EARLY ONSET SCOLIOSIS TREATED WITH GROWING RODS HAS A GREATER INCREASE IN T1-S1 LENGTH, BETTER COBB CORRECTION, BUT MORE THAN TWICE THE NUMBER OF SURGERIES COMPARED TO SHILLA

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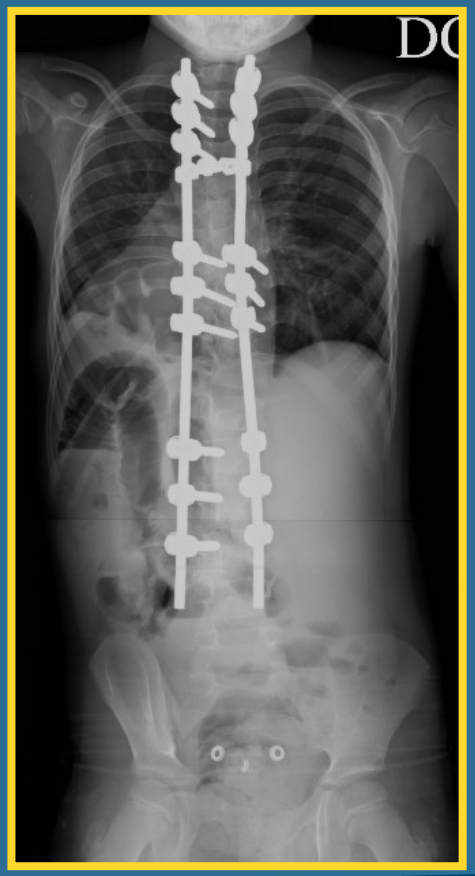
Study Purpose

To compare the treatment of early onset scoliosis with Shilla versus dual growing rod constructs



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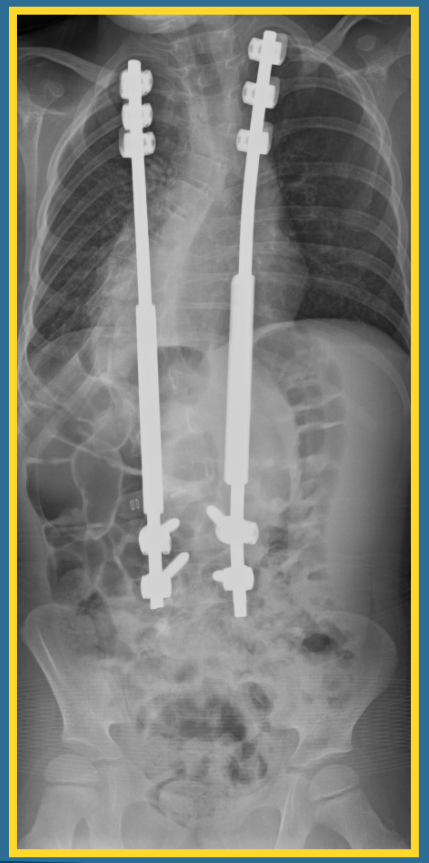

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Materials and Methods

Multicenter retrospective review

Inclusion criteria:

- Diagnosis of early onset scoliosis
- Shilla or **dual** spine-spine growing rod instrumentation
- Minimum two year follow up

Exclusion criteria:

- Prior instrumentation
- Index procedure ≥ 10 yo

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Materials and Methods

37 Shilla patients were matched with 37 dual growing rod patients from the Growing Spine Study Group database by:

- Age at index surgery
  (±1 year)
- Preoperative Cobb angle
  (±15°)
- Diagnosis
  (neuromuscular, congenital, idiopathic, syndrome)

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Results

- Mean age at the time of the index procedure was 6.0 years in the Shilla group and 6.1 years in the growing rod group

- Mean radiographic follow up was 4.6 years in the Shilla group and 4.3 years in the growing rod group (p=0.35)

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Results: Mean T1-S1Length

	Shilla (cm)	Growing Rod (cm)	P-value
Preoperative	29.0	26.5	P=0.0224
Post Index Surgery	32.5	30.0	P=0.0103
Final follow up	35.4	35.2	P=0.9071
Change during "growth period" (post index surgery to final follow up)	2.8	5.3	P=0.0045
Overall change (from preoperative to final follow up)	6.4	8.7	P=0.0131

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Results: Summary

	Shilla	Growing Rod	P- value
Average change in cobb angle	-24 degrees	-35 degrees	0.019
Average change in T1-S1	6.4 cm	8.5 cm	0.031
Total # of surgeries per patient	2.8	7.0	<0.001

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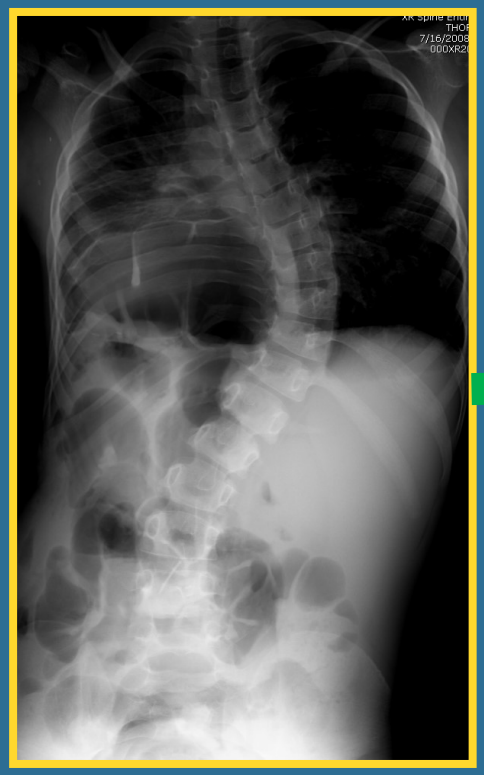
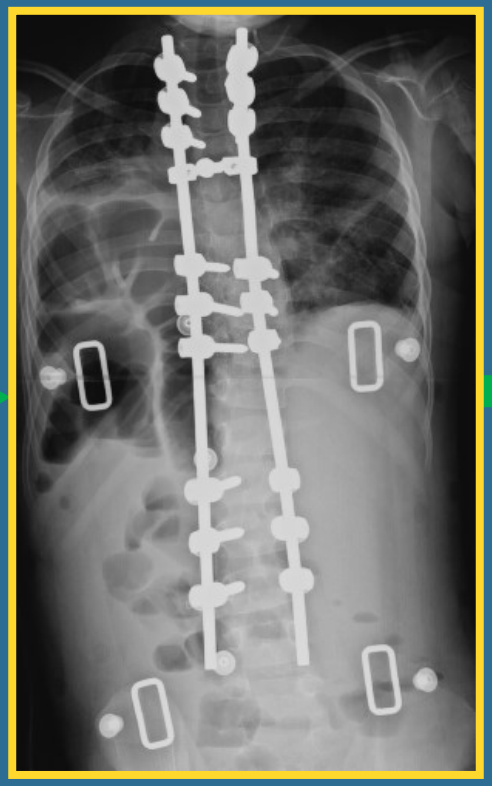
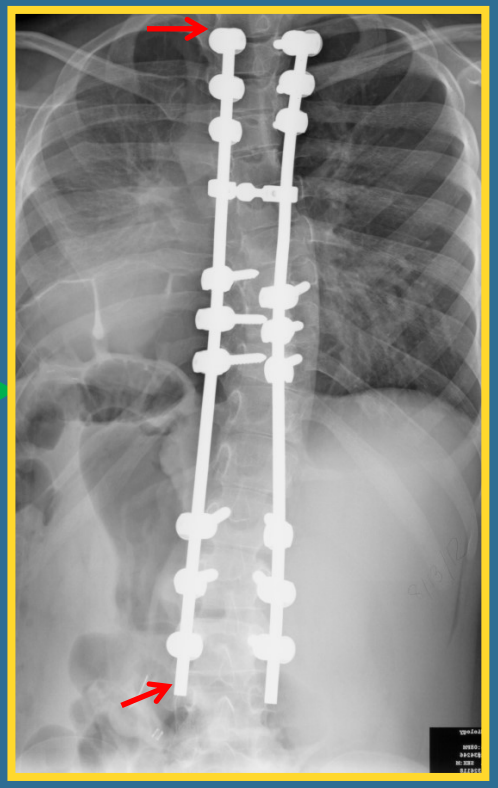
Results



PREOPERATIVE



POSTOPERATIVE



FINAL FOLLOWUP

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Discussion

Study Limitations

- majority of patients have not reached skeletal maturity or had a definitive fusion
- possible selection bias in which technique was performed
- Shilla procedure is newer and this group includes initial patients in which surgeons were gaining familiarity with this technique
- Retrospective Database

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Conclusion

In this case matched series of EOS patients treated with Shilla versus Growing Rod constructs

Less increase in T1- S1 length

Similar complication rate

Fewer surgeries

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