

RADIOLOGICAL OUTCOME OF VERTEBRAL STENTOPLASTY: A SINGLE CENTRE EXPERIENCE

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INTRODUCTION:

Vertebral body compression fractures often leads to major morbidity and reduced quality of life. The goal of treatment is to relieve pain and postural impairment.¹ Vertebroplasty or balloon kyphoplasty in cases of failed conservative management was first introduced, however, loss of vertebral body height and realignment after balloon deflation encouraged the development of vertebral stentoplasty.²

REPORT:

Between January 2019 and December 2020, 8 patients with informed consent who underwent vertebral stentoplasty, either single or multilevel have been retrospectively demographically and radiologically evaluated. All patients underwent single stage surgery by a single lead surgeon. Small balloon catheter surrounded by a metal stent is inserted into the vertebral body percutaneously, into which bone cement was injected. Pre and post-operative radiographs evaluated.

AGE	SEX	DIAGNOSIS	OPERATION	KYPHOTIC ANGLE REDUCTION(%)	VERTEBRAL BODY HEIGHT (%)
61	F	OSTEOPOROTIC VERTEBRAL COMPRESSION FRACTURE T12	STENTOPLASTY T12	38	78
60	F	OSTEOPOROTIC VERTEBRAL COMPRESSION FRACTURE T11	STENTOPLASTY T11	31	75
73	F	OSTEOPOROTIC VERTEBRAL COMPRESSION FRACTURE L1 & L3	STENTOPLASTY L1 AND L3	7.6	32
39	F	SPINE METASTASIS L2	STENTOPLASTY L2	56	95
71	F	OSTEOPOROTIC VERTEBRAL COMPRESSION FRACTURE T12	STENTOPLASTY T12	54	90
68	F	VERTEBRAL COMPRESSION FRACTURE T6, BURST FRACTURE L2/L5	STENTOPLASTY T6, L2 AND L5	18	50
65	F	SPINE METASTASIS T12, L2 AND L5	STENTOPLASTY T12, L2 AND L5	95	98
63	F	OSTEOPOROTIC VERTEBRAL COMPRESSION FRACTURE L1	STENTOPLASTY L1	11	45

Table 1: Post-stentoplasty January 2019 and December 2020

7 patients between the ages of 60 to 71, except one younger patient aged 39 with vertebral compression fracture secondary to spine metastasis were evaluated. 2 out of 8 patients underwent stentoplasty for vertebral

compression fracture secondary to spine metastasis whereas the rest for osteoporotic compression fractures.

Retrospective radiological assessment of all 8 patients reveals a minimum of 30% reduction in kyphotic angle in 25% of patients and more than half (50%) reduction in 37.5% of patients. Up to 62% of patients showed increase in vertebral body height post stentoplasty.

CONCLUSION:

We report a good outcome with the usage of stentoplasty in cases of vertebral compression fractures, be it in osteoporotic, traumatic or metastasis. The expanded rigid stent construct keeps the created cavity open after balloon deflation until cement is injected and cured, which increased mechanical stability.² We look to further evaluate objectively for a better outcome analysis in the coming years.

REFERENCES:

1. Martín-López JE, et al. Stentoplasty effectiveness and safety for the treatment of osteoporotic vertebral fractures: A systematic review. *Orthop Traumatol Surg Res* (2015)
2. Diel et al. *BMC Musculoskeletal Disorders* 2013, 14:233