Shilla Growth Guidance System for the Treatment of Scoliosis in Children:

Greater than two year follow-up

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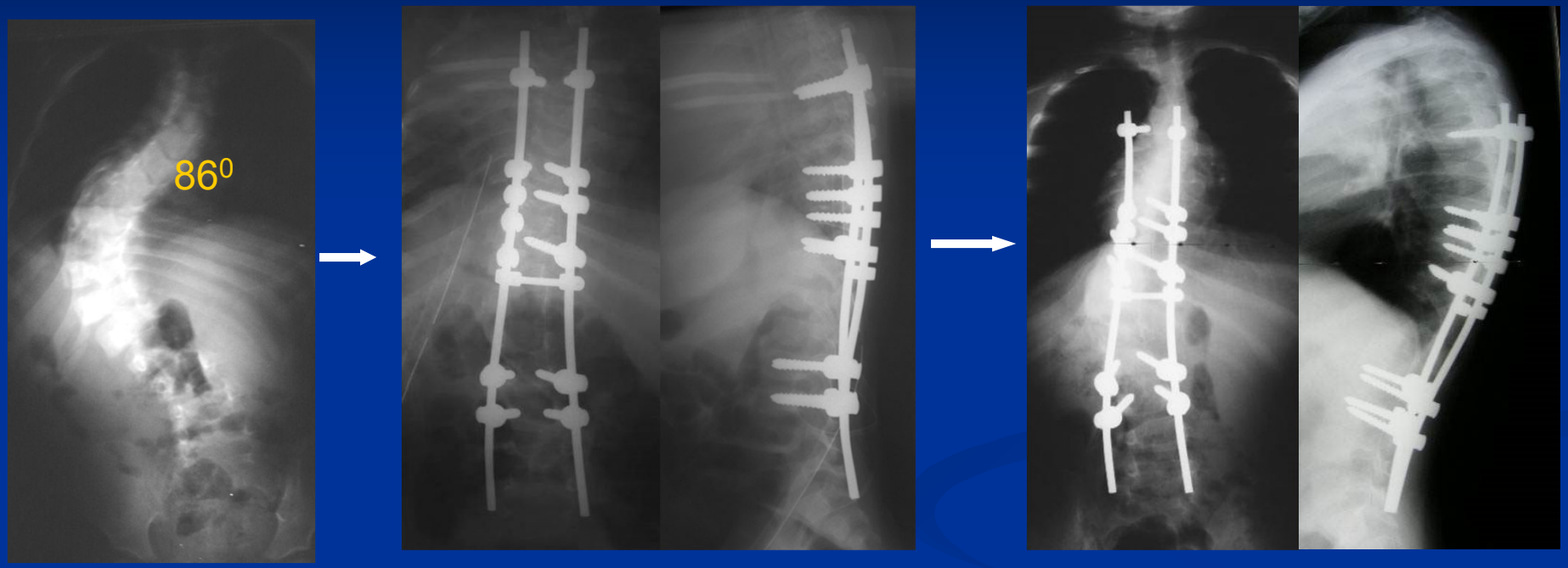
Shilla Growing Rod System



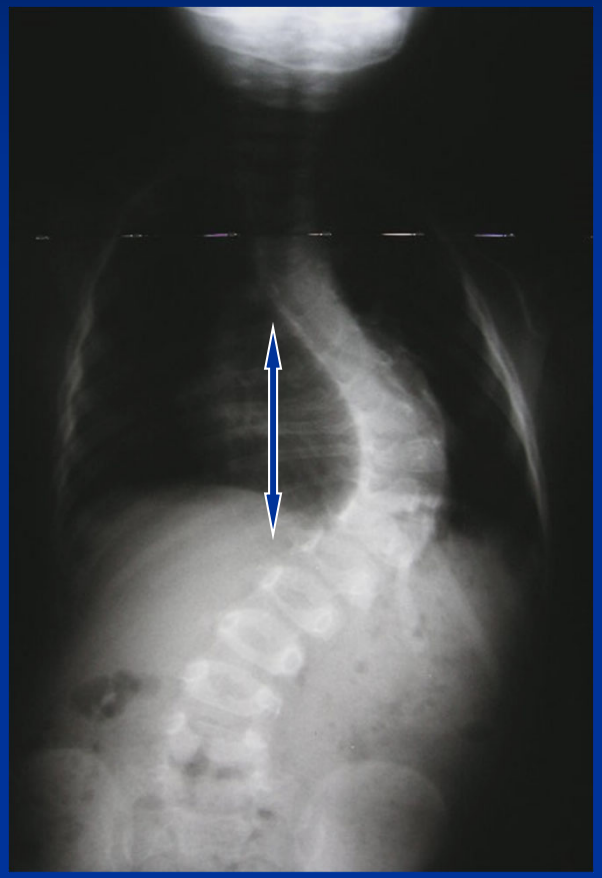
Preop

Immediate Postop

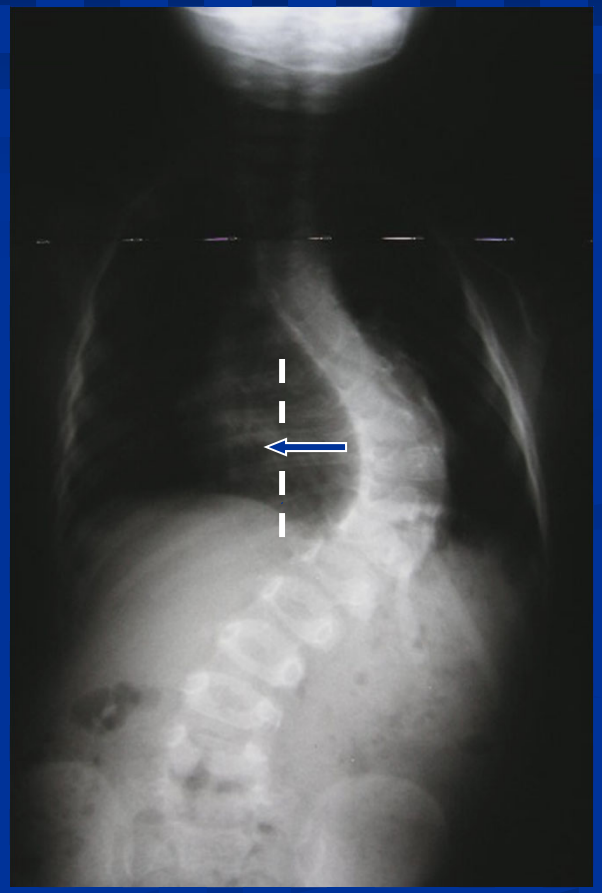
3 1/2 yrs postop

Involves an index surgical procedure that allows continued spinal growth without repeated lengthenings

Shilla Concept

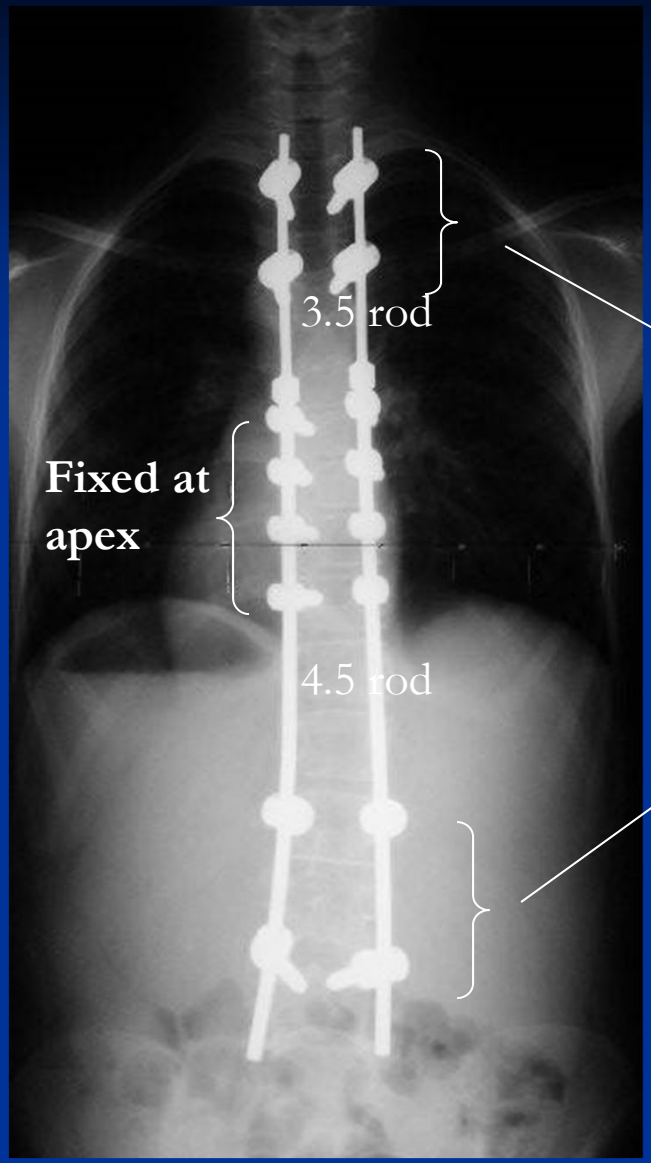


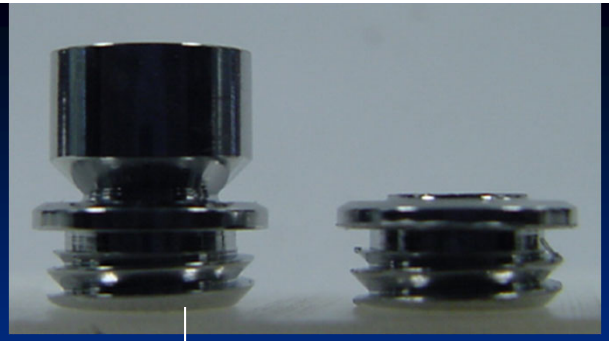
VS



Traditional “Growing Rods”
Based on distraction

Shilla corrects apex
Guides ends of curve





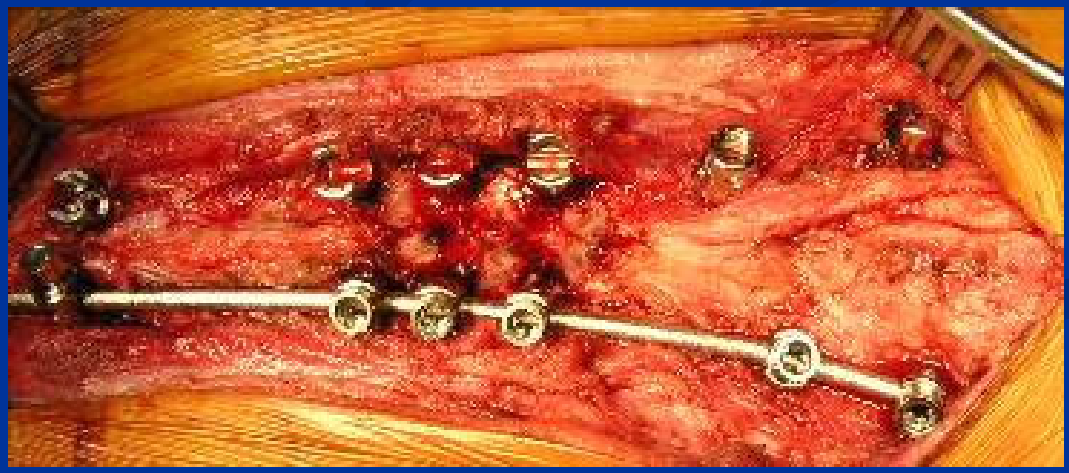
Shilla cap

Polyaxial screw

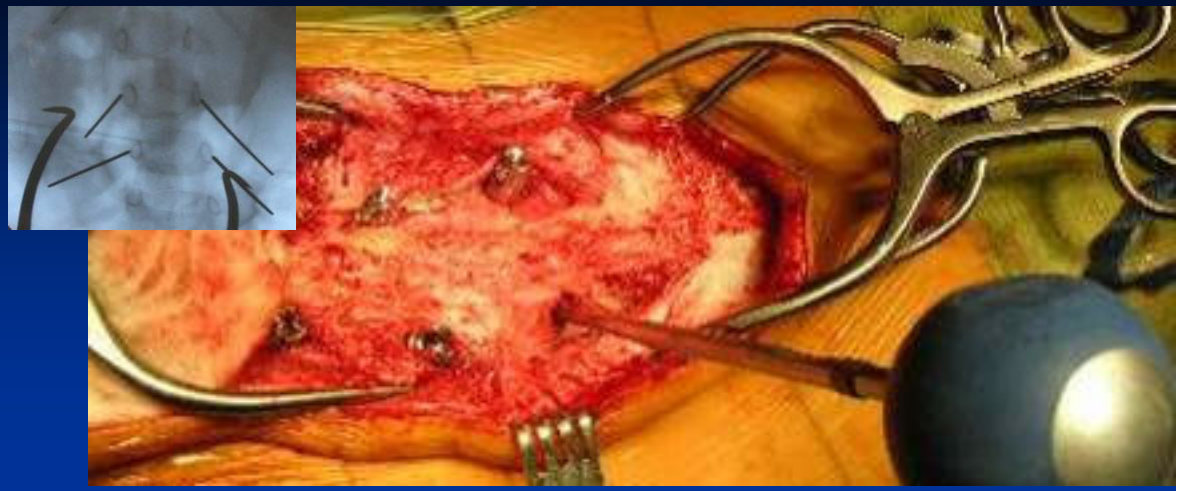
Shilla Growing Screws Avoid repeated lengthenings

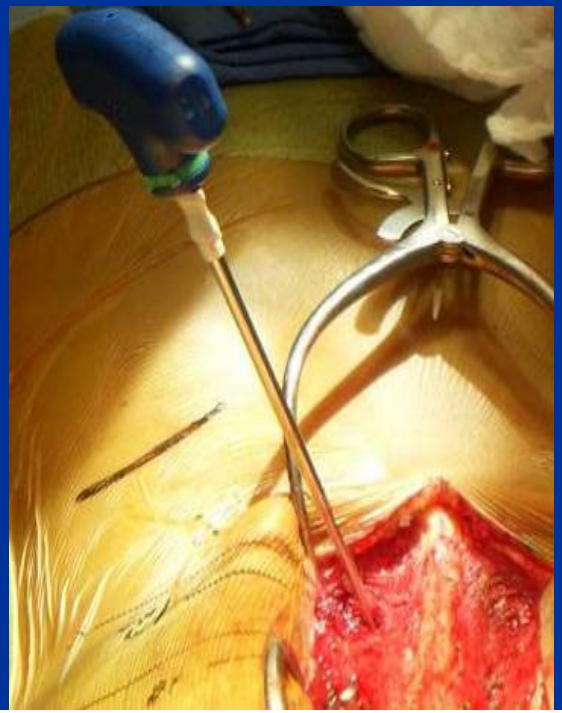
Surgical Techniques

- Subperiosteal exposure of apex only

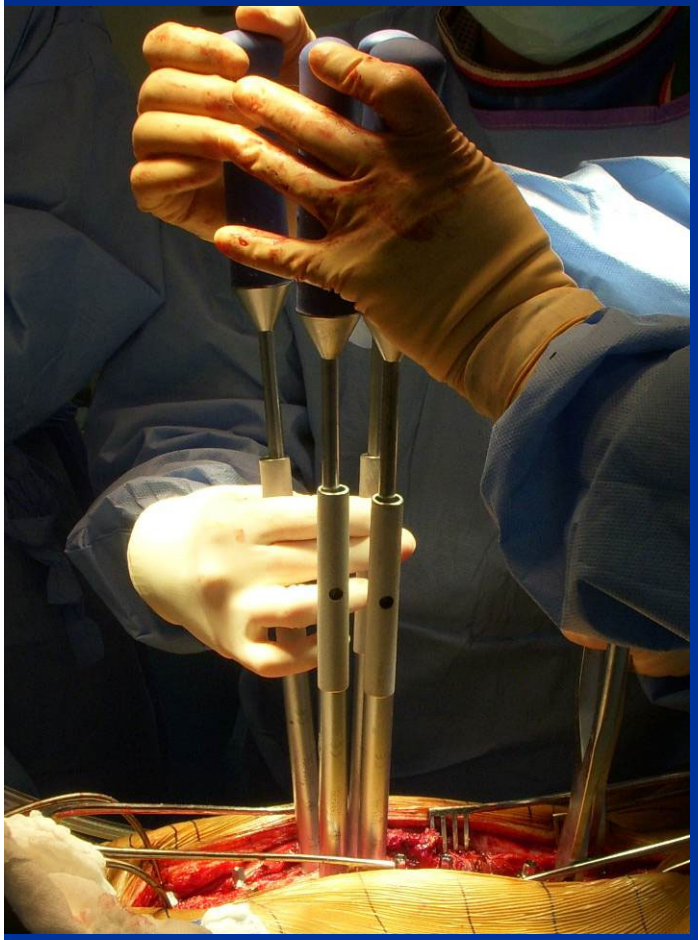


Subfascial exposure for Placement of Shilla Growing Screws

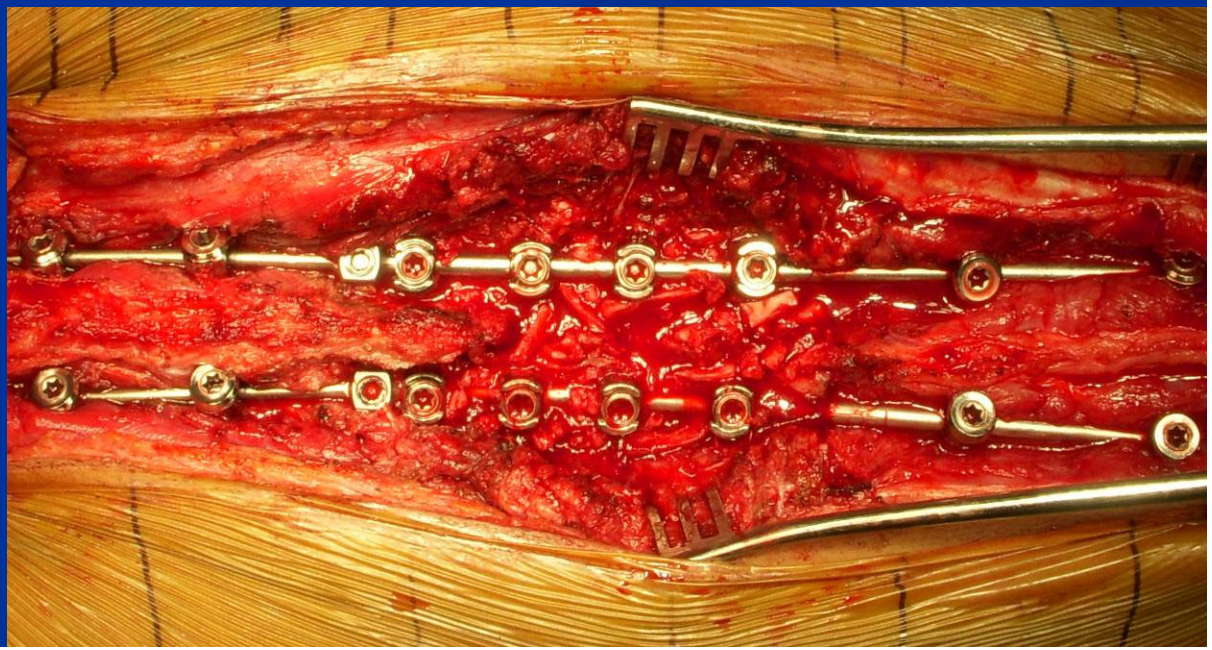




Surgical Technique



Apical fusion with
complete correction
In all planes



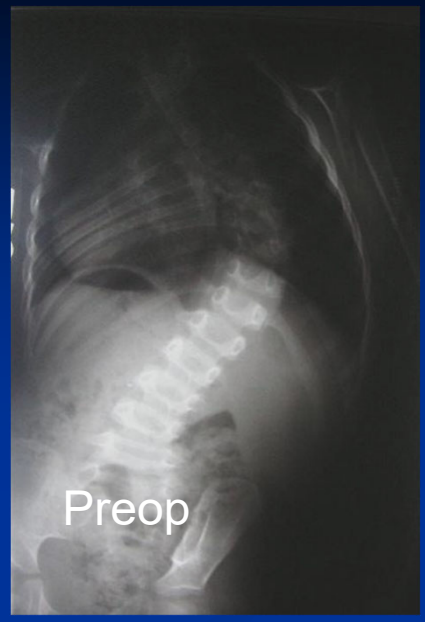
TLSO
for
3 mo
post op

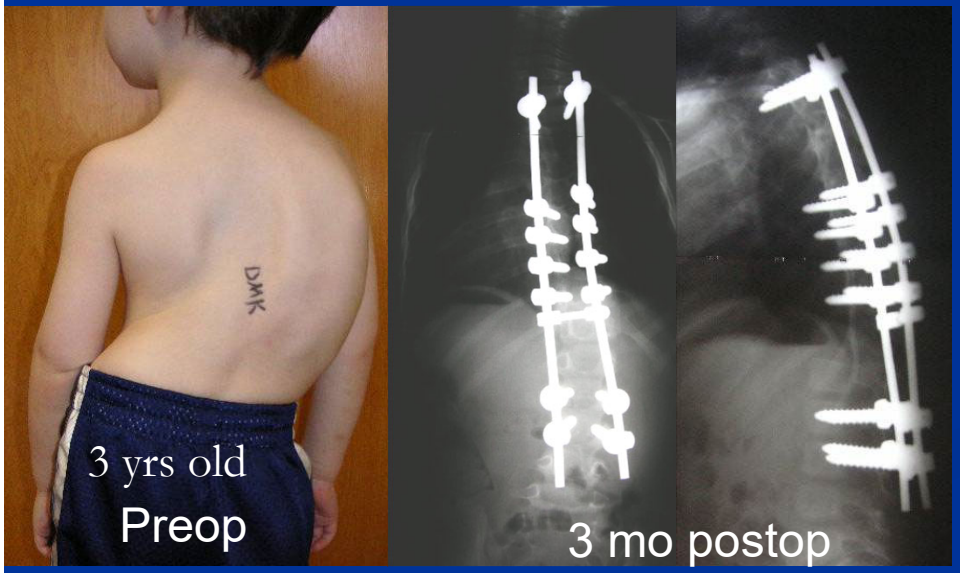
Method

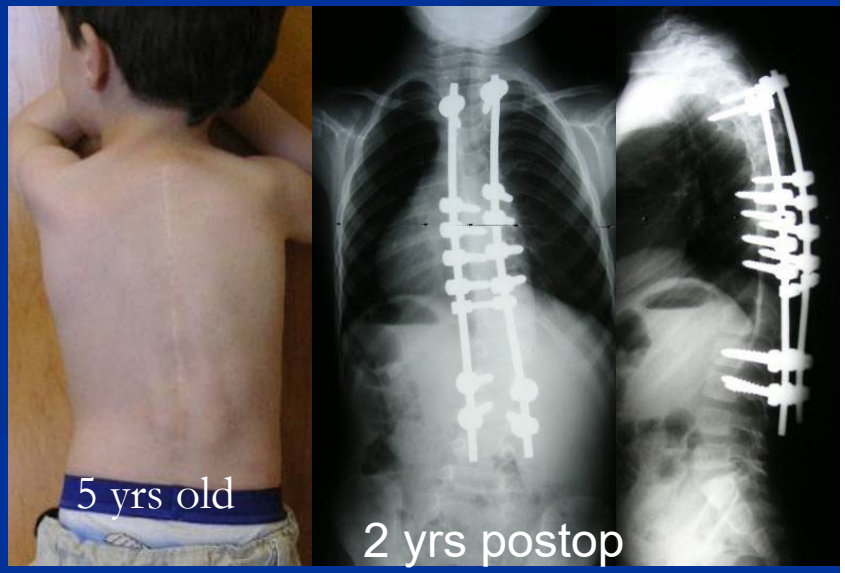
- **Ten** patients (from cohort of 36) with greater than 2 yr. follow-up (2-3 yr)
- Mean age **7+6 yrs** (2-10 yrs)
- Scoliosis
  - Average preop curve **70.5 degrees** (40-86 degrees)
- Multiple Diagnoses
  - Infantile idiopathic scoliosis (2)
  - Congenital scoliosis (1)
  - Prader-Willi syndrome (1)
  - Neuromuscular scoliosis (2)
  - Myelomeningocele (1)
  - Intraspinal lesion (1)
  - Beale's syndrome (1)

Results

- Postoperative curve average:
  - 27 degrees at 6 wks
  - maintained at 34 degrees at 2 yrs
- SAL improved an average 13%
- Truncal height (T_1 to S_1) ↑ an average 12%

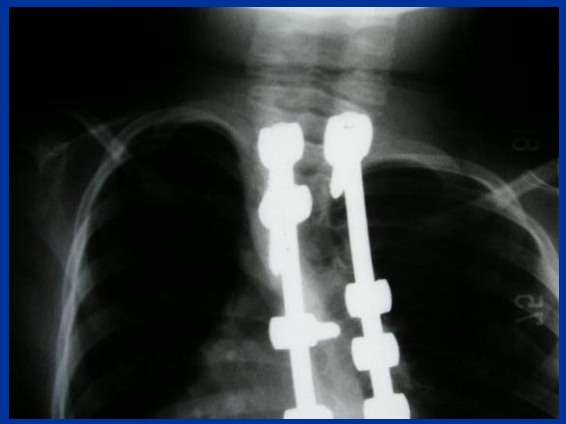


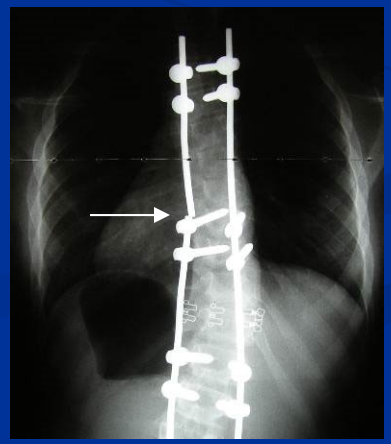




Results (cont.)

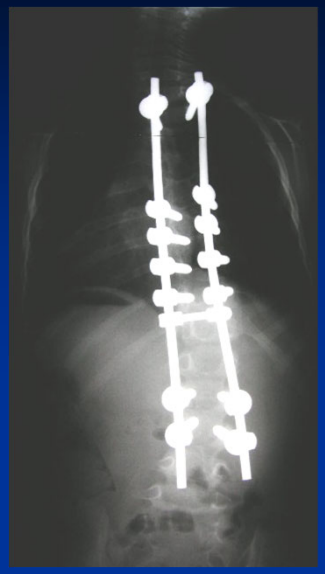
- Surgeries beyond index procedures **(5)**
  - Rod revisions (3)
    - 1 grew off the end of the rod
    - 1 rod change to a smaller size due to prominence
    - 1 rod replacement due to a broken rod
  - Wound debridement (2)
    - 2 pts had low-grade infections in the early postoperative period (washed out, left implants)





Comparison of cohort with traditional growing rod technique (if treated thu

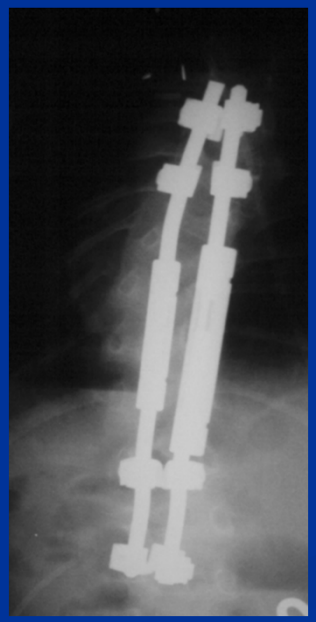
Shilla



5 **Procedures beyond index**

VS

Traditional Growing Rod



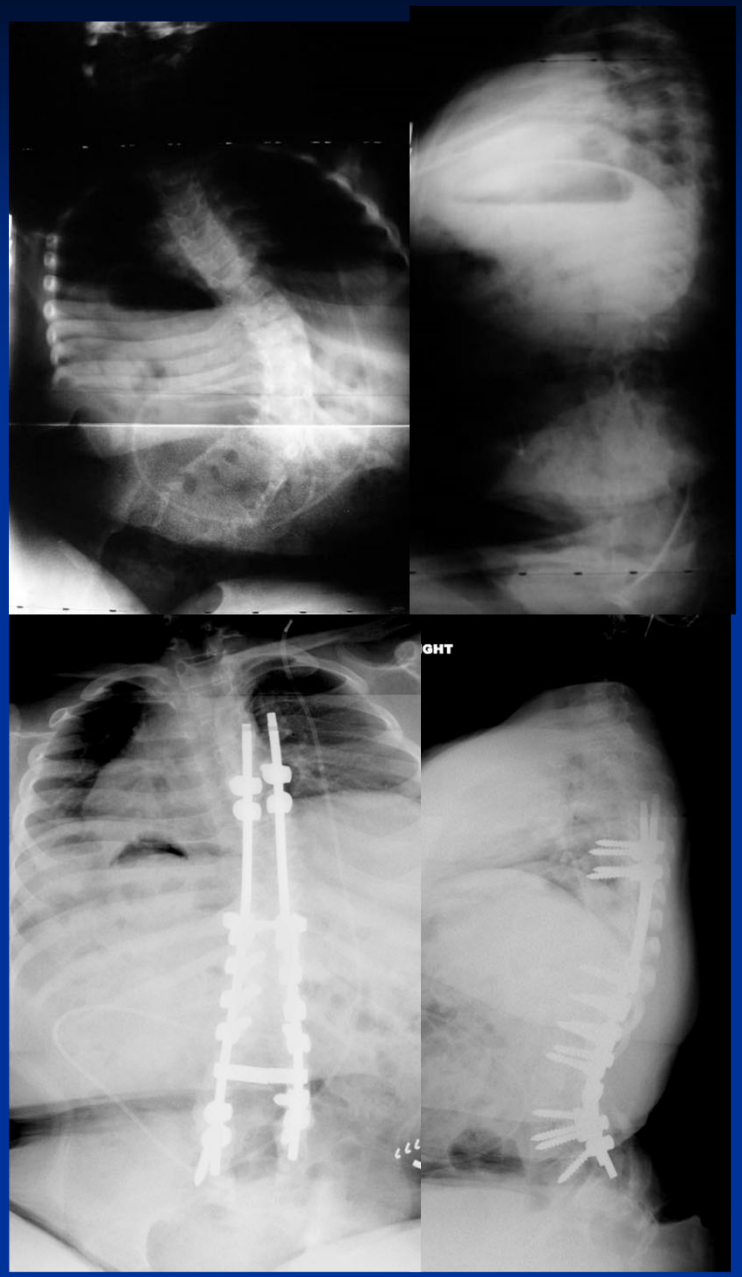
49 **Procedures beyond index**

Infantile idiopathic

Preop

3 ½ yrs postop

Spina bifida



3 yrs postop

EXAMPLES

Congenital

3 yrs postop

Conclusion

- The **Shilla** procedure allows children correction of their spinal deformity and brace-free growth without repeated trips to the operating room for lengthening.
- Curve correction has been maintained as growth has continued at 2yr F/U
- Complication rate has been acceptable.
- It is applicable for multiple diagnoses.