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Significantly fewer refractures after vertebroplasty in patients who engage in back-extensor-strengthening exercises

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Abstract

Objective: To determine whether patients with osteoporotic compression fractures would have decreased fracture recurrence or a longer time before refracture after percutaneous vertebroplasty (PVP) if they also participated in the Rehabilitation of Osteoporosis Program-Exercise (ROPE) instruction, which includes back-strengthening exercises.

Patients and methods: We reviewed and collected data from the medical records of 507 patients with osteoporosis who were treated at Mayo Clinic's site in Rochester, MN, from July 1, 1998, through August 31, 2005. Patients older than 55 years with at least 1 radiographically confirmed nontraumatic vertebral compression fracture (VCF) were identified, and those with evidence of secondary osteoporosis, traumatically induced VCF, long-term oral corticosteroid use, or bone malignancy were excluded. The remaining 57 patients were categorized into 3 groups: those receiving treatment with ROPE only (n=20), PVP only (n=20), or both PVP and ROPE (n=17). The end point was the refracture date or date of the last recorded follow-up if no refracture occurred. Statistical analysis of time-to-recurrence data was performed using the Kaplan-Meier method and the log-rank test (P less than .05).

Results: The median time before refracture for patients treated with PVP was 4.5 months (95% confidence interval [CI]), 1.4-9.3 months; for patients treated with ROPE only, 60.4 months (95% CI, 27.6 months-upper limit undefined); and for patients treated with PVP-ROPE, 20.4 months (95% CI, 2.8 months-upper limit undefined) (P <001).

Conclusion: This retrospective study showed that a targeted exercise program after PVP significantly decreased fracture recurrence. Refracture rates also were lower in the ROPE-only group vs the PVP-only group.