

## Reclaiming an Upright Posture: A Novel Surgical Technique

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### INTRODUCTION:

Ankylosing Spondylitis (AS) often leads to severe spinal deformities, presenting intricate challenges in treatment, often affecting an individual's lifestyle, including restricted chest expansion, kyphotic deformity with an increase of chin-brow-angle and hip flexion deformity.

### REPORT:

This is a 58-year-old male with prolonged history of chronic axial back pain and progressive spinal deformity over two decades. Early consultations lacked feasible corrective surgery options due to technological limitations, necessitating a prolonged waiting period. The condition worsened, resulting in thoracolumbar kyphosis of nearly 90 degrees by his 40s. This significantly affected his ability to maintain a horizontal gaze and hindered his daily functioning.

To restore posture and function, a construct-to-construct correction technique was pursued involving 2-Level Lumbar Pedicle Subtraction Osteotomy (PSO) along with Posterior Instrumentation and T10-to-S2-fusion. Positioning the patient for surgery was particularly challenging due to his restricted neck mobility. The PSO at L1 and L4, was supplemented by placing Dual Rod Multi-Axial Screws (DRMAS) adjacent to the PSO levels. The surgical approach aims at correcting the constructs by using multiple small rods positioned to facilitate controlled closure of the osteotomy sites instead of the traditional method of using a single long rod.

Post surgery, Chin Brow Angle and gaze angle improved. Radiograph showed improvements in spinal alignment and angles.

The patient reported enhanced breathing, improved oral tolerance, and resolution of constipation post-surgery. However, intermittent episodes of back pain persisted during the three-month follow-up period.



Figure 1: Pre Operative

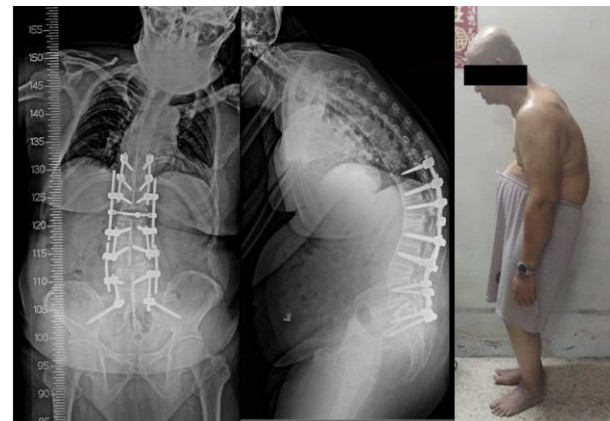


Figure 2: Post Operative

### CONCLUSION:

The primary goal of the surgery was not only to rectify the severe kyphosis but to under-correct it, allowing the patient to maintain horizontal vision and safety while walking, considering the lack of neck mobility.

This case highlights the delicate balance between rectifying severe spinal deformities and addressing functional limitations in AS patients.

### REFERENCES:

1. [https://journals.lww.com/jbjsjournal/abstract/2003/03000/pedicle\\_subtraction\\_osteotomy\\_for\\_the\\_treatment\\_of.9.aspx](https://journals.lww.com/jbjsjournal/abstract/2003/03000/pedicle_subtraction_osteotomy_for_the_treatment_of.9.aspx)