Compression Fracture Case Study

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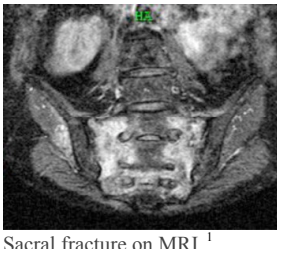
This case presentation demonstrates the use of kyphoplasty to treat sacral insufficiency fractures. It also illustrates the importance of recognizing new or additional fractures when patients fail to improve after kyphoplasty. Clearly most patients experience immediate relief following kyphoplasty. Some degree of back pain persisting after the procedure may be related to preexisting conditions such as spinal stenosis. When severe pain continues and patients fail to recover back to baseline, new or additional fractures should be considered. Repeat MRI imaging is the key to identifying new or additional fractures.

Case presentation
An 88 year old female fell at home. As her functioning declined, she was hospitalized for back pain at Merrimack Valley Hospital. Regular opioid dosing improved rest pain but she remained unable to move comfortably. MRI demonstrated an old L2 compression fracture and an increase in the degree of compression at T12 compared with 7 months earlier. Based on edema and increase collapse, kyphoplasty was performed at T12.

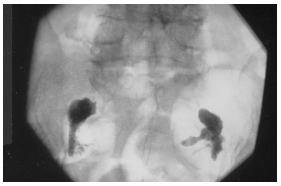
Postoperatively her pain was much better and she was transferred to Northeast Rehabilitation Hospital for rehabilitation. Although clearly improved, she remained limited and unable to fully participate in physical therapy. Because of sacral pain and tenderness, there was a clinical suspicion of a sacral insufficiency fracture. Repeat MRI demonstrated a clear sacral insufficiency fracture.

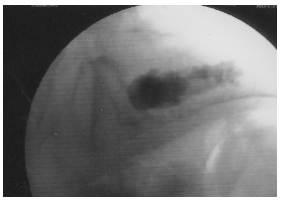
Sacroplasty was performed at NERH. Postoperatively her recovery progressed very well. Two weeks later she reported complete resolution of back pain and returned to independent living.


Sacral fracture on MRI [1]

Sacral Insuffuciency fractures
Patients present with low back back pain that may extend to the upper leg. Tenderness is often present over the sacrum. There is not always a history of a fall or trauma since osteoporotic bone can fracture simply with weight bearing. The diagnosis is often missed because x-rays do not show a deformity and the sacrum is not well defined on lumbar MRI. With an MRI of the sacrum, edema will be seen in the sacrum on STIR imaging. Bone scan will show increased activity in the sacrum with an “H” sign.

Traditional treatments have included opioids and rest. We should be recognize the 14% one year mortality with this diagnosis[2] and consider more aggressive treatment. There have been increasing reports regarding the use of sacroplasty for treating pain and restoring mobility. We now have a prospective multicenter trial of 37 patients treated with sacroplasty.[1] Pain scores were reduced from 7.7 to 3.2 30 minutes after the procedure. In a second study this year, over 80% of patients experienced a dramatic reduction in pain that was maintained at 2 years.[3]




Images from Sacroplasty performed at NERH

1 Frey ME, DePalma MJ, Cifu DX, et al. Efficacy and safety of percutaneous sacroplasty for painful osteoporotic sacral insufficiency fractures: a prospective multicenter trial. Spine 2007;32:1635-1640.

2 Tallandier j, Langue F, Alemanni M, et al. Mortality and functional outcomes of pelvic insuffucienty fractures. Joint Bone Spine. 2003;70:287.

3 Frey ME,DePalma MJ, Cifu DX, et al. Efficacy and safety of percutaneous sacroplasty for painful osteoporotic sacral insufficiency fractures: a prospective multicenter observational pilot study. Spine J. 2008