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NEWS

RSNA Press Release

Largest Study To Date Finds Vertebroplasty Safe And Effective

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Oak Brook, IL – The largest published vertebroplasty study to date has found the procedure safe and effective in treating spine fractures resulting from osteoporosis. Further, the multicenter study, published in the February issue of the journal *Radiology*, reported that vertebroplasty can significantly reduce pain and improve a patient's quality of life.

Osteoporotic vertebral compression fractures, or spine fractures, result in acute pain and disability. These fractures become more common as the aging process reduces skeletal mass and bone strength. Most current medical treatments emphasize pain medication and bed rest.

"Percutaneous (through-the-skin) polymethylmethacrylate (PMMA) vertebroplasty offers hope beyond pain medicine and bed rest to people with vertebral compression fractures," said the study's lead author Avery J. Evans, M.D., assistant clinical professor of radiology and neurosurgery at the University of South Florida. "Patients with osteoporotic spine fractures can be safely treated with a one- to two-hour vertebroplasty procedure. Most are immediately relieved of their pain and begin walking again."

Interventional radiologists perform vertebroplasty with an x-ray-guided needle that delivers PMMA, a bone cement, to fill in and stabilize the broken bone, thus relieving much or all of the pain.

"Treatment of vertebral fractures with percutaneous PMMA vertebroplasty appears to be safe and results in substantial immediate pain reduction and improved functional status," the researchers reported.

According to the National Osteoporosis Foundation, more than 10 million Americans have osteoporosis, and an additional 34 million have low bone mass, putting them at high risk for developing the disease. Dr. Evans and his colleagues reported that 700,000 Americans annually develop vertebral compression fractures as a result of osteoporosis.

The researchers conducted a three-year retrospective cohort study of people (mean age, 76 years) who underwent percutaneous PMMA vertebroplasty at seven U.S. hospitals. Of 488 patients contacted, 245 patients completed a telephone questionnaire designed to measure pain, mobility and ability to perform activities of daily living before and after vertebroplasty.

The study found that PMMA vertebroplasty of spine fractures is safe and effective. Following vertebroplasty, the patients' self-reported mean pain score decreased from 8.9 to 3.4 on a 10-point scale. Approximately three-quarters (72 percent) of the patients had difficulty walking prior to treatment compared with 28 percent afterward. The ability to perform activities of daily living significantly improved following the procedure.

"Our results indicate that vertebroplasty should be seriously considered as the standard therapy for patients with osteoporotic vertebral compression fractures," Dr. Evans said. "However," he added, "the results should be treated with some caution, since it was not a prospective, randomized trial."

Dr. Evans advises patients in pain from vertebral compression fractures to pursue a vertebroplasty consultation: "Most Americans live within an easy drive of an institution that offers vertebroplasty," Dr. Evans said.

Dr. Evans envisions an expanded role for the procedure in the future. "I predict that preventive vertebroplasty will be the next big thing on the horizon," he said. "Currently, we only treat patients following a fracture. However, we know of many patients who are likely to have vertebral compression fractures once their osteoporosis progresses to a certain degree. We need to start researching which patients should be treated with vertebroplasty before they actually have a vertebral fracture," Dr. Evans concluded.

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"Vertebral Compression Fractures: Pain Reduction and Improvement in Functional Mobility after Percutaneous Polymethylmethacrylate Vertebroplasty-Retrospective Report of 245 Cases." Collaborating with Dr. Evans on this study were Mary E. Jensen, M.D., from University of Virginia, Charlottesville; Kevin E. Kip, Ph.D., from University of Pittsburgh, Pittsburgh, Pa.; Andrew J. DeNardo, M.D., from Methodist Hospital, Indianapolis, Ind.; Gregory J. Lawler, M.D., from Advanced Diagnostic Imaging, Goodlettsville, Tenn.; Geoffrey A. Negin, M.D., from Lee Memorial Hospital, Fort Myers, Fla.; Kent B. Remley, M.D., from Center for Diagnostic Imaging, Indianapolis, Ind.; Selene M. Boutin, M.S.N., A.R.N., from Radiology Associates of Tampa; and Steven A. Dunnagan, M.D., from Radiology Associates, Little Rock, Ark..

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