Disclosures

S. Schelfaut: None

J. Dermott: None

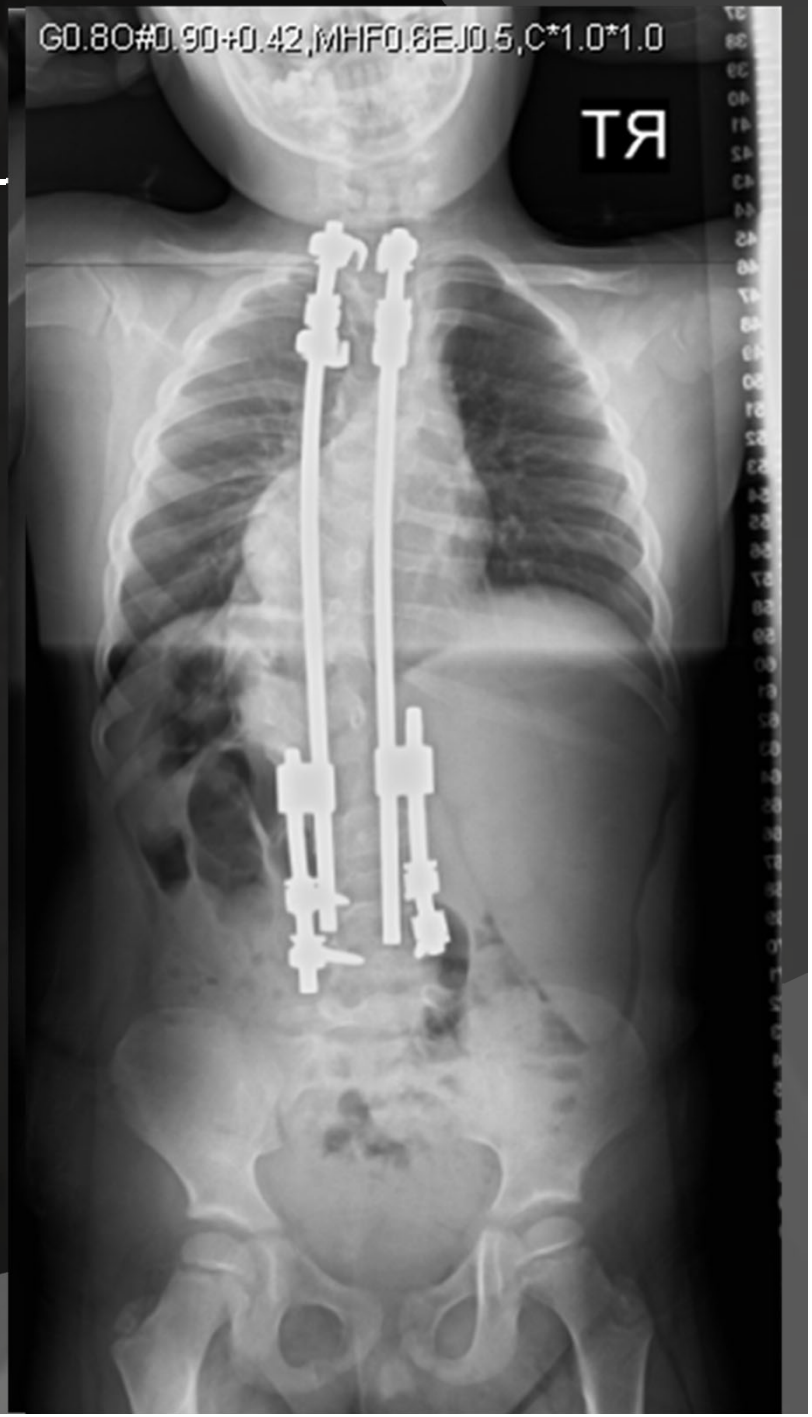
R. Zeller: F; Spinevision_Paradigm Spine

Background: Modern dual GR technique

- Successful clinical outcomes
  - Deformity control
  - Spine and thorax growth
- Still high complication rate
  - Hook dislodgement or screw pullout
  - Rod breakage
  - Infection

Study Purpose

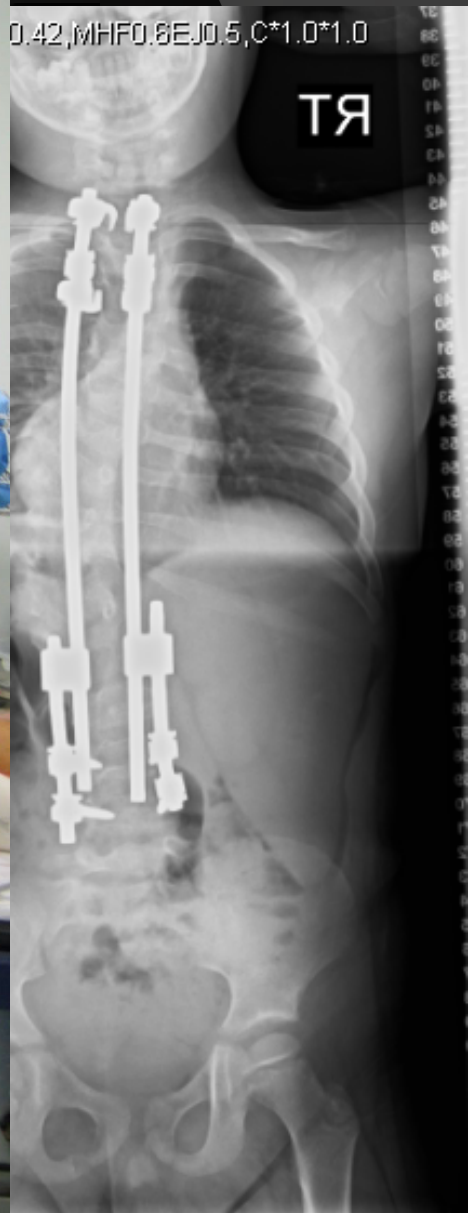
- Concept of the staged "end fusion technique" (SRS,Marchetti & Faldini 1977) to enhance stability of the implants at the anchor sites

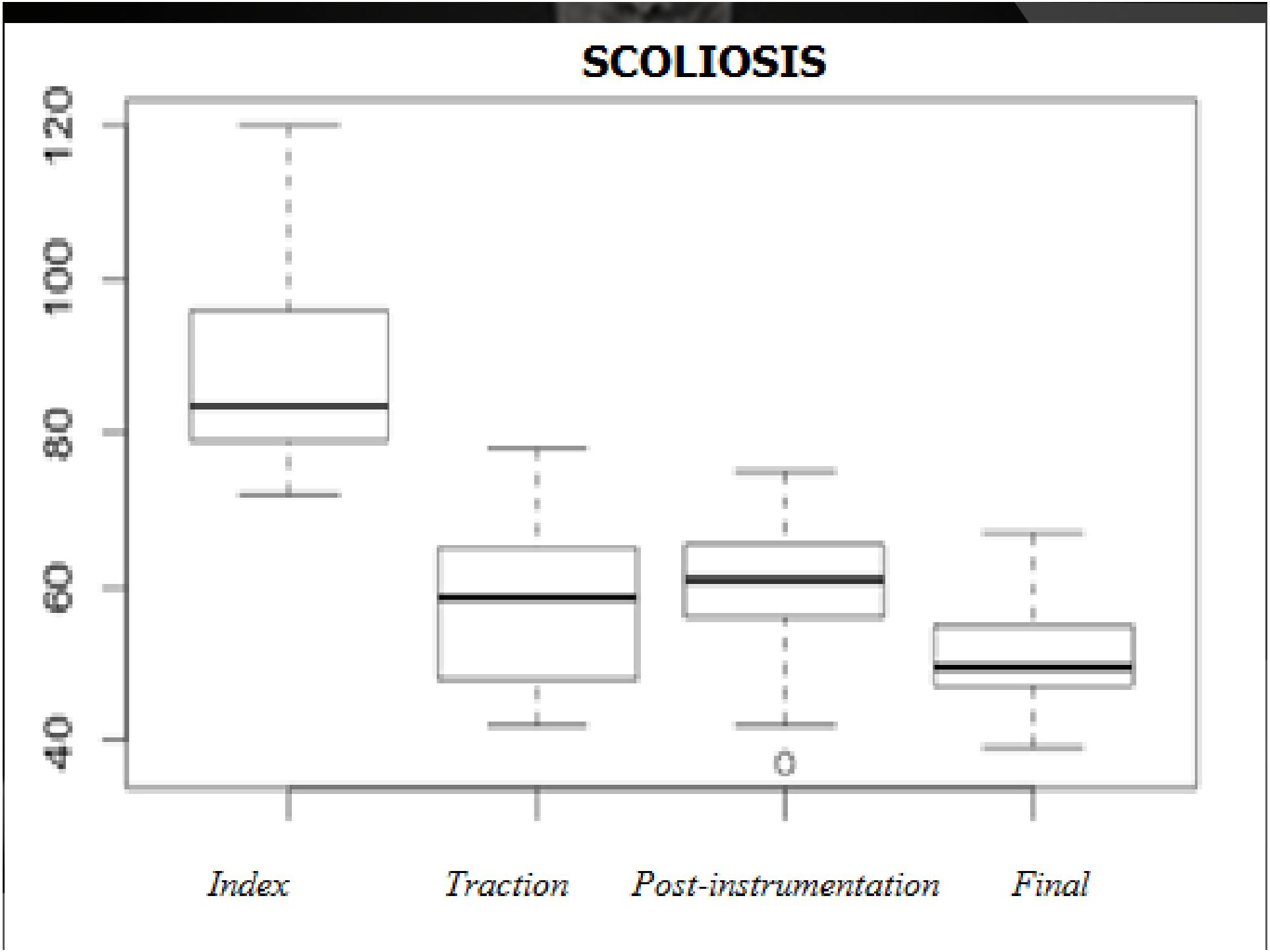


Patient Sample

- 15 progressive severe EOS (mean 7.8 y), modern dual GR.
- Oct 2010-April 2014. Single centre. One surgeon.
- Etiology scoliosis
  - 8 syndromic
  - 4 idiopathic
  - 2 congenital
  - 1 neuromuscular
- 9 patients TWO stage (GROUP B)
  - GROUP A: 6 patients, ONE stage (medical reason)
- Mean FU 24.7 m.
- Lengthening 3.4/patient
- 4 patients final fusion
  - (without anchor change + Tibia autograft)

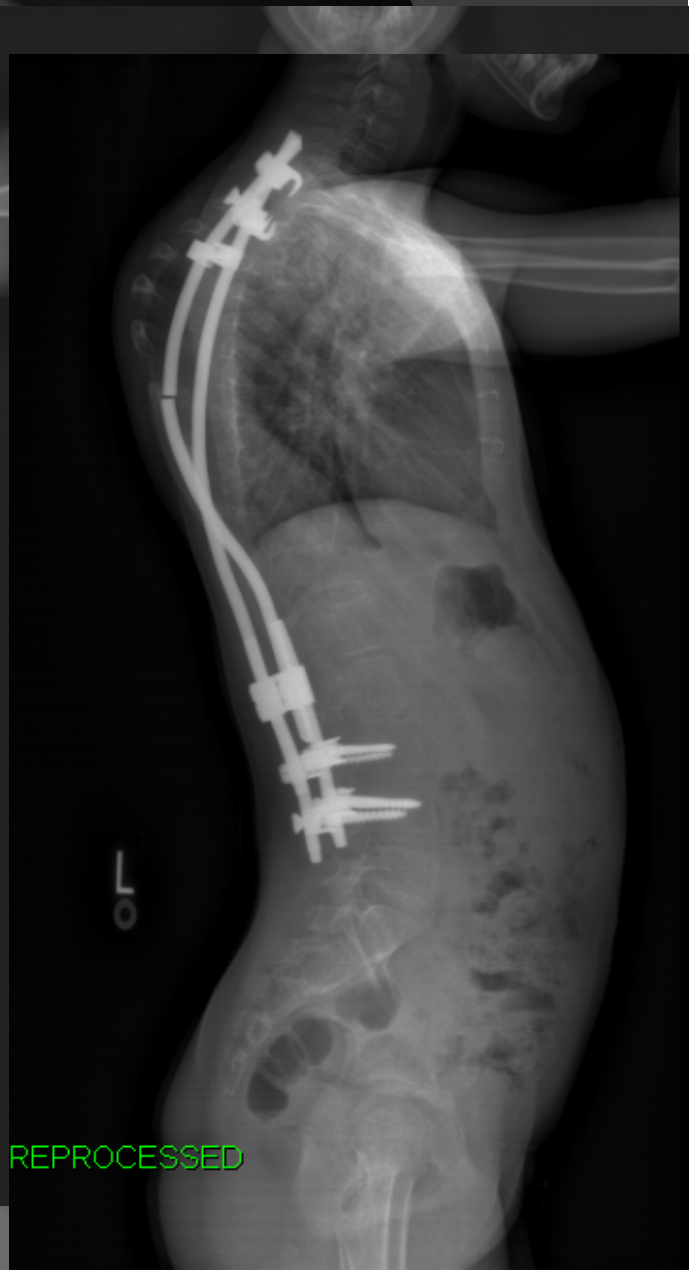
Methods



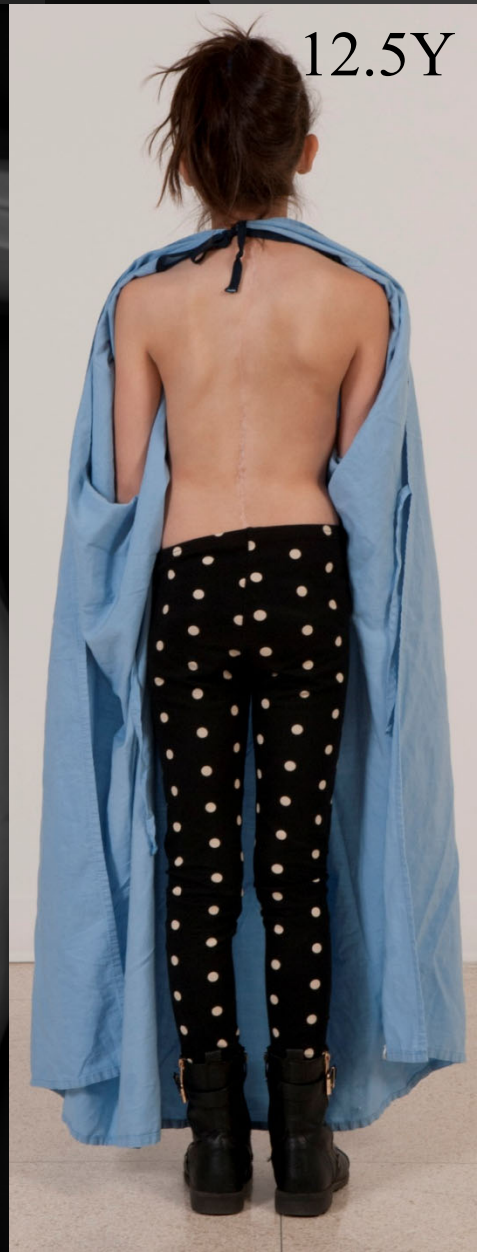

SCOLIOSIS
120
100
80
60
40
Index
Traction
Post-instrumentation
Final

Results

- Length increase/ month (p=0.2)
  - Group A: 0.6 mm
  - Group B: 1.0 mm
- Two unplanned surgeries (2/58)
  - Deep infection (1/group)
- Implant related complications
  - 3 rod breakages
  - 1 possible anchor migration (group A)



Final fusion in severe IIS

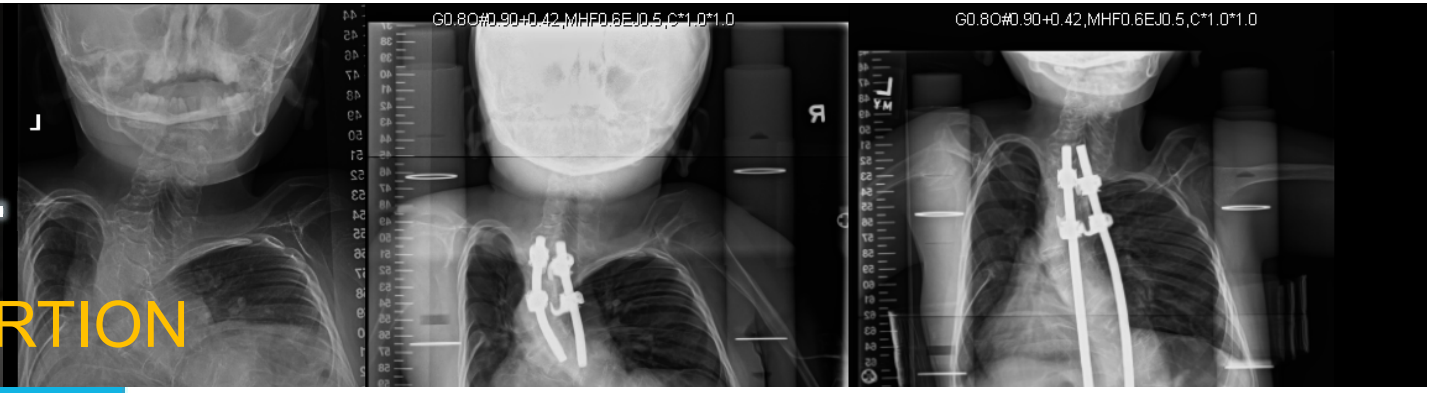


Discussion

- Small group – Control - FU
- "Extra" 2nd stage (2/58 unplanned)
- 6 mm rod – Skull femoral traction – Brace
- Deformity correction/control - Low complication rate

Conclusion

STAGED INSERTION



SickKids

Thank You!

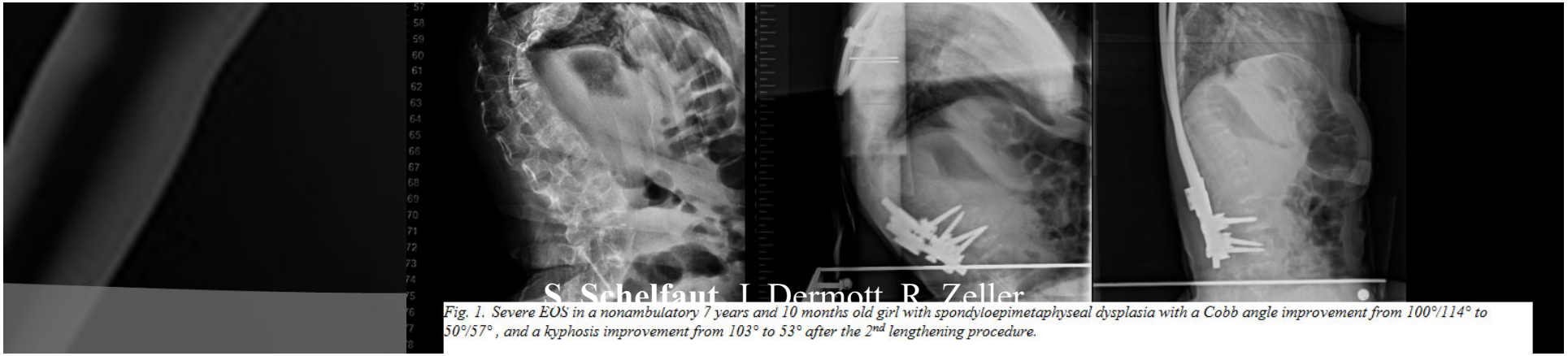


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Fig. 1. Severe EOS in a nonambulatory 7 years and 10 months old girl with spondyloepimetaphyseal dysplasia with a Cobb angle improvement from 100°/114° to 50°/57° , and a kyphosis improvement from 103° to 53° after the 2nd lengthening procedure.