

Minimally invasive vertebral column resection partially corrects thoracolumbar kyphosis Hazem Eltahawy MD, PhD, FRCS, FACS Associate Professor of Neurosurgery Wayne State University/ Detroit Mrdical Center



Introduction

Vertebral column resection is a major reconstructive procedure used in deformity correction. In this study, we demonstrate that Minimally invasive corpectomy and reconstruction provides partial correction of spinal kyphotic deformities secondary to various pathologies.

Methods

Clinical Case series of 10 patients undergoing minimally invasive lateral extra-cavitary vertebral column resection and anterior column reconstruction between 2008-2013 in a single institution. Clinical and radiological follow up was performed. Pre and post op angles in the sagittal plane were calculated using Surgimap deformity software.

Demographics



Results

10 pts age range between 31-92 yrs, 5 m and 5 f. Deformity cause was either due to pathological fracture or infection or acute trauma. Eight patients underwent 1 level corpectomy and 2 patients had 2 level corpectomies. Partial correction of sagittal alignment was achieved in all 10 cases. Eight patients had follow up after 1 year and were included. Mean correction of sagittal angle was 9.3 degrees (range 3-16 degrees)

Pre/ Post angles & redo surgery				
No	preop angle	post op angle	delta	Secondary spinal surgery
1				
2	29	26	3	-
3	20	16	4	-
4	44	35	11	-
5	50	34	16	-
6	13	4	9	Removal of right loose L3 screw at 2 years.
7	42	38	4	-
8	9	19	10	Extension of fusion to C6
9				
10	19	9	10	-
Mean			9.3	

Conclusions

While the primary goal was spinal cord decompression and spinal column stabilization in this small series of patients with secondary deformity, we demonstrate that focal sagittal deformity correction is feasible using minimally invasive vertebral column resection and reconstruction. The complex technique and lack of developed instrumentation limit widespread application to selected cases.



Interbody cage inserted ventral to the dura

Learning Objectives

Understand the clinical settings for use of minimally invasive vertebral column resection. Appreciate the outcomes and degree of sagittal deformity correction using minimally invasive lateral extracavitary approach for vertebral column resection.









Case 9: 66 years old F, severe osteoporosis, fell down 10 steps of

