempt to solve the commonplace problem of clearing the cervical spine in trauma patients. After reading their article, however, I believe the authors have overestimated the benefits of their suggested technique of dynamic neck CT.

It is essential at the outset to acknowledge that CT scanning of the spine for alignment is not comparable with plain film imaging because CT slices are acquired sequentially, not instantaneously, as is the case with plain films. As a result, if the patient moves during the acquisition, the reconstructions will give the illusion of abnormal alignment (Fig. 1). On the one image in their paper that was supposed to show abnormal alignment, there is a motion artifact through the spinous process at the indicated level. I did not find the image they present as abnormal to be convincing.

I also have reservations with their financial analysis and wonder if they confuse the words “cost” and “charge.” The real cost of this technique must be substantially more than routine CT. Their estimate of adding 10 minutes or so to the examination seems optimistic, and I wonder how the need for a neurosurgical resident in attendance for comatose patients will be received at many busy hospitals. The added room time needed and the fact that at least 2 scans are obtained, since there will be repeats in this patient group, must be considered in any cost analysis. If their institution chooses to charge at this very low price, they should not assume that this will be the case everywhere.

The cost reported for both MR imaging and CT scanning seems surprisingly low, and I found it puzzling that