Invited Comments

Severe pain after compression fractures of the spine is a common medical problem. Vertebral compression fractures occur either due to mineral loss of the bone in osteoporosis, or due to vertebral destruction by benign or malignant tumors. Percutaneous vertebroplasty is a procedure used to augment bone and relieve pain through the injection of polymethylmethacrylate (PMMA) into a collapsed vertebral body. In patients with malignancy, the infiltrating tumor destroys the integrity of the vertebrae, causing vertebral collapse with associated severe pain. Regardless of etiology, all patients with vertebral compression fractures suffer disabling and persistent pain for weeks or months.

Surgery is rarely considered for patients with metastatic bone infiltration. Vertebroplasty is useful for the treatment of selected patients with spinal malignancy. For the most part, the technique has been applied to patients with a limited life span, and those who are considered to be poor surgical candidates. Vertebroplasty may be performed to provide pain reduction, spinal stabilization, or both. Extensive osteolysis, particularly involving the posterior vertebral cortex, may lead to a leakage of the material used for vertebroplasty into the spinal canal. As a result, spinal cord or nerve root compression may occur. In contrast to the treatment of benign compression fractures, the treatment of neoplastic lesions often requires modification of the techniques used for vertebroplasty. Combining vertebroplasty with post-treatment irradiation is possible and useful.

The advantage of this technique for treatment of neoplastic disease is supported in the literature. Weill et al. reported a clear reduction in pain in 24 (73%) of 33 procedures in a series of patients treated for metastatic lesions by vertebroplasty.\[1]\ Cotten et al. observed extra vertebral cement leakage in 72.5% of his patients. In almost all cases, the leaks were small and had no clinical relevance.\[2]\ Our own study on spinal metastases showed pain relief in 86% of all patients treated, with 23% cement leakage (no neurological significance).\[3]\ In space-occupying malignancies accompanied by neurological deficit, the decision to use vertebroplasty must be taken with extreme caution. In the presence of a tumor-derived bony destruction that allows leakage, the space-occupying effect associated with ventral compression or dislocation of the medulla will persist or be amplified by the surplus of PMMA.

Vertebroplasty treatment shows similar results with regard to pain relief for benign osteoporotic fractures and tumor-derived vertebral destruction. However, complications are more frequent in patients with vertebral destruction.\[4]\

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References