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Vertebroplasty for osteoporotic vertebral fractures: is it efficient?

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Vertebroplasty is commonly used to treat painful, osteoporotic vertebral compression fractures. Two recent studies [1,2] evaluated the efficiency of this procedure. In a multicenter trial [1], the authors randomly assigned 131 patients who had one to three painful osteoporotic vertebral compression fractures to undergo either vertebroplasty or a simulated procedure without cement (control group). The primary outcomes were scores on the modified Roland–Morris Disability Questionnaire (RDQ) (on a scale of 0 to 23, with higher scores indicating greater disability) and patients' ratings of average pain intensity during the preceding 24 hours at 1 month (on a scale of 0 to 10, with higher scores indicating more severe pain). Patients were allowed to cross over to the other study group after 1 month.

All patients underwent the assigned intervention (68 vertebroplasties and 63 simulated procedures). The baseline characteristics were similar in the two groups. At 1 month, there was no significant difference between the vertebroplasty group and the control group in either the RDQ score or the pain rating. Both groups had immediate improvement in disability and pain scores after the intervention. Although the two groups did not differ significantly on any secondary outcome measure at 1 month, there was a trend toward a higher rate of clinically meaningful improvement in pain (a 30% decrease from baseline) in the vertebroplasty group (64% vs. 48%, $P=0.06$). At 3 months, there was a higher crossover rate in the control group than in the vertebroplasty group (43% vs 12%, $P<0.001$). There was one serious adverse event in each group.

The second study [2] was also a multicenter, randomized, double-blind, placebo-controlled trial in which 78 participants with one or two painful osteoporotic vertebral fractures that were of less than 12 months' duration and unhealed, as confirmed by magnetic resonance imaging, were randomly assigned to undergo vertebroplasty or a sham procedure. Similar improvements were seen in both groups with respect to pain at night and at rest, physical functioning, quality of life, and perceived improvement.

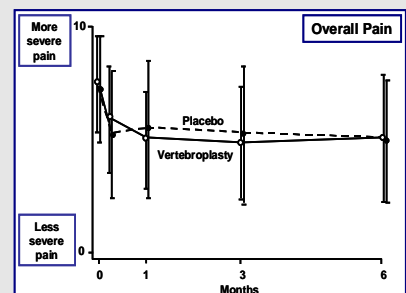
In conclusion, improvements in pain and pain-related disability associated with osteoporotic compression fractures in patients treated with vertebroplasty were similar to the improvements in a control group. These studies found no beneficial effect of vertebroplasty as compared with a sham procedure in patients with painful osteoporotic vertebral fractures, up to 6 months after treatment.

1. Kallmes DF et al. *N Engl J Med.* 2009; 361:569-579.
2. Buchbinder R et al. *N Engl J Med.* 2009; 361:557-568.

Vertebroplasty for osteoporotic vertebral fractures: is it efficient?

The question of whether vertebroplasty brings benefit in the treatment of osteoporotic vertebral fractures has been addressed in two multicenter randomized trials. Both trials reach the conclusion that, up to 6 months, this treatment did not significantly improve pain, neither at night and at rest. There was no benefit on the quality of life, whatever the scale used. The disability score was not improved by vertebroplasty as compared with control.

These results should lead to reconsidering vertebroplasty as a useful treatment in this indication.



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