

Vertebroplasty: Integral to treating back pain in blood marrow cancer patients

March 15 2010

Treating non-osteoporotic compression fractures in patients with multiple myeloma, a blood cancer, shows that the use of vertebroplasty—a minimally invasive treatment performed by interventional radiologists using imaging guidance that stabilizes collapsed vertebrae with the injection of medical-grade bone cement into the spine—results in a reduction of pain, medication usage and disability, according to researchers in the largest study of its kind at the Society of Interventional Radiology's 35th Annual Scientific Meeting in Tampa, Fla.

"The minimally invasive, image-guided treatment of [vertebroplasty](#) is an integral component to the complicated treatment of multiple myeloma, an incurable (yet treatable) cancer of the bone marrow that causes destructive lesions in bones and makes them more susceptible to fracture. By reducing pain and improving mobility, vertebroplasty helps patients become better equipped to continue with their rigorous treatment for multiple myeloma," said Eren Erdem, M.D., associate professor of radiology and neurosurgery and chief of interventional neuroradiology at the University of Arkansas for Medical Sciences in Little Rock. "There are many studies reporting the effectiveness of vertebroplasty in treating osteoporotic vertebral compression fractures. With 792 patients, this is the largest study to date in the treatment of compression fractures in multiple myeloma patients," he added.

"Vertebral compression fractures are very common in patients with multiple myeloma and cause severe pain and debilitation. Patients can

experience compression of abdominal contents and a decrease in lung capacity, resulting in weight loss, anorexia and a reduced ability to perform normal daily functions," Erdem noted. "In our study, patients' pain from their spinal fractures was significantly reduced following vertebroplasty, resulting in about a 40 percent reduction in the use of narcotics for pain control," said Erdem, with half of the patients also reporting an improvement in their activity level following treatment.

About 20,000 Americans are diagnosed with multiple myeloma each year, making it the second most common [blood cancer](#) in the United States. Most patients are in their early sixties when diagnosed, and the disease is more common in men and African-Americans. Multiple myeloma is a cancer that begins in plasma cells, a type of white blood cell. These cells are part of the immune system, which helps protect the body from germs and other harmful substances. In time, myeloma cells collect in the bone marrow and in the solid parts of bone—causing painful bone deterioration, typically in the drum-shaped bones of the spine, the vertebrae. Vertebral compression fractures occur when the internal scaffolding—bone marrow—is weakened due to the cancer, explained the co-author of "Vertebral Augmentation in the Treatment of Non-osteoporotic Vertebral Compression Fractures in 792 Patients With Multiple Myeloma."

Researchers at the University of Arkansas for Medical Sciences treated 2,715 non-osteoporotic vertebral compression fractures in 792 patients with [multiple myeloma](#) (45 percent women; average age, 63) over a six-year period. Of 2,715 non-osteoporotic vertebral compression fractures, 2,258 were treated by vertebroplasty and 457 were treated by kyphoplasty, a procedure in which a balloon is placed in the vertebrae (then inflated) and [bone cement](#) is applied.

In the study, the average pain intensity score for patients based on the 11-point visual analog scale dropped significantly from 7.0 to 2.7. In the

study, 37 percent of patients reported a decrease in medication usage; 62 percent had no change; and 1 percent reported an increase in medication usage. Also, 48 percent of patients reported an improvement in their post-procedural activity level, and 83 percent would consider vertebroplasty or kyphoplasty again, if needed.

Provided by Society of Interventional Radiology

Citation: Vertebroplasty: Integral to treating back pain in blood marrow cancer patients (2010, March 15) retrieved 2 February 2024 from

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