

## Why it failed? 3-year follow up after stand alone cement augmentation for osteoporotic thoracolumbar burst fracture : A Case Report

AO Normawathy<sup>1</sup>, S Jaya Thilak 1, HS Lim 1, KB Zairul Anuar<sup>1</sup>,

<sup>1</sup> *Department of Orthopaedic Surgery, Penang General Hospital, Penang.*

### INTRODUCTION:

Thoracolumbar burst fracture in elderly osteoporotic patients is among the challenging issues in spinal traumatology. A more extensive surgeries has higher complication rate due to multiple comorbidities of elderly patients. We are reporting a case of osteoporotic thoracolumbar burst fracture that was initially treated with stand alone cement augmentation and the chronological events that occur post initial surgery.

### REPORT:

An 66 years old lady ( BMI 35 ) has history of fall in January, 2019, sustained L1 burst fracture with no posterior wall breach. ( DGOU type 4 ). She was treated with stand alone cement augmentation (vertebroplasty) one month later. ( Figure 1 ) She has immediate pain relief post-surgery. The pain free only lasted for 5 months, whereby, later, she presented with persistent low back pain with VAS 8-9, that really affected her ADL. X-ray and MRI shows a worsening kyphosis with L1 stenosis.( Figure 2 ) She undergo another operation on Jun, 2020 ( Posterior instrumentation of T11 to L2 with decompression of L1 ), ( Figure 3 ) unfortunately complicated with deep SSI. Currently, she has bilateral sacroiliitis that we plan for conservative management with injection.

### CONCLUSION:

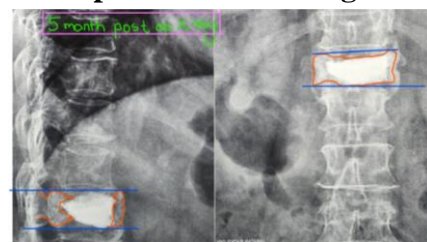
Percutaneous vertebral augmentation procedures are a valid anterior column reconstruction technique for thoracolumbar compression fractures. Although stand-alone cement augmentation could provide some degree of support for the anterior column, persistent traumatic instability of the affected vertebra still persist, due to loss of vertebral body height and realignment after the initial surgery. Additional procedure for achieving stability for the vertebrae is advocated. Again, the percutaneous vertebral augmentation procedure does provides anterior support avoiding corpectomy, minimizes blood loss, and also the duration of surgery for anterior stabilization. The reason for stand alone failed is due to inadequate stabilization in DGOU type 4,

inadequate osteoporosis treatment prior to initial surgery and inadequate spinal immobilization post operative ( example : brace ).

### Figure 1: Post operative X ray (reconstitution of Vertebral height and kyphosis correction)



### Figure 2: 5 months post operative (retropulsion of the posterior bone fragment causing stenosis)



### Figure 3: X-ray post PSIF with decompression of L1



### REFERENCES:

1. Oujie Lai, Long-segment fixation VS short-segment fixation combined with kyphoplasty for osteoporotic thoracolumbar burst fracture, BMC Musculoskeletal Disorders volume 23, 2022
2. Katharina A.c Oswald, Anterior thoracolumbar column reconstruction with the vertebral body stent—safety and efficacy, European spine Journal ( 2023 )
3. Deepak Joshi, Time to revisit contraindications of vertebroplasty- A retrospective study of osteoporotic burst fracture operated with vertebroplasty and short segment fixation, North American Spine Society Journal (NASSJ)Volume 10, June 2022