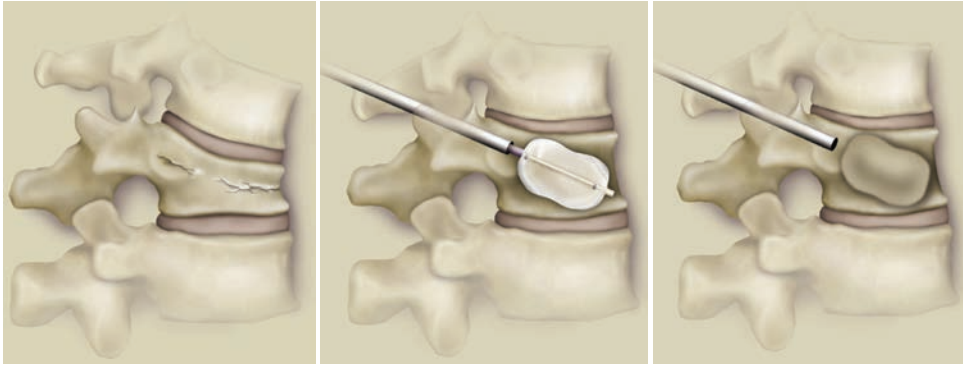


Balloon kyphoplasty for compression fractures found very safe, effective for older patients



The kyphoplasty procedure treats vertebral compression fractures (left) by inserting an inflatable balloon within the vertebral body (middle). The inflated balloon creates a space within the center of the vertebral body for the injection of a bone cement (right).

by Peter C. Gerszten, MD, MPH

The percutaneous balloon kyphoplasty procedure is a well-accepted treatment for symptomatic osteoporotic compression fractures. The procedure is minimally invasive and is usually performed in an outpatient setting. The University of Pittsburgh Department of Neurological Surgery has one of the longest and largest experiences with the technique in the region. As one might imagine, the majority of patients who experience osteoporotic compression fractures are older individuals.

Kyphoplasty is a technique for vertebral compression fractures that involves the introduction of a cannula into the vertebral body followed by the insertion of an inflatable balloon. The balloon is inflated within the vertebral body. When the balloon is inflated, it creates a space within the center of the vertebral body for the injection of polymethylmethacrylate (bone cement).

In addition, the inflation of the balloon itself in the kyphoplasty procedure can also lead to some increase in the vertebral body height and therefore correction of the abnormal configuration of the vertebral body that existed as a result of the fracture.

After the balloon is removed, there is an empty space within the vertebral body that allows for the low-pressure injection of the polymethylmethacrylate into the cavity created by the balloon. Injection under low pressure in kyphoplasty has the advantage of decreasing the rate of leakage of polymethylmethacrylate either into the spinal canal or into the draining veins of the vertebral bodies.

Given the concern regarding a potentially greater morbidity and poor outcomes in very elderly patients who undergo the balloon kyphoplasty procedure, we undertook a study that specifically evaluated our very elderly patients. A consecutive series of 137 patients over age 80 who underwent the procedure over a six-year period were evaluated. The indication for treatment included pain unresponsive to non-surgical management in all cases.

The mean age for this group was 88 years. Common co-morbidities included diabetes, hypertension, atrial fibrillation, coronary artery disease, and a history of pulmonary embolism. Fractures from T4 to L5 were successfully treated in an outpatient setting. We found that no procedure had to be aborted due to medical issues at the time of surgery. Seventy-five patients had a single level treated, 50 had two levels treated, and 12 had three levels treated.

Back pain improvement was used as the primary outcome measure. The mean VAS score for back pain improved from 9 to 3.5 ($p < 0.0001$). There were no cases of myocardial infection, infections, cement extravasation, or new neurologic deficit. The results indicated that balloon kyphoplasty is a safe and highly effective treatment for symptomatic compression fractures, even for very elderly patients. The procedure can be safely performed in an outpatient setting. Age alone should not be an exclusion criterion for candidate patients.

For further information regarding minimally invasive treatments for compression fractures, please (412) 647-1700. •

Department forms aneurysm support group

The University of Pittsburgh Department of Neurological Surgery is dedicated to providing exceptional care for our patients, both in and out of the hospital. With this in mind, the department has formed the Western Pennsylvania Brain Aneurysm and AVM Support Group, designed to provide a platform of education and support for patients—and their families—struggling with the physical and emotional problems associated with aneurysms and AVMs.

The support group has been specifically designed to combine education about aneurysms and AVMs, as well as provide a look into the different aspects of care. Monthly speakers in such fields as neuropsychology, research, neurological surgery, stroke and critical care medicine allow patients and families to ask questions regarding their diagnosis and deficits—both emotional and physical. After each speaker, the floor is open to anyone who would like to share their concerns, fears, hopes, triumphs and effective coping mechanisms.

By providing education and support, patients and families begin to understand that their diagnosis and deficits are multifaceted and recovery is an ongoing process.

The Western Pennsylvania Brain Aneurysm and AVM support group is a division of the National Brain Aneurysm Foundation (NBAF), the world's only nonprofit organization solely dedicated to providing critical awareness, education, support and research funding to reduce the incidence of brain aneurysm ruptures.

The aneurysm and AVM support group is open to any person or family member diagnosed with either a brain aneurysm or an AVM, regardless of hospital affiliation or treatment status.

Support group meetings are held monthly in the Department of Neurological Surgery main conference room located in Suite B-400 of UPMC Presbyterian. Parking is available in an adjacent garage for \$5. Refreshments are provided.

For more information, please contact Emily Guerriero, PA-C—support group coordinator—at (412) 864-2294.