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**Dr. R Sakthivel**  
 Senior Resident, Shri Sathya Sai  
 Medical College and Research  
 Institute, Ammapettai,  
 Chengalpet, Tamil Nadu, India

**Dr. F Abdul Khader**  
 Professor, Shri Sathya Sai  
 Medical College and Research  
 Institute, Ammapettai,  
 Chengalpet, Tamil Nadu, India

## Outcome of vertebroplasty in osteoporotic vertebral compression fracture

**Dr. R Sakthivel and Dr. F Abdul Khader**

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### Abstract

**Background:** Vertebral compression fracture occurs when vertebral body collapses and it leads to severe pain, loss of vertebral height and deformity. Most commonly occurs in thoraco-lumbar region. Most common fracture in patients with osteoporosis.

**Materials and Methods:** A total of 20 patients with osteoporotic vertebral compression fracture was treated in this study from November 2021 to October 2022.

**Results:** After 1 Year of Follow up, result Was Excellent in 15 Patients, Good in 3 Patients, Fair in 1 Patient and cement leakage in 1 patient.

**Conclusion:** We conclude that vertebroplasty is safe and minimally invasive procedure for osteoporotic vertebral compression fractures. Proper selection of patient, evaluation, and technique are important to obtain good outcomes and minimize the complications.

**Keywords:** Vertebral compression, Vertebroplasty, retension, kyphosis, osteoporosis

### Introduction

Vertebral compression fracture is breakdown in your spine. Compression fracture occurs when there is too much pressure on vertebra. It affects about 750,000 people annually. It causes pain, deformity and also affects quality of life. Further the fractured vertebra may collapse and progress to kyphosis with many complications. Vertebroplasty is minimally invasive procedure to treat vertebral compression fractures.

### Aim and Objective

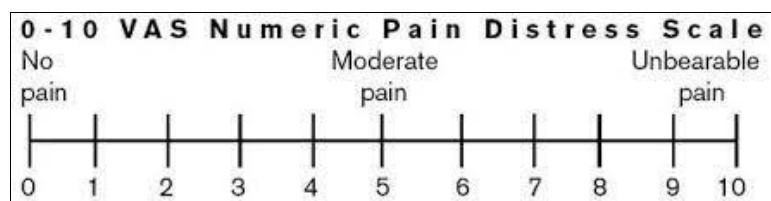
To study the functional outcome of vertebral compression fractures treated by vertebroplasty.

### Methodology

The study was done in department of orthopedics, Shri sathya sai medical college and research institute from November 2021 to October 2022. 20 cases of vertebral compression fractures causing severe pain and not responded to conservative treatment were included in this study.

### Assessment

On admission, patients demographic date were noted, swelling, any deformity, condition of skin, Tenderness, neurologic impairment and weakness were inspected. Severity of pain was evaluated using VAS Pain scoring system.



**Corresponding Author:**  
**Dr. R Sakthivel**  
 Senior Resident, Shri Sathya Sai  
 Medical College and Research  
 Institute, Ammapettai,  
 Chengalpet, Tamil Nadu, India

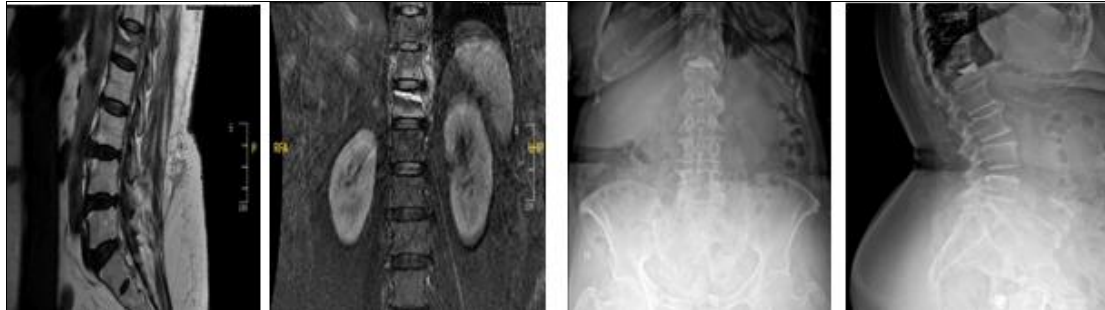
**Imaging:** Fracture was evaluated using plain radiograph in antero-posterior and lateral views. CT or MRI were taken.

**Procedure**

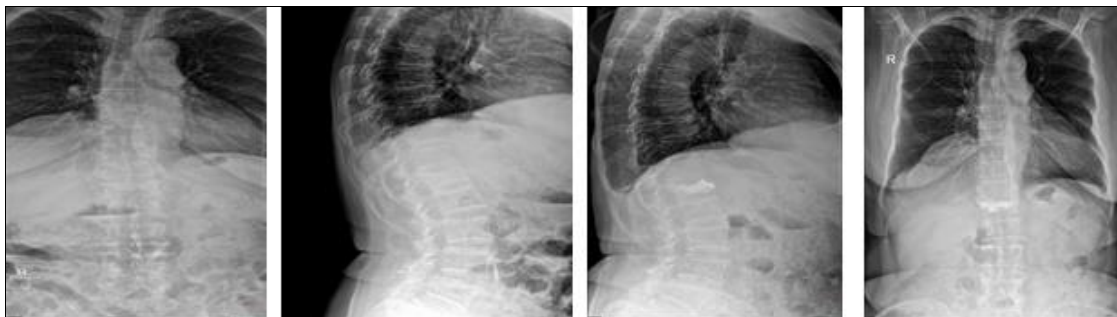
All procedures were performed in aseptic condition under LAMAC. Patient in prone position, parts prepared and draped, under c-arm guidance via transpedicular approach using 11 gauge needle. Antero- posterior and lateral images were taken to check correct position of the needle. The

prepared Polymethyl Methacrylate was injected into vertebral body, and satisfactory infiltration confirmed radiographically. Patients are followed up at 1 month, 3 month, 6 month and 1 year. Follow up is done by assessing x-ray, neurological examination and functional score (VAS).

**Case 1-74 yrs. female with L1 Osteoporotic compression fracture**



**Case 2-76 yrs. female with L1 Osteoporotic compression fracture**

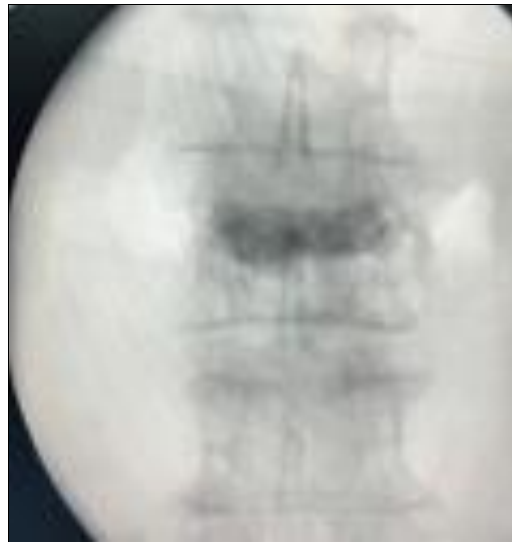
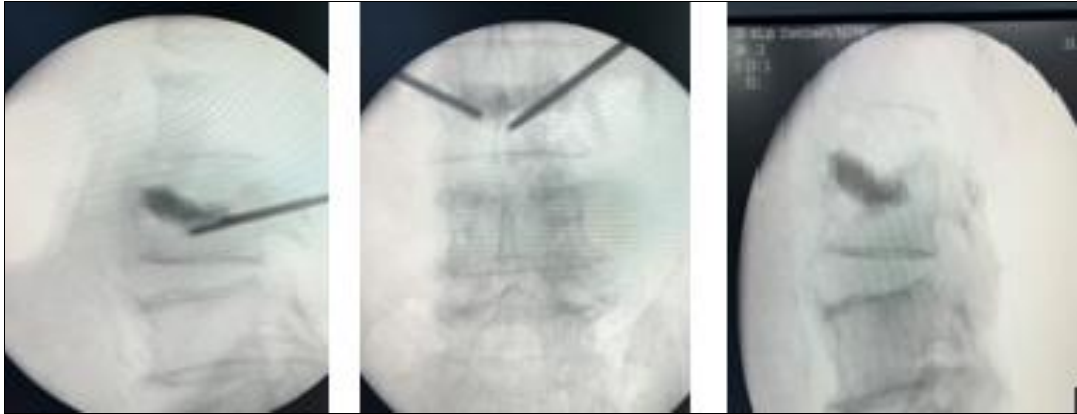


**Case 3-67 yrs. male with D12 L1 Osteoporotic compression fracture**



**Case 4-82 yrs. male with D12 Osteoporotic compression fracture**





### Pain Relief

Clinical Status	Immediate	3 Months
Asymptomatic	0	7
Improved	4	11
Static	16	2
Deteriorated	0	0

### Discussion

Osteoporosis is more common with increasing age of population. Bone mass is decreased causing bone fragility. Osteoporotic vertebral compression fractures can cause back pain, resulting in decreased mobility and many complications like urinary retention, kyphosis, depression. Few patients are treated conservatively, but many patients may have severe pain impacting the quality of life. Percutaneous injection of bone cement into compressed vertebra is done. Improvement in mobility and pain is immediate after vertebroplasty. Theories of pain relief following vertebroplasty are Mechanical theory, Thermal theory, and Decompression theory.

### Conclusion

Percutaneous vertebroplasty is an effective and safe procedure in treating vertebral compression fractures. It provides pain relief immediately, restores function, prevents deformity and allows early mobilization. This procedure avoids complication related to prolonged bed rest. If this procedure is performed meticulously, incidence of cement leakage can be avoided. From this study we conclude that percutaneous vertebroplasty is significantly effective in management of vertebral osteoporotic compression fractures.

### Conflict of Interest

Not available

### Financial Support

Not available

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