

KSSS 2026

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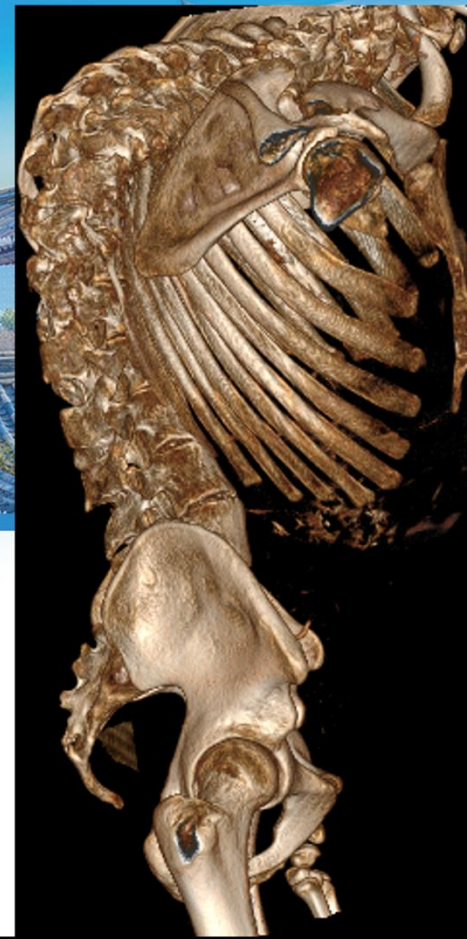


Temporary Internal Distraction

A Softer Approach to Severe Rigid Kyphoscoliosis

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V: 332

IP

L-R:

Case Summary

- Early onset scoliosis diagnosed at 7 years old
- Bracing started at the age of 9
- Lost to follow-up during the pandemic
- Presented at age 16 years old with severe Kyphoscoliosis

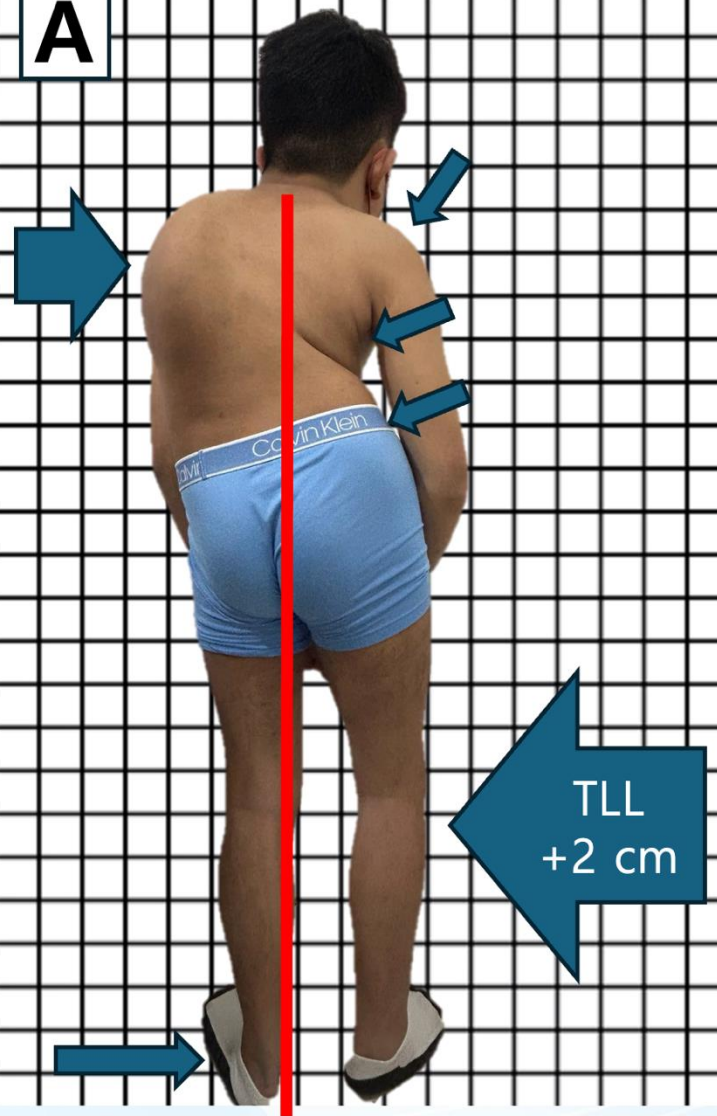


Other clinical data:

- Slightly hyper-reflexive knee and ankle jerk pre-operatively
 - Beginning myelopathy
 - No tethered cord on MRI; No congenital spinal cord anomalies
- Cleared by pediatric pulmonology
 - PFT showed severe hyperinflation
 - *obstructive type not restrictive type*
- Pedia Nephro : for renal biopsy
 - Slightly elevated creatinine

At 17 years old in 2025

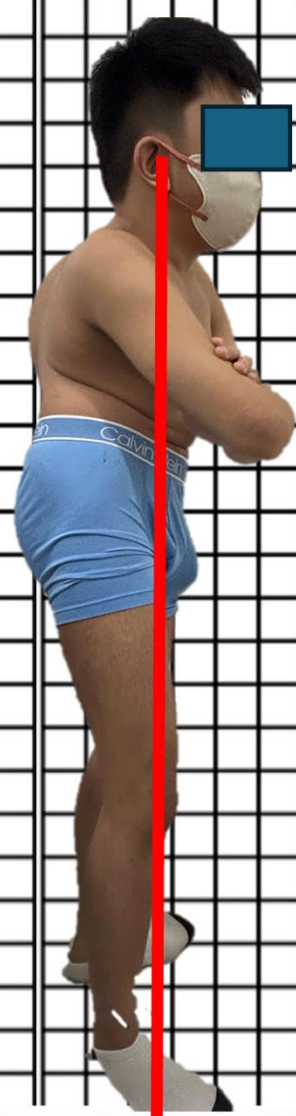
A



B



C



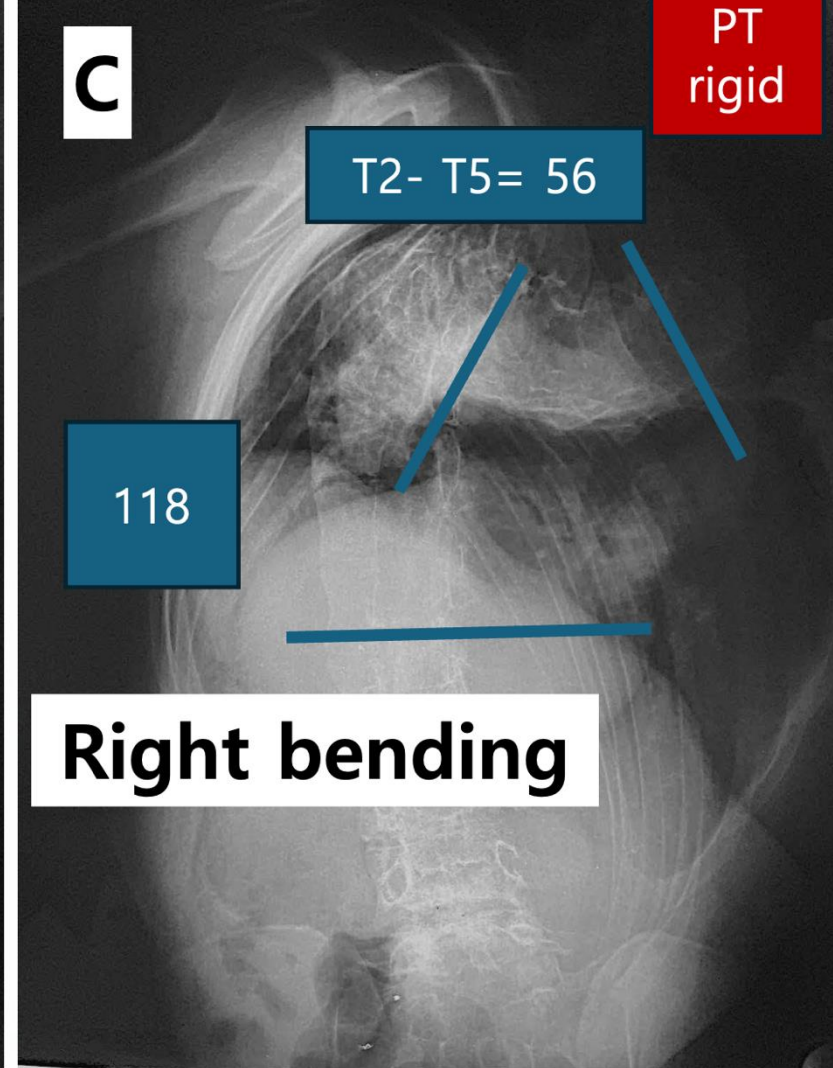
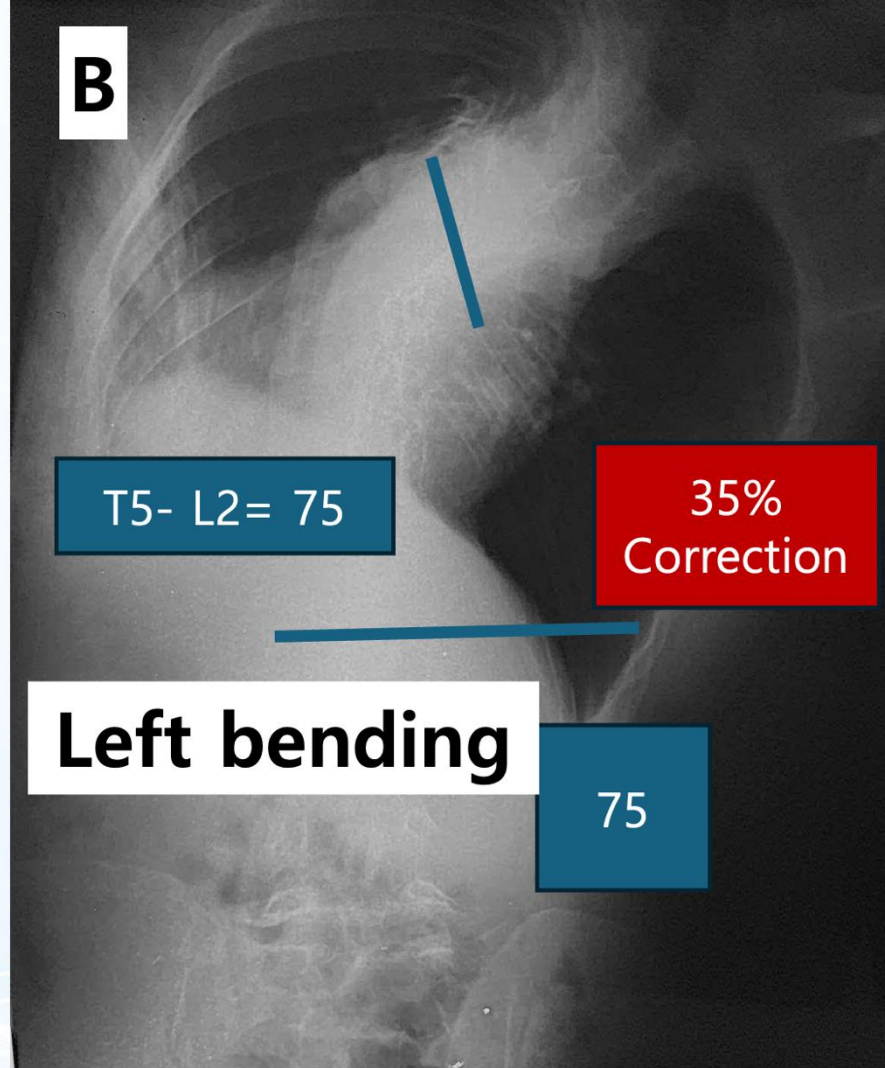
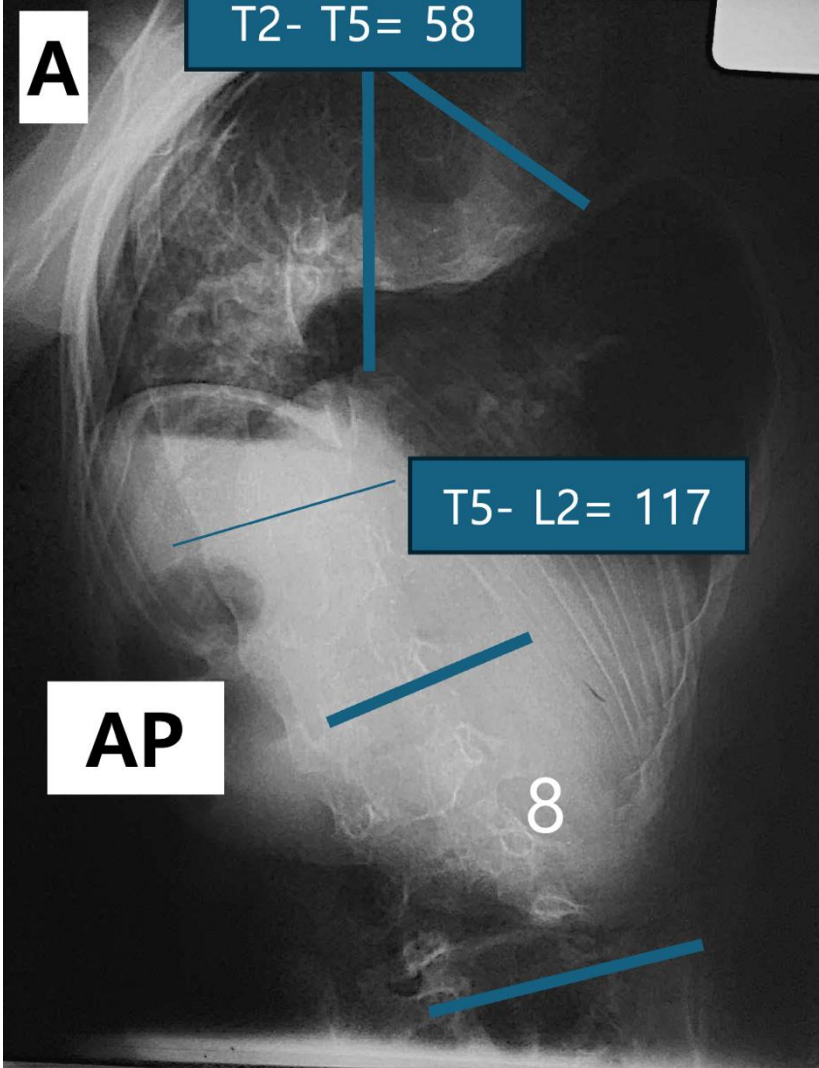
D



A. Clockwise: Right shoulder lower; skinfold on the concavity; right pelvis higher; right leg 2 cms longer; left foot eversion aggravating that discrepancy; kyphoscoliosis

B,C Smooth round kyphosis, ribs abutting the pelvis on the left, center of gravity slightly anterior on the sagittal plumbline

D. Scoliometer of 36 degrees.

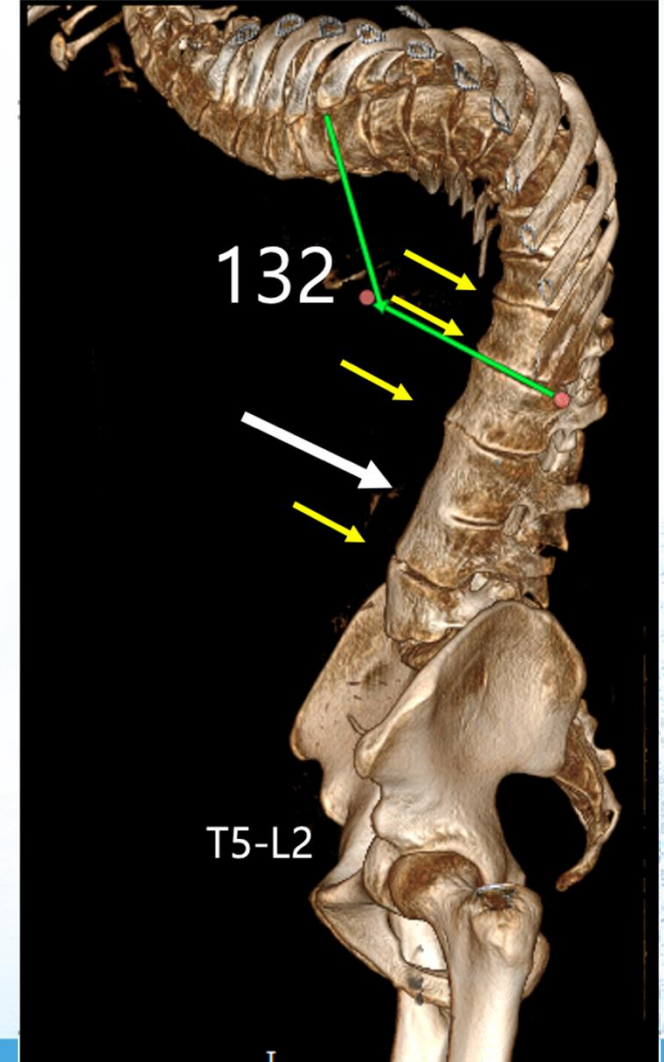
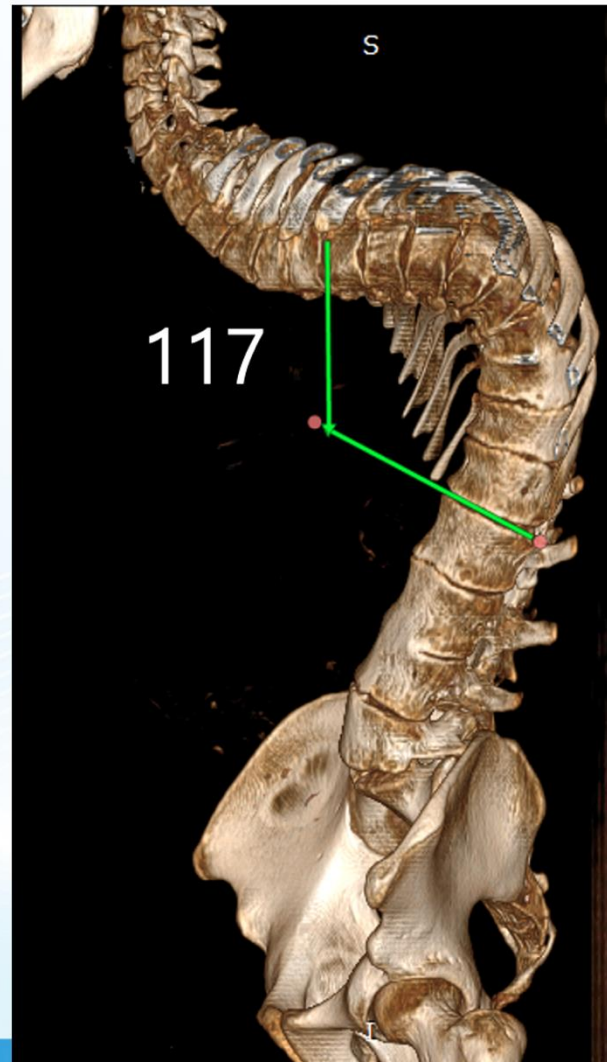


Bending films 11 months prior to surgery

Candidate for TID

- Fusion anteriorly L3-4(→)
- Rudimentary vertebral discs but no fusion aside from L3-4 (→)
- Absence of fused ribs or bar
- Some flexibility noted (bending films)
- Absence of tethered cord (MRI)

Kyphosis progression 11 months until immediate pre-op



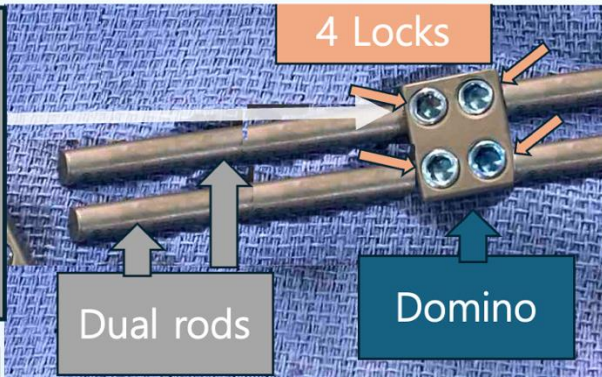
Temporary Internal Distraction (TID) Construct

Cephalad Anchors

Hooks at
4th and 6th ribs

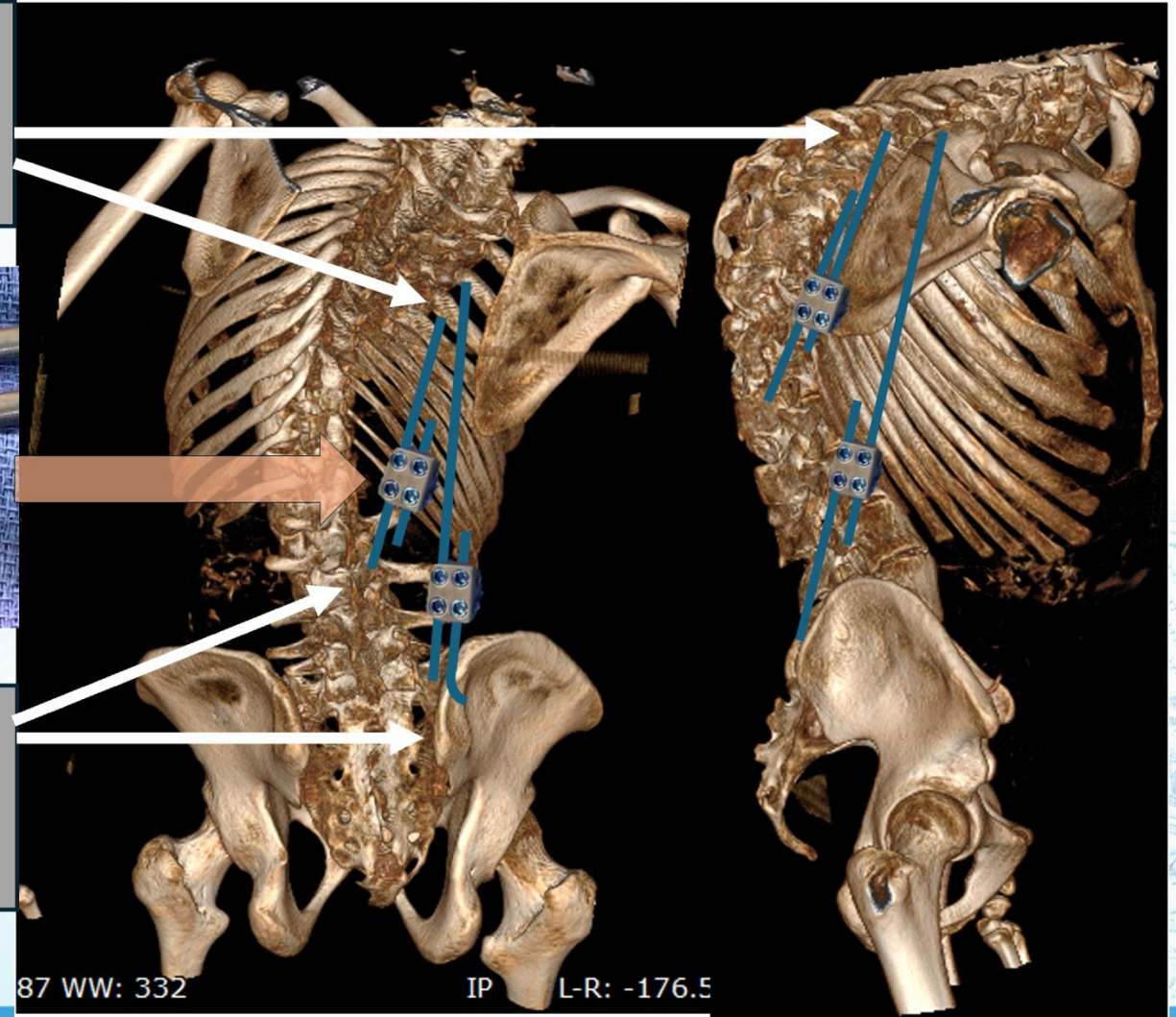
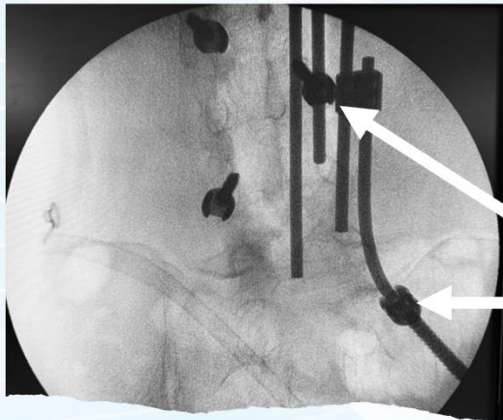
The Motor

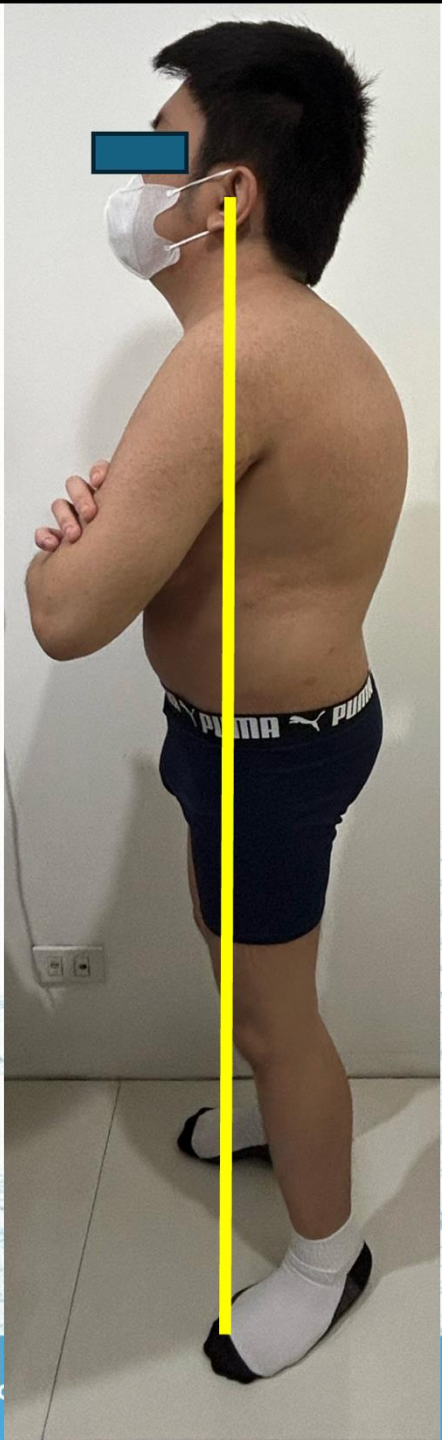
Release Domino lock
on one rod to do
serial distractions



Caudal Anchors

Screw at L3 Pedicle
and Ilium

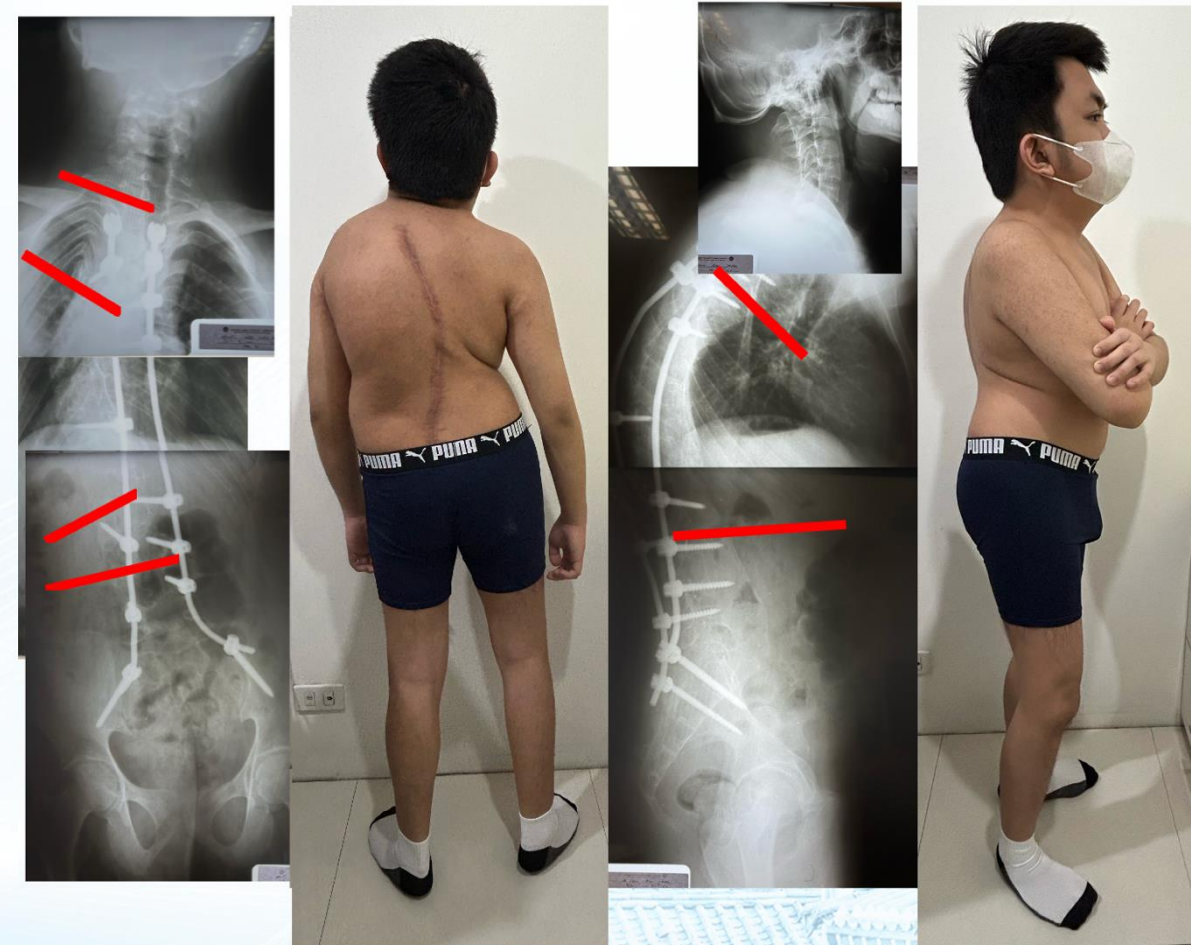




Results

Spine segment	Pre-op	Post-op 1 week	2 mos	6 mos
Proximal thoracic	58	19	22	10
Main thoracic	111	52	56	57
PA T5-L2	117	63	62	43
T5-L2 kyphosis	132	58	61	47

X-ray and Clinical Photos at 6 months



Results

- Total operative time = 16 hours and 47 minutes
- Blood loss = 2.5 liters
- Intra-operative challenges
 - Fracture of the 6th rib during the tail end of the distraction process
 - Slight in dip of the neuromonitoring process
- Total hospital stay = 13 days (3 days of which spent in ICU for close post-operative monitoring)
- Ambulatory with no assist at 2 months
- Resolution of hyperreflexia on 2nd month follow-up

Conclusion and Recommendation

- Temporary Internal Distraction (TID)
 - Can be safely done as single stage
 - Obviates the need for vertebral column resection
 - Ideal for multisegmental deformities rather than short rigid curves
 - Ideal in the absence of structural abnormalities like rib fusion and congenital vertebral anomalies
- Recommendations
 - Two surgeon collaboration can shorten surgery, decrease blood loss, and may improve outcomes
 - Two stage surgery is an option and shown to give greater correction percentage