

Lumbar Radiculopathy in the Setting of Degenerative Scoliosis

MIS Decompression and Limited Correction are Better Options

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KEYWORDS

• Scoliosis • Kyphosis • Intervertebral disc degeneration • Minimally invasive surgery

KEY POINTS

- Corrective surgery for adult spinal deformity is known to be effective but carries elevated potential morbidity whether through an open or minimally invasive technique.
- Stiffness is an adverse effect of long thoracolumbar fusions and may be particularly bothersome for younger and more active patients.
- In certain subgroups such as the very active or very sick, limited decompression or fusion in adult spinal deformity may be an attractive treatment option with fewer complications and potential shorter durability.

INTRODUCTION

The development of surgical treatments for adult degenerative deformity has been one of the biggest advances in spine surgery in the past 20 years. This has been enabled by advances in the understanding of the pathophysiology of disc degeneration and behavior of the human spine during normal and abnormal aging coupled with improvements in implant engineering, anesthetic, critical care, and surgical techniques. This has resulted in a considerable body of evidence based on individual and group case series and large, multicenter retrospective databases supporting the notion that surgery for lumbar adult spinal deformity (ASD) is safe, clinically effective, durable, and even cost-effective in most patients.¹ It

has also become equally evident that treatment of ASD is associated with larger and costlier procedures with complication rates that approach 70% and mortality rates in experienced hands of around 1%.² There are emerging correction techniques that utilize a combination of multiple minimally invasive techniques (MIS). While the resulting combined result can hardly be called minimally invasive, it does offer a considerable decrease in morbidity to rates approaching 30% but also with reoperation rates ranging from 11% to 28%.^{3–6} There is a subgroup of patients in whom a small procedure not addressing the global deformity may be advantageous either as a temporary or definitive treatment. This article's objective is to report who these patients are in the authors' deformity practice, their rationale for not

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offering deformity correction to these patients, and to discuss the data available to support this practice.

CASE EXAMPLE

A 75-year-old woman presents with long-standing back and right leg pain. She has rheumatoid arthritis and is on maintenance oral steroids. She has a clinical diagnosis of osteoporosis due to a prior L5 vertebral compression fracture and was treated 5 years ago with alendronate therapy. On examination, she is overall balanced from an alignment standpoint. She has no neck or arm pain, and her gait is normal, but reflexes are slightly increased in all 4 extremities. She has typical rheumatoid changes in both her hands. Her pain localizes to typical bilateral L5 radiculopathies and has been refractory to physical therapy, activity

modification, analgesics and neuropathic pain modulators, and an L4-5 epidural steroid injection. She had undergone prior L5-S1 laminectomy 15 years prior. Her films show a baseline typical adolescent scoliosis curve with superimposed lumbar degenerative features with overall good alignment (SVA = -10 mm, and C7-CSVL is zero) (Fig. 1). Because of increased reflexes found on examination, a cervical MRI was ordered, which showed a number of segmentation congenital defects along with superimposed arthritic changes with cord compression (Fig. 2). Her lumbar MRI shows diffuse disc degeneration with varying degrees of foraminal and lateral recess stenosis and a complete canal block at L5-S1 (Fig. 3).

This patient adamantly refused a major anterior-posterior cervical reconstruction for her mild cervical myelopathy and was obviously

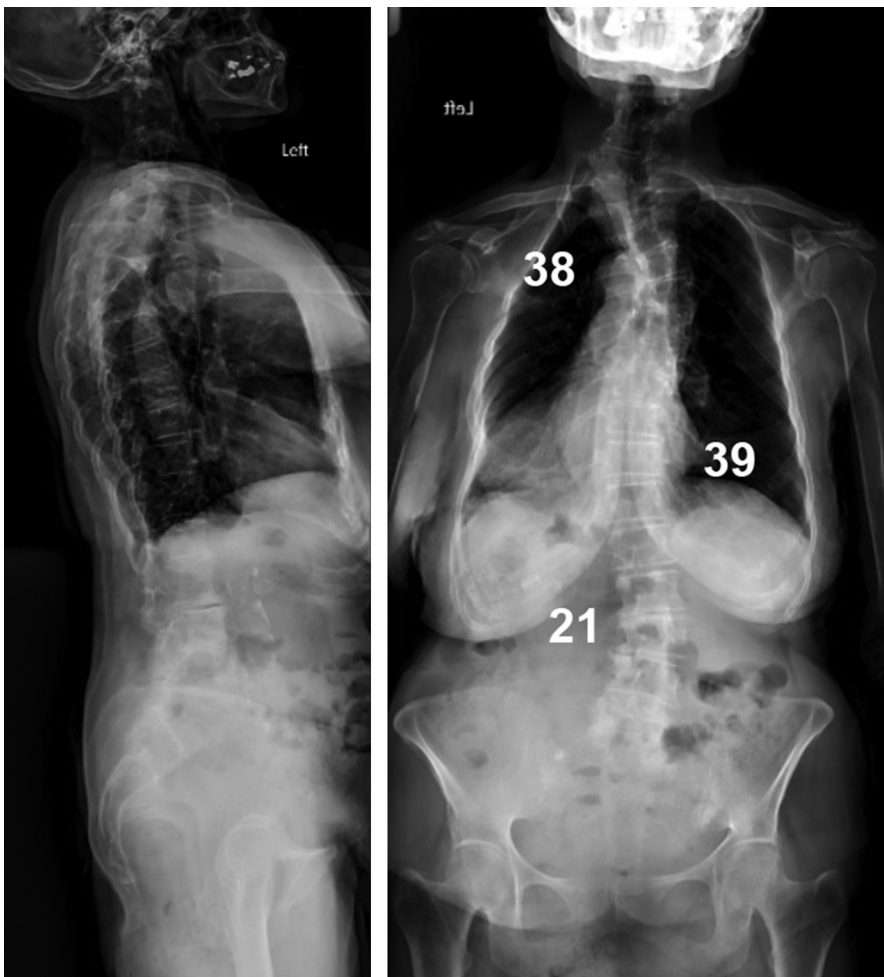


Fig. 1. 75-year-old with adolescent-type coronal curves and superimposed degenerative deformity with balanced parameters (SVA = -10 mm, PI 64° , PT 27° and lumbar lordosis 38°). PI, pelvic incidence; PT, pelvic tilt.

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