12th Annual ICEOS: Lisbon, 11/15/18

Pelvic Hooks in EOS: Indications and Considerations

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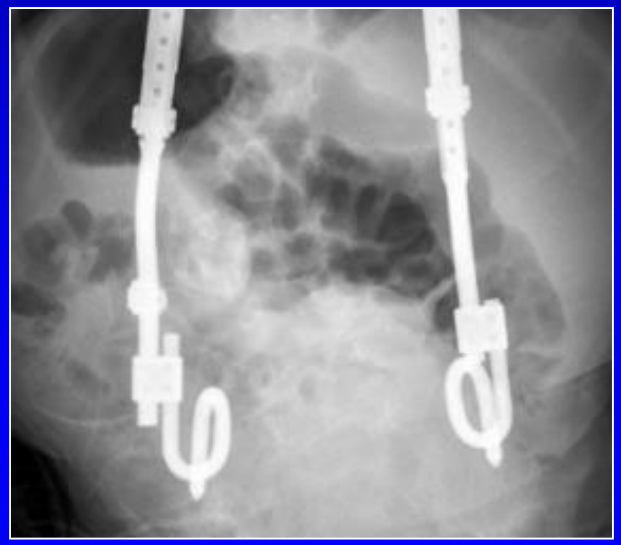
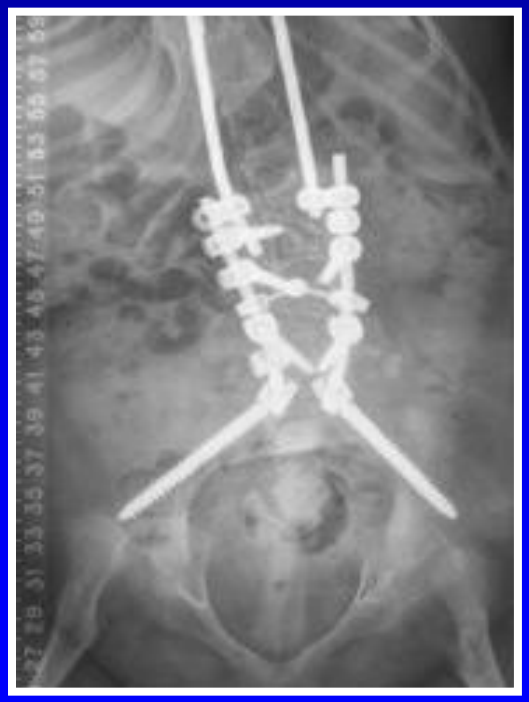
Disclosures

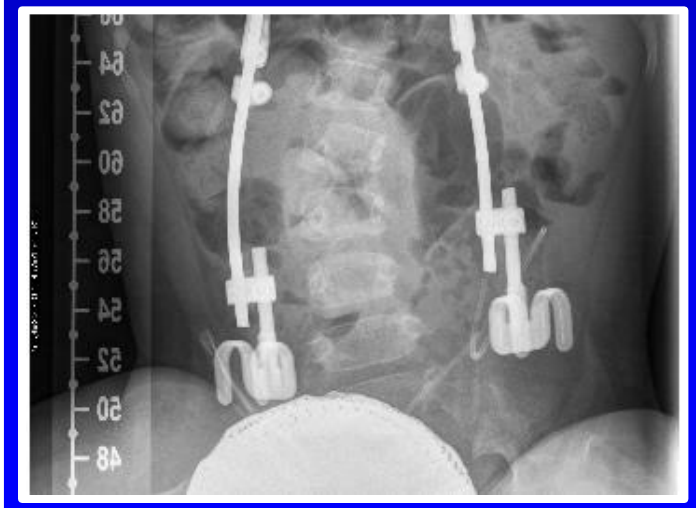
- *Royalties:* Biomet (inc 4.75 system), ECOP
- *Consultant:* Stryker, Biomet, Nuvasive
- *Research Support:* CSF, SRS, POSNA, OREF
- *BOD:* CSSG, IPOS, SP3, POSNA

Iliac Fixation Options in EOS
Screws, S Hooks, U Hooks

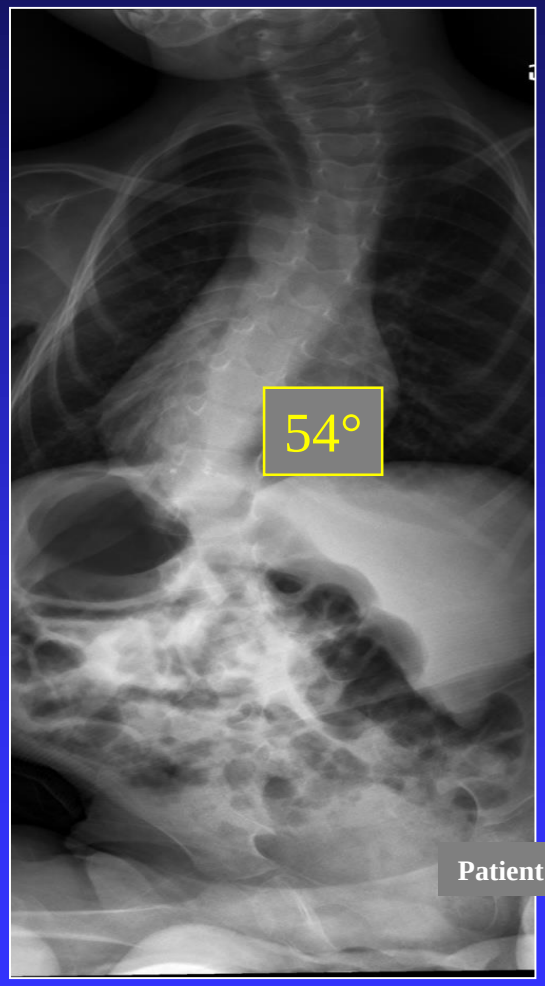
- Iliac Fixation indicated when there is pelvic obliquity and in neuromuscular scoliosis

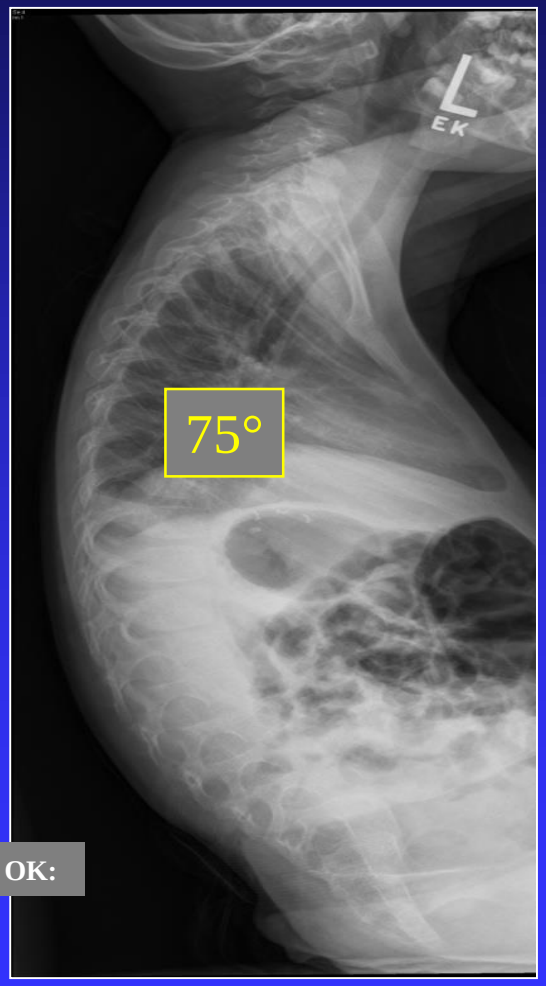






3 yo Spinal Muscular Atrophy Type 1 progressive Curve; worsening lungs



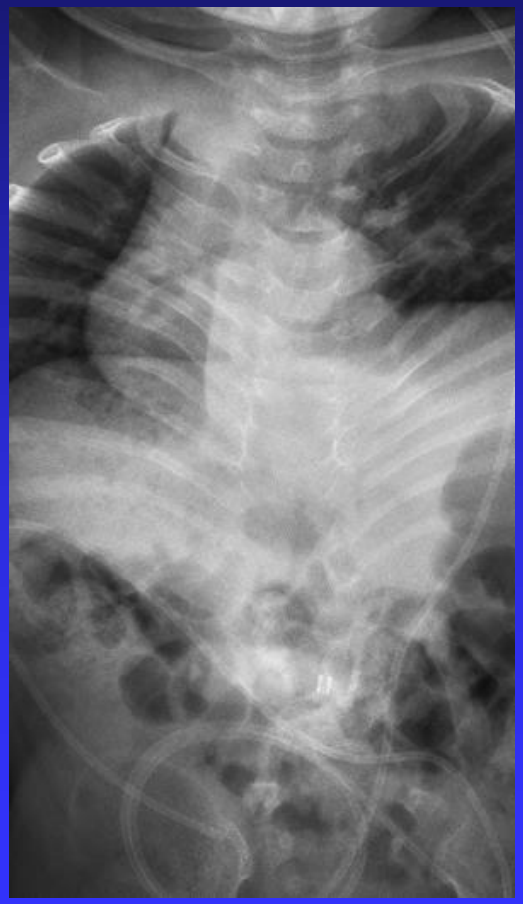


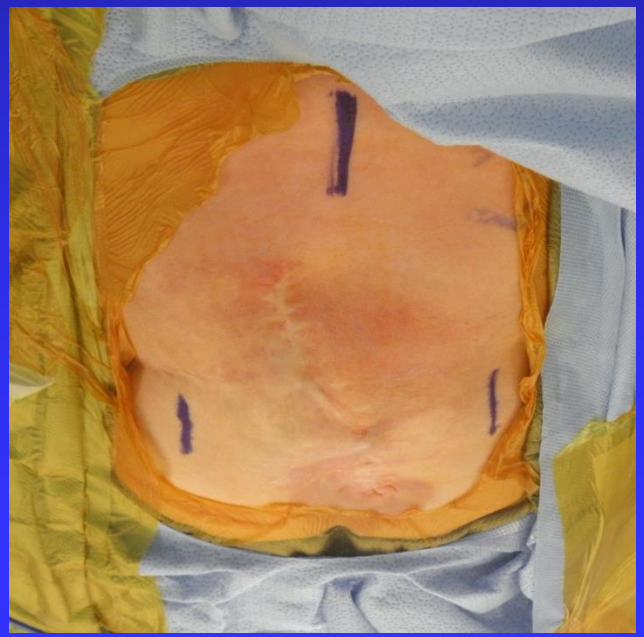
Patient OK:

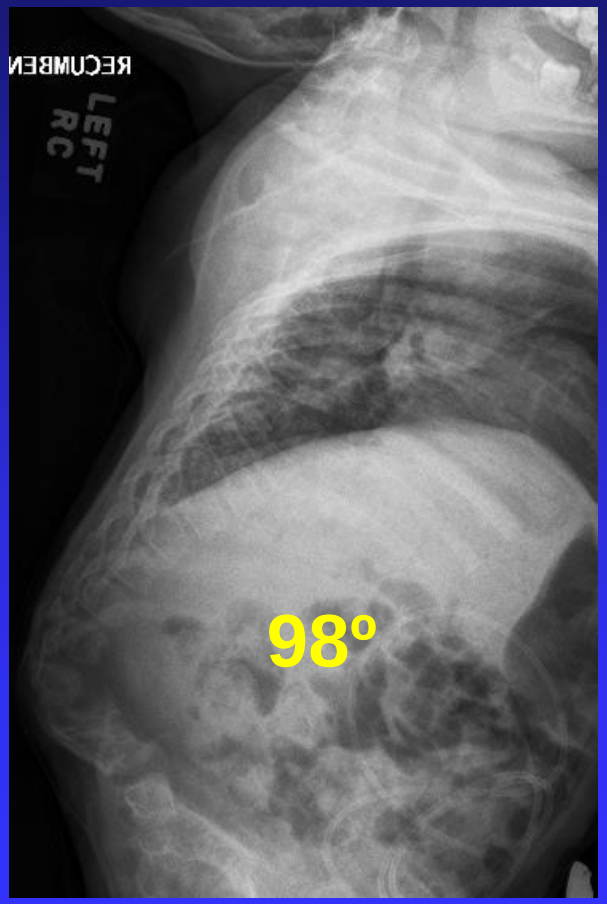
- No BiPAP, but uses Cough Assist nightly
- G-tube
- Cobb 23º → 54º in 6 mo.
- 75deg Kyphosis
- C-EOS: N3+P2
- ***Proximal and Distal Fixation ??***

4 yo Myelomeningocele; Bad Midline Skin at kyphous

- Preop G tube
- Bad midline skin
- Curve progression to 98º of total kyphosis

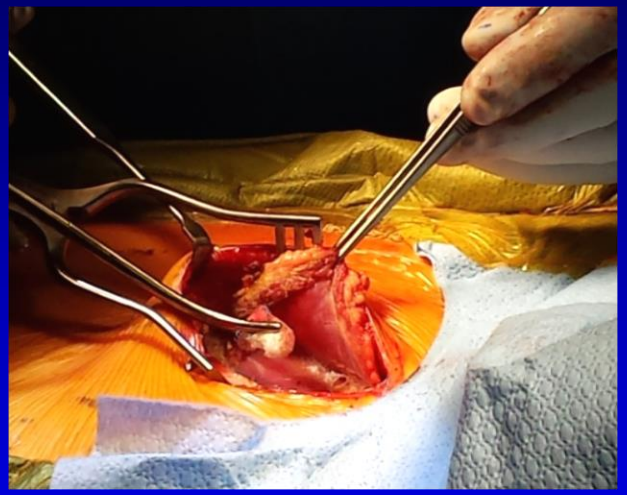


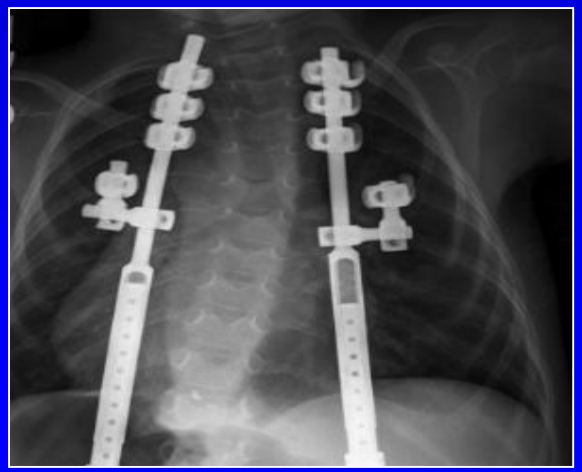




Consider *rib fixation* especially in younger children (<5yo)

- Safer
- Easier with small anatomy
- Less Fusion
- More Growth
- (Avoids midline)





Consider *pelvic hook* fixation especially in younger children (<5yo)

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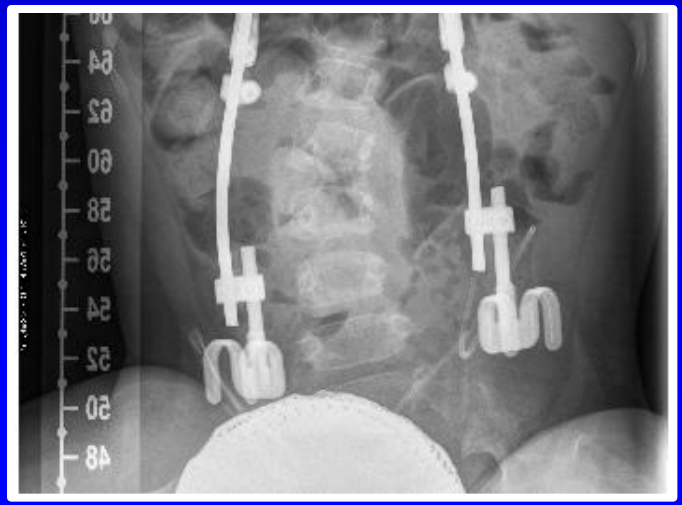

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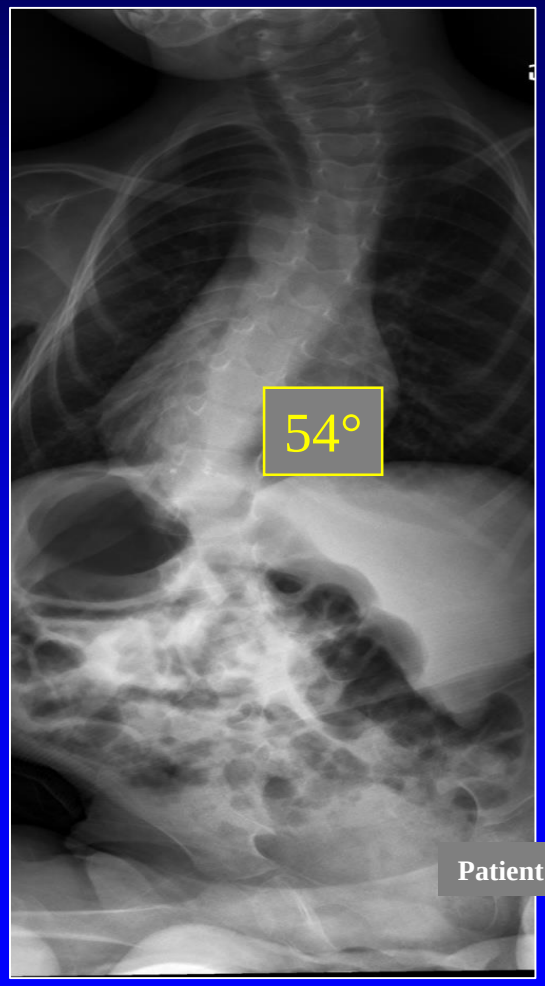

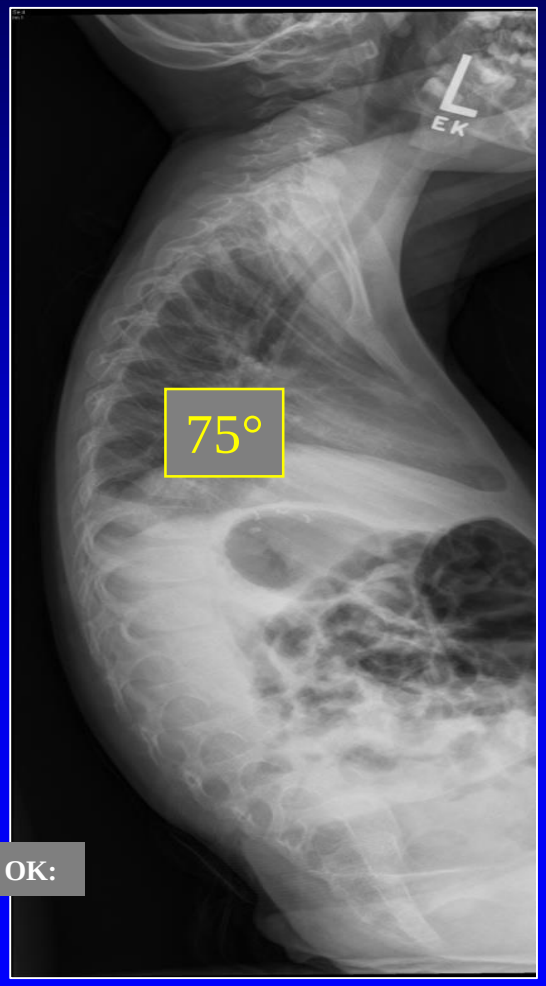

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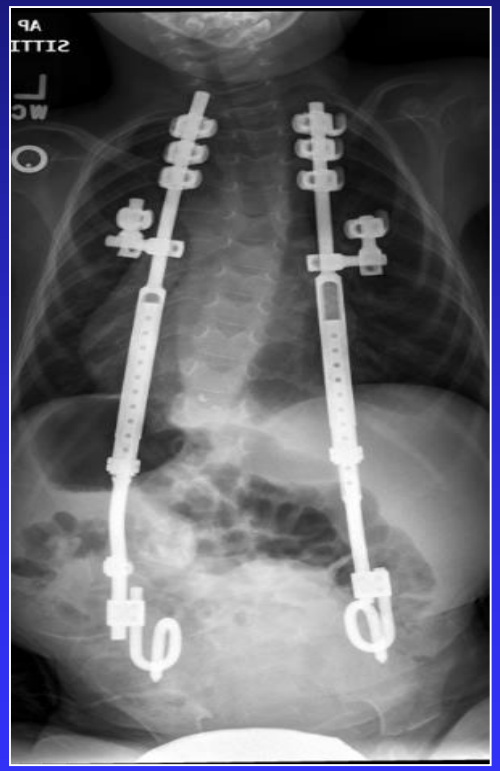
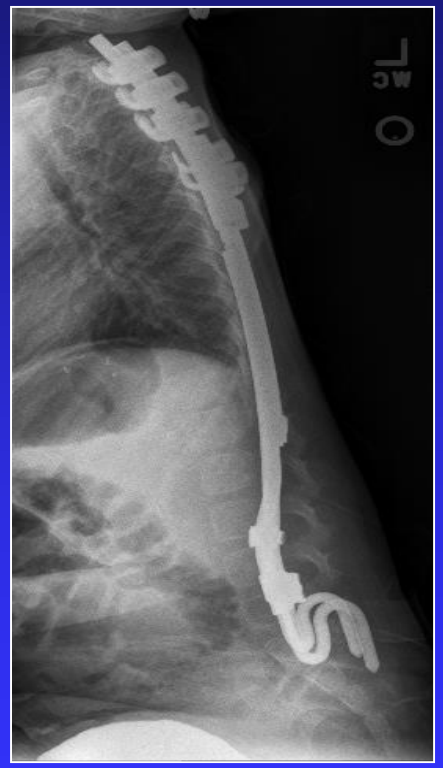
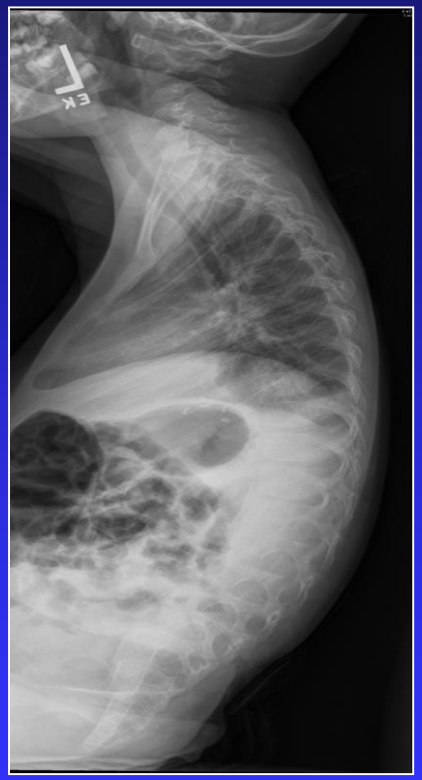
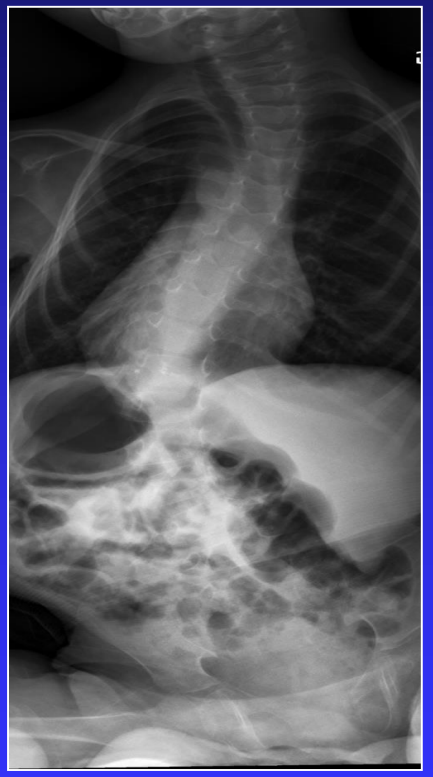
- G-tube
- Cobb 23º → 54º in 6 mo.
- C-EOS: N3+P2
- ***Proximal and Distal Fixation ??***

Traditonal Growing Rods
S-hooks to pelvis
Outriggers to support parasol deformity

4 yo Myelomeningocele; Bad Midline Skin at kyphous

- Preop G tube
- Bad midline skin
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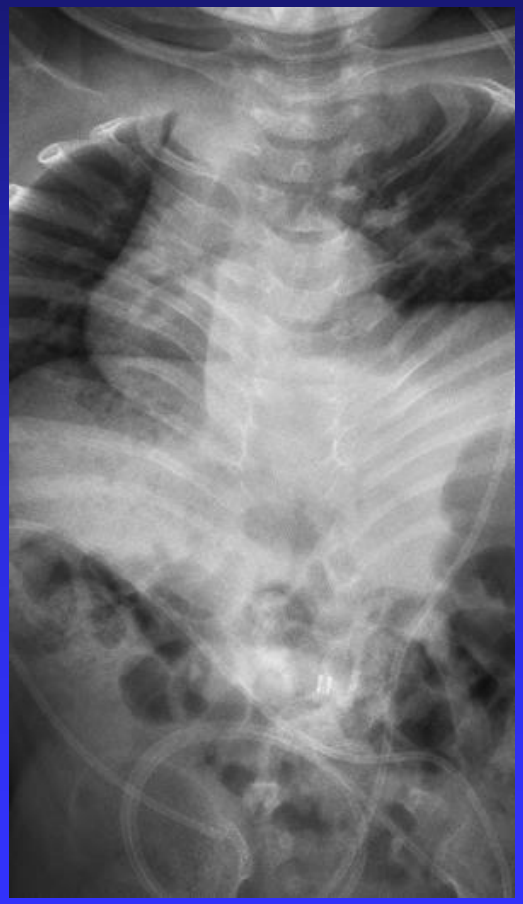
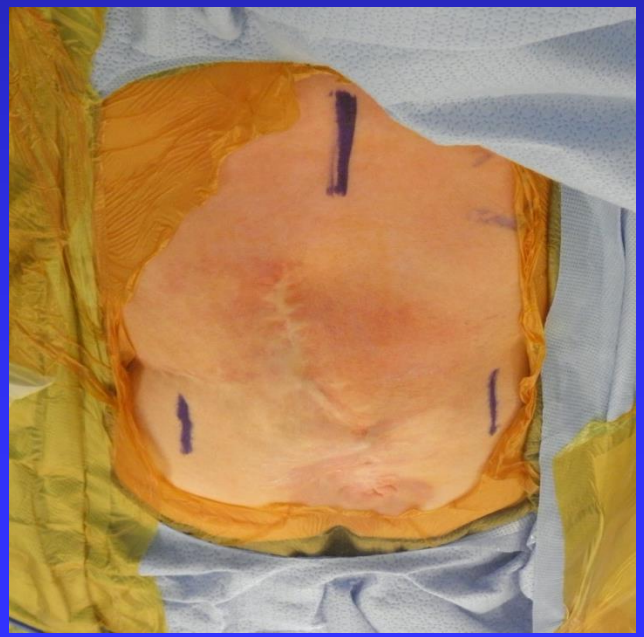
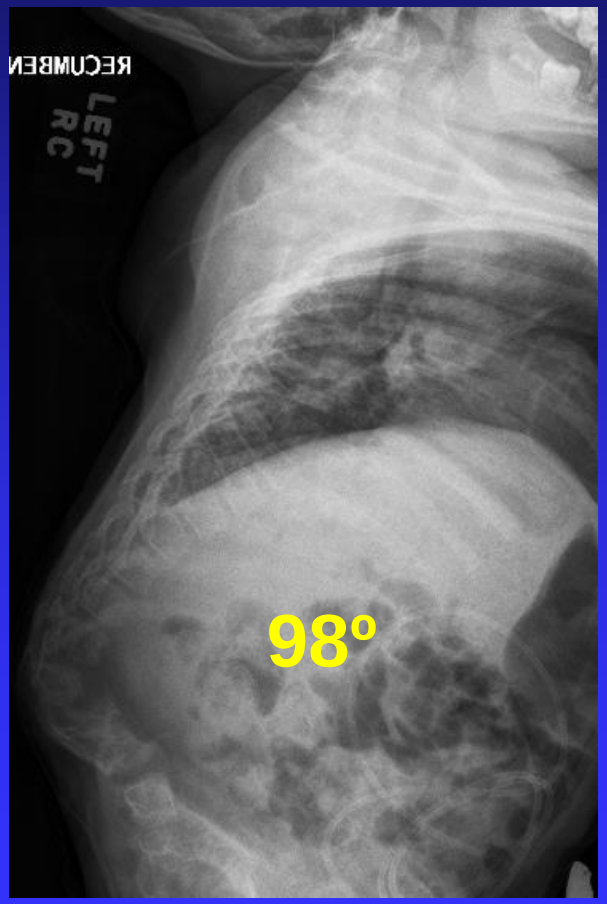
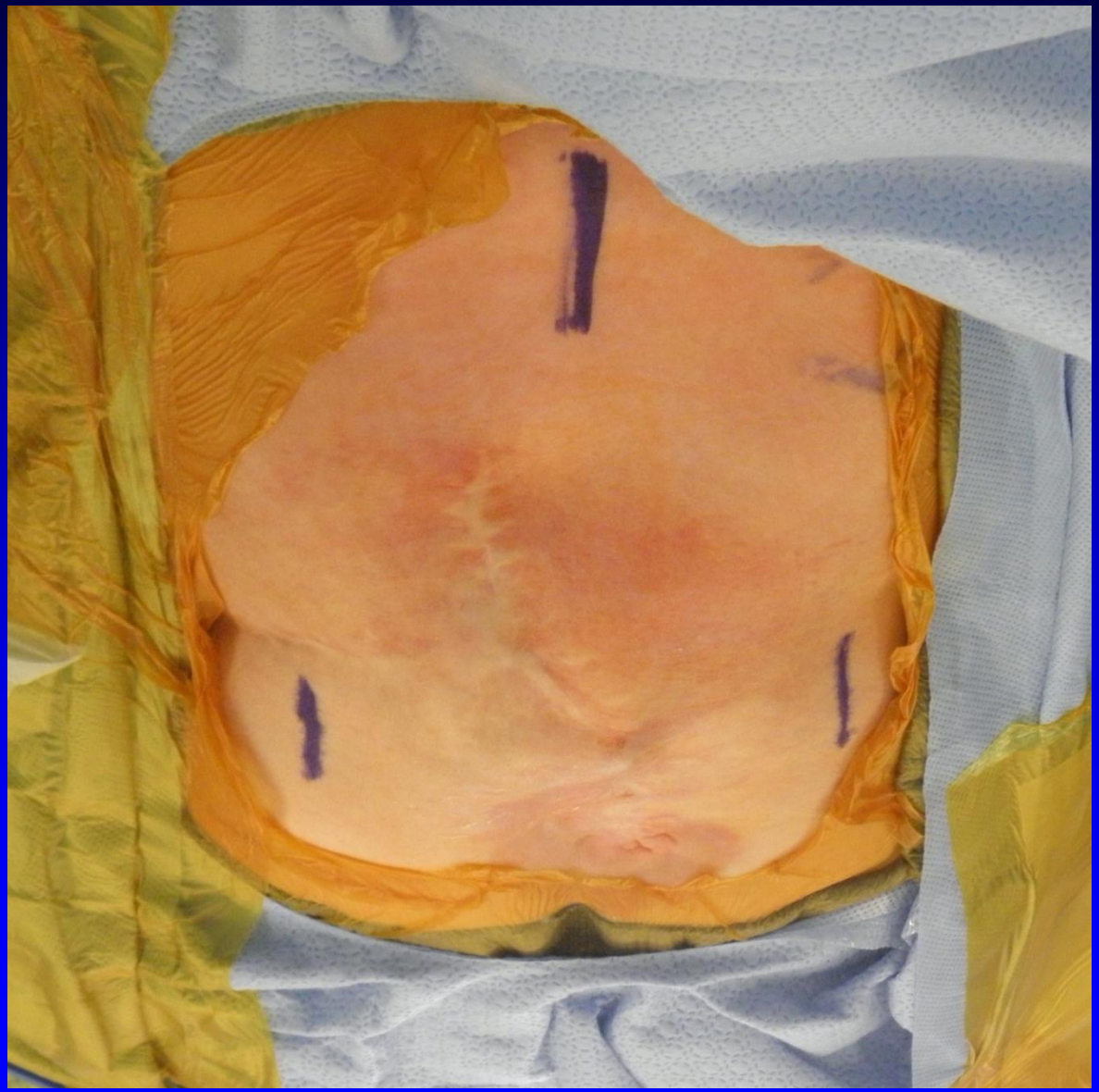


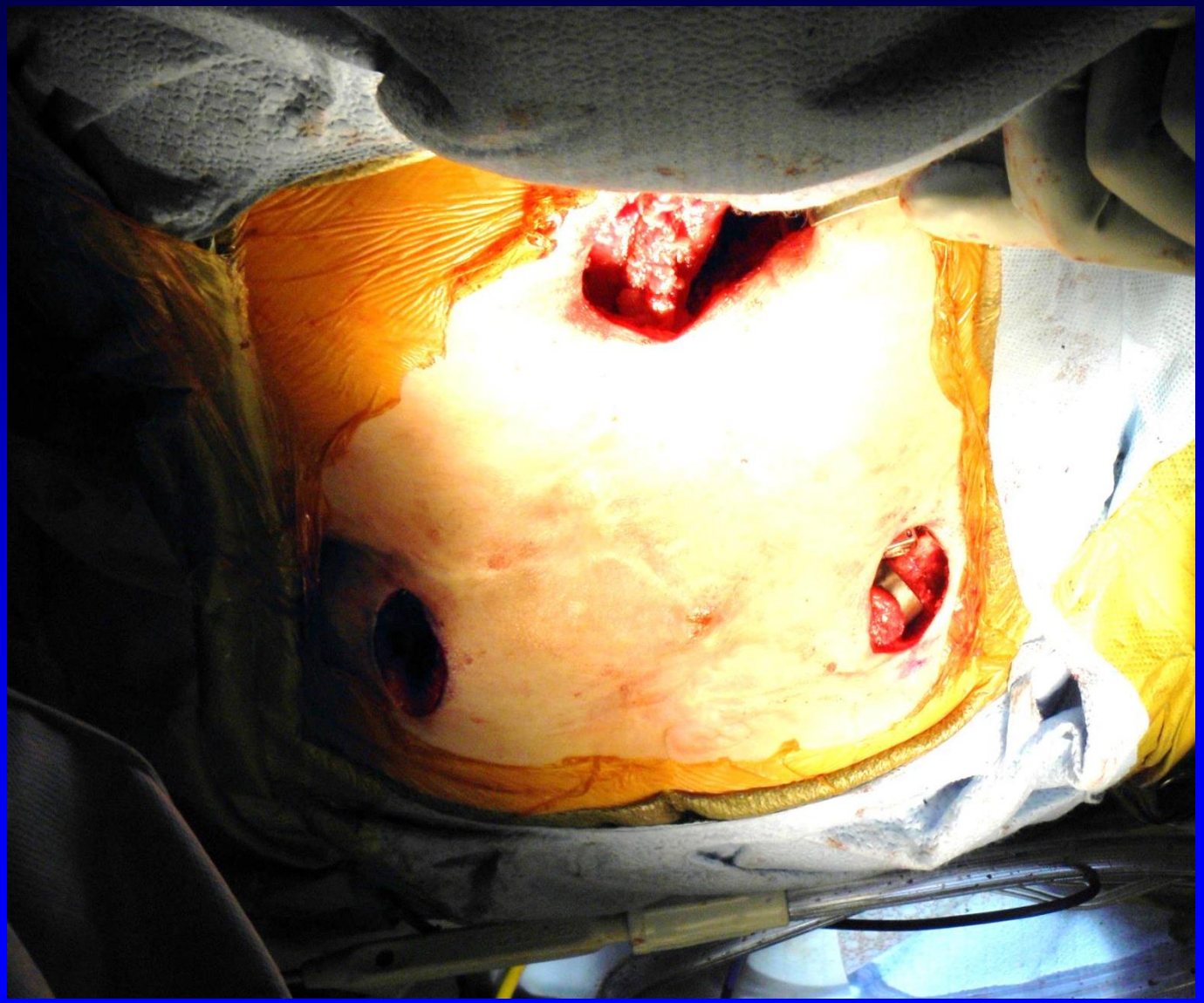




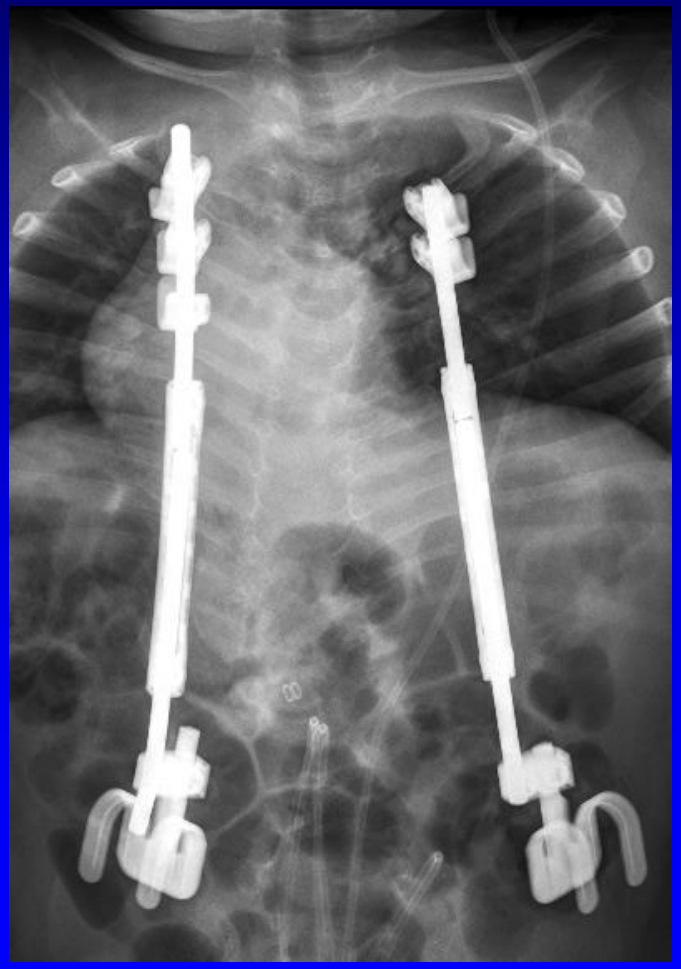
Myelomeningocele with Bad Midline Skin

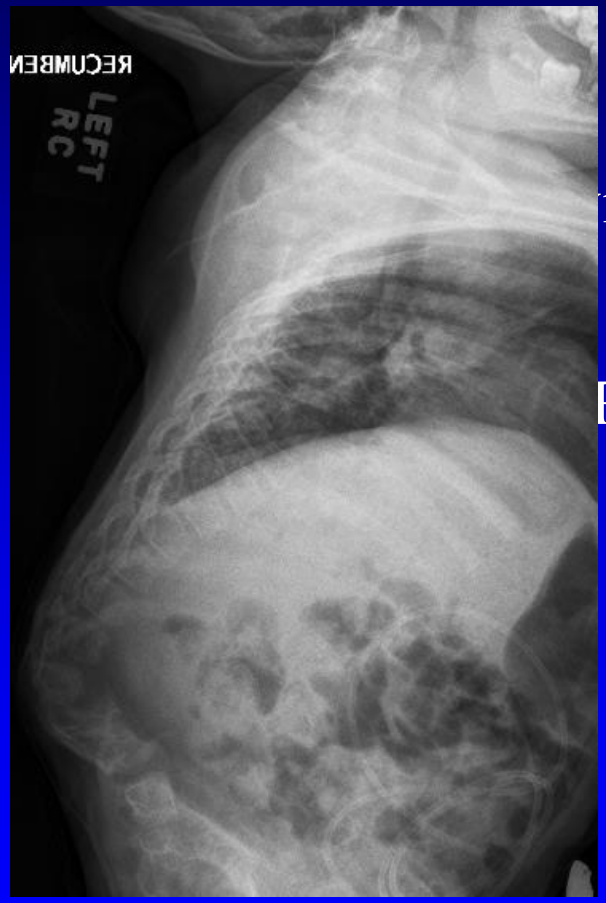


Lateral Incisions Avoid Bad Skin



Patient NR: Uneventful 4 years post op





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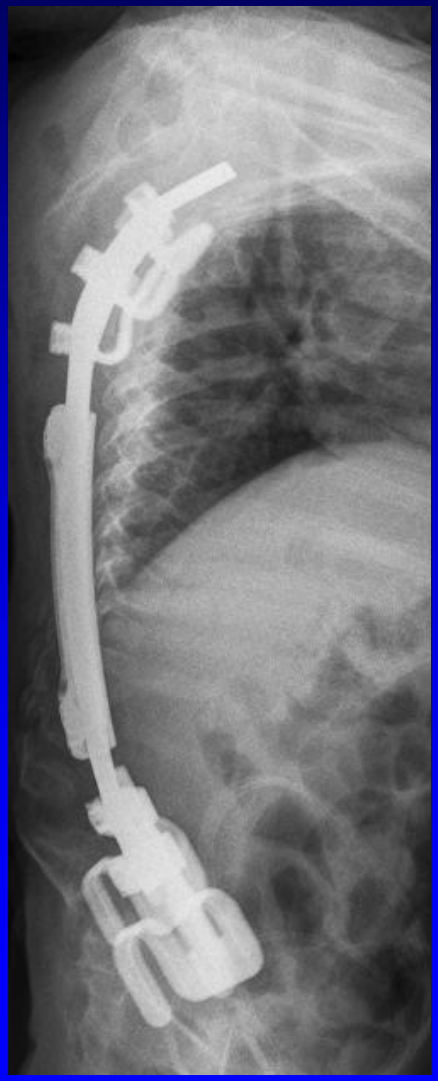
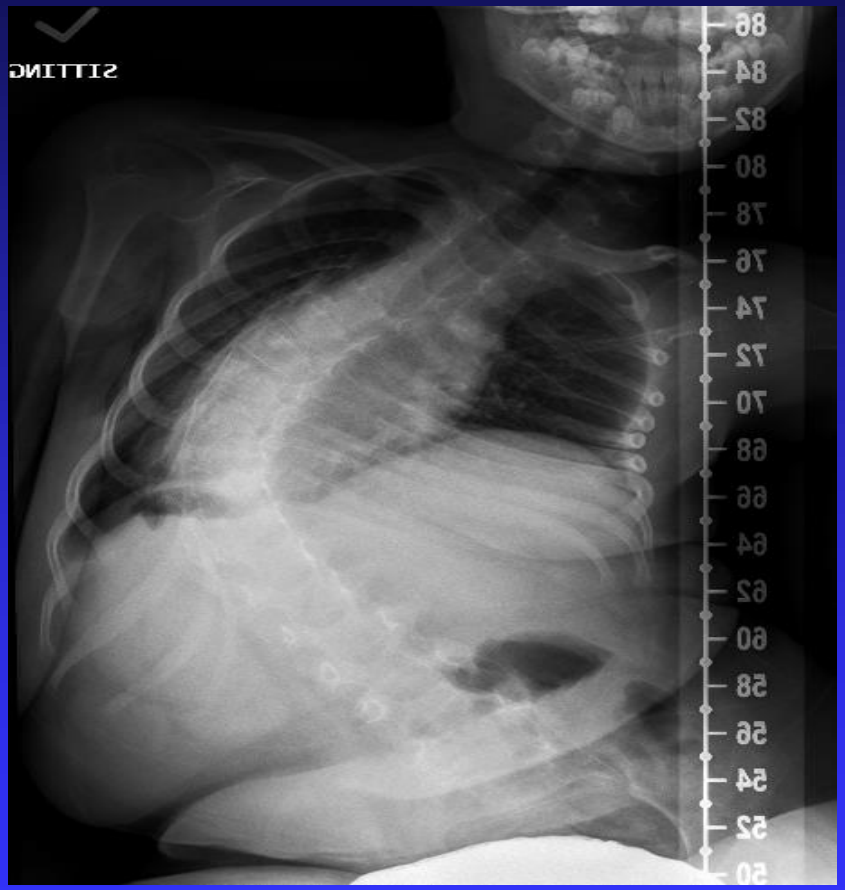
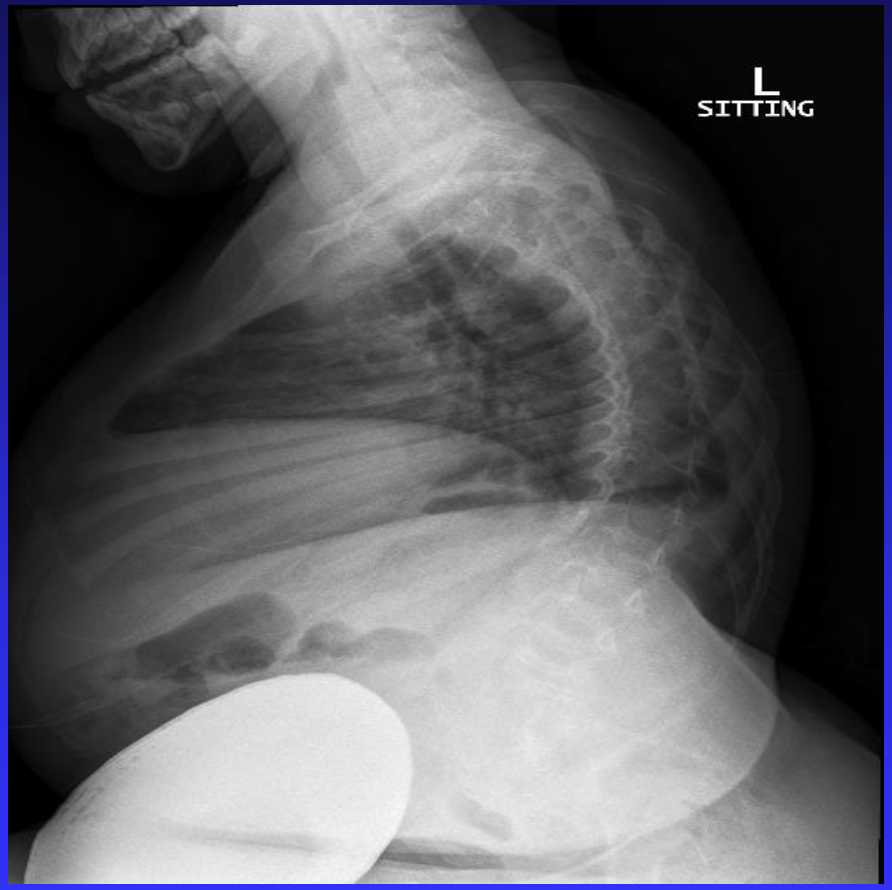
- Rod



NK 7 y/o boy with SMA- too much PO for hooks





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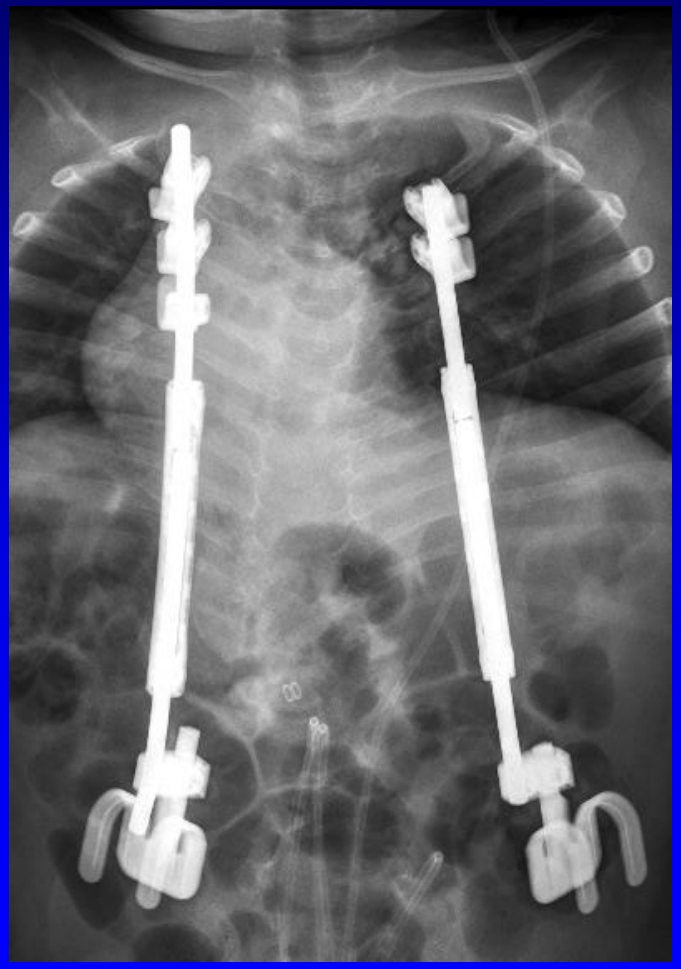

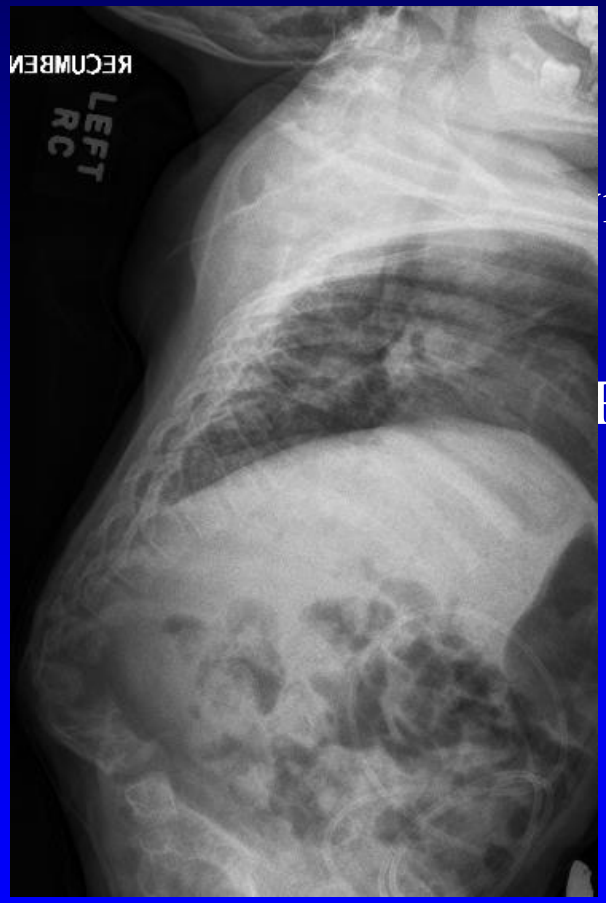

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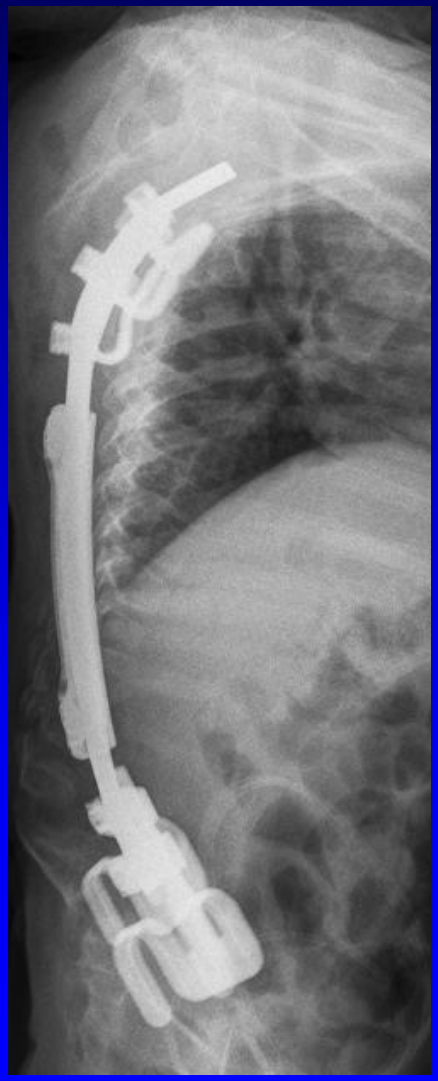
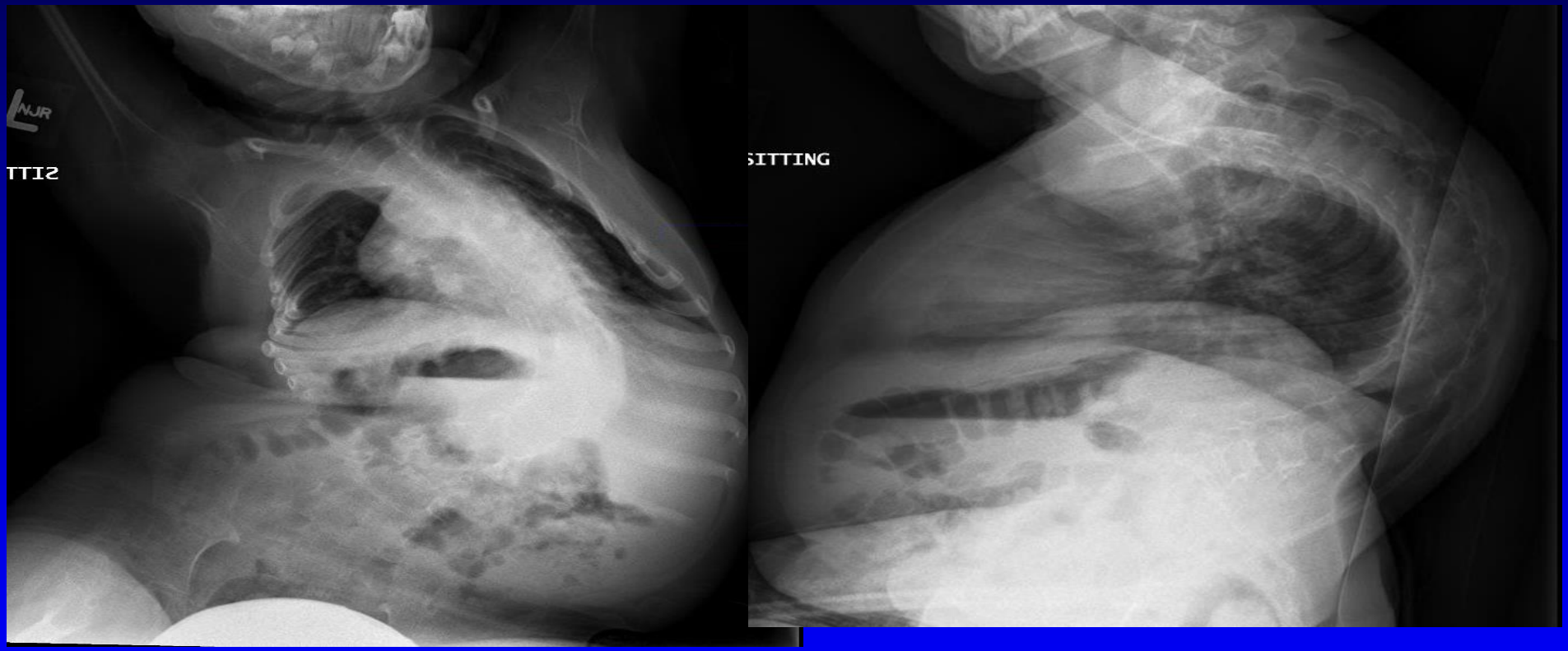


7M w SMA2 w progressive scoliosis

lives in NC, has twin brother with SMA2 as well



Can Use Hooks Even with Large Curves

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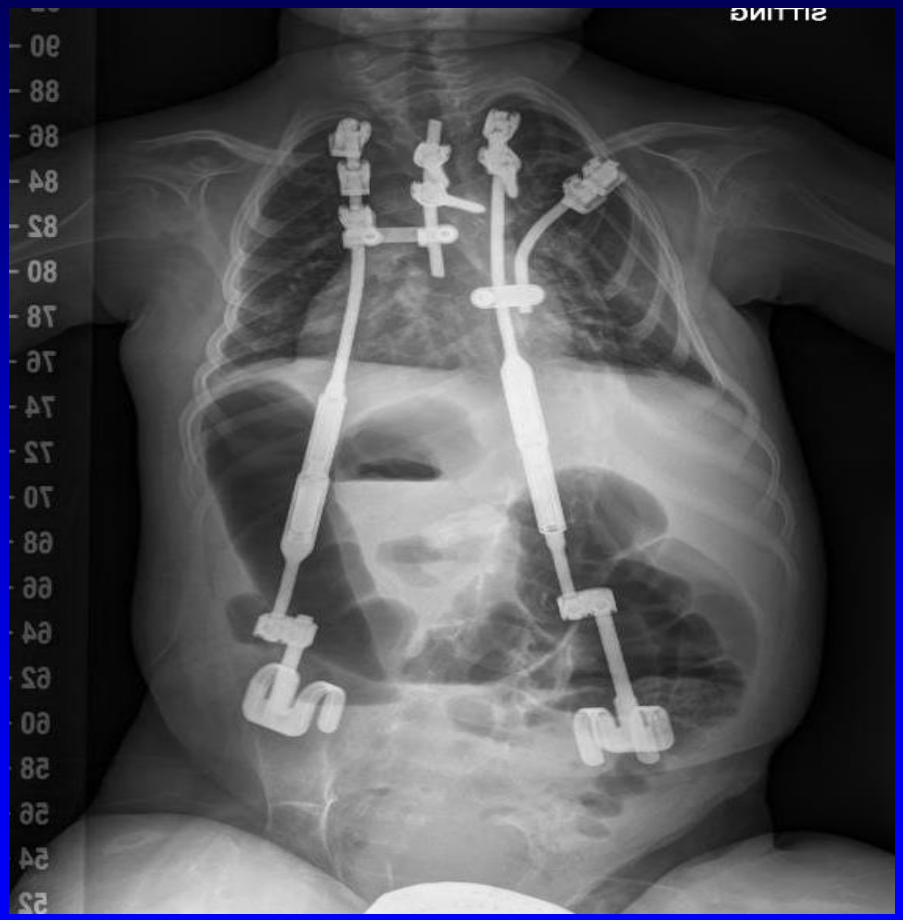
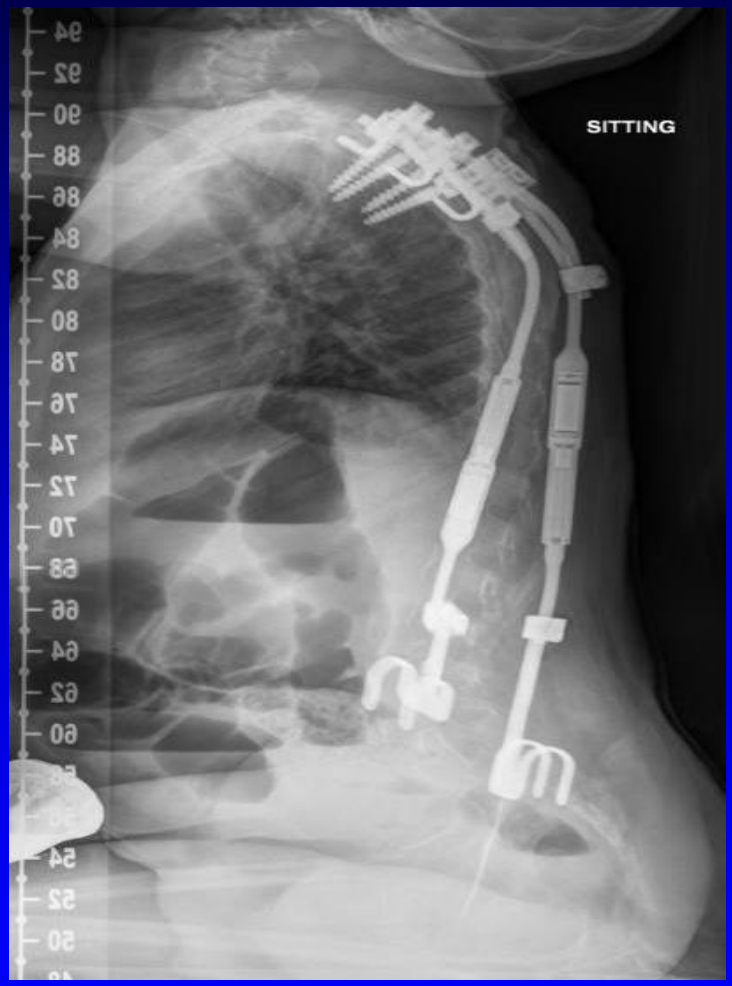
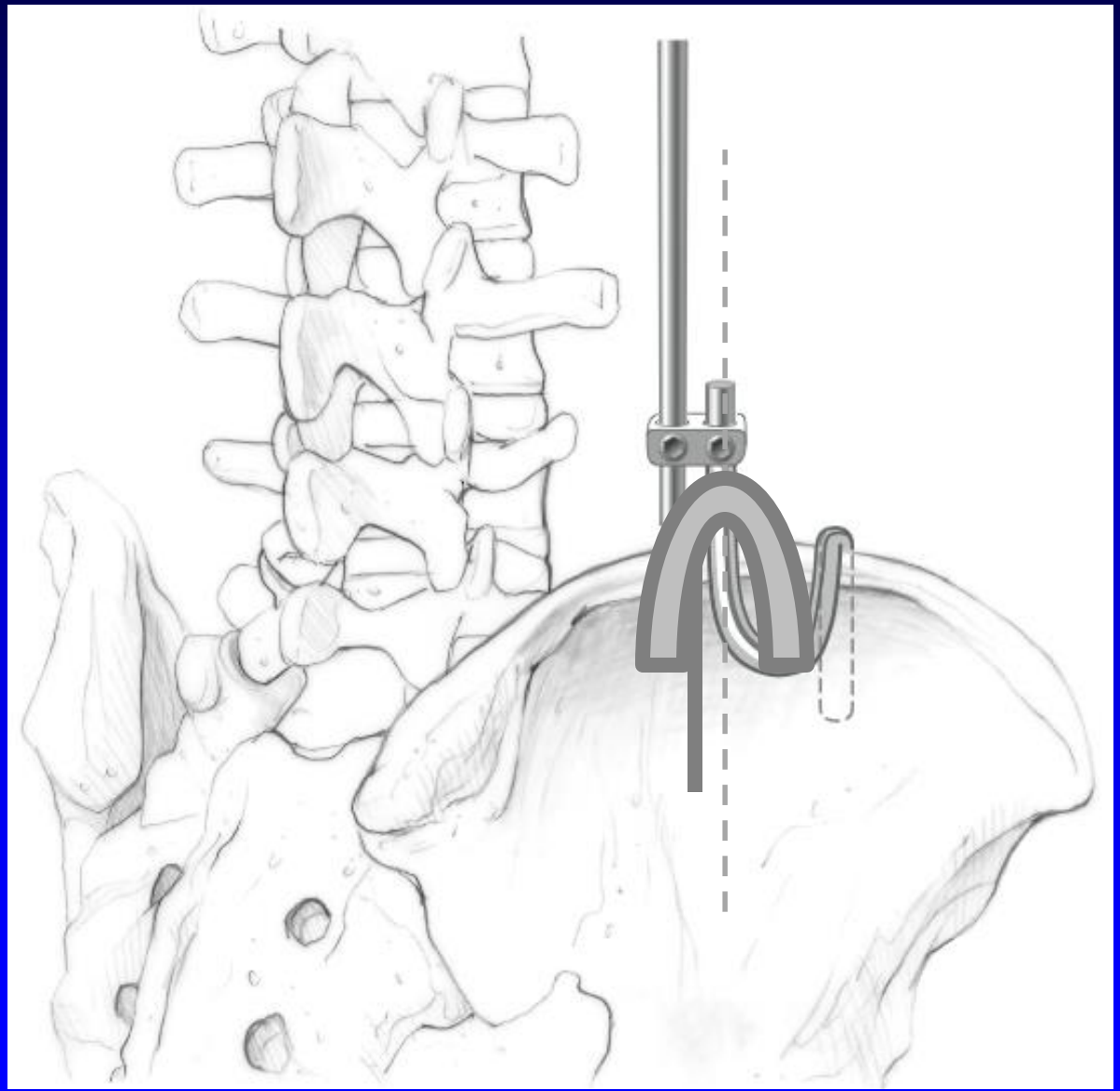
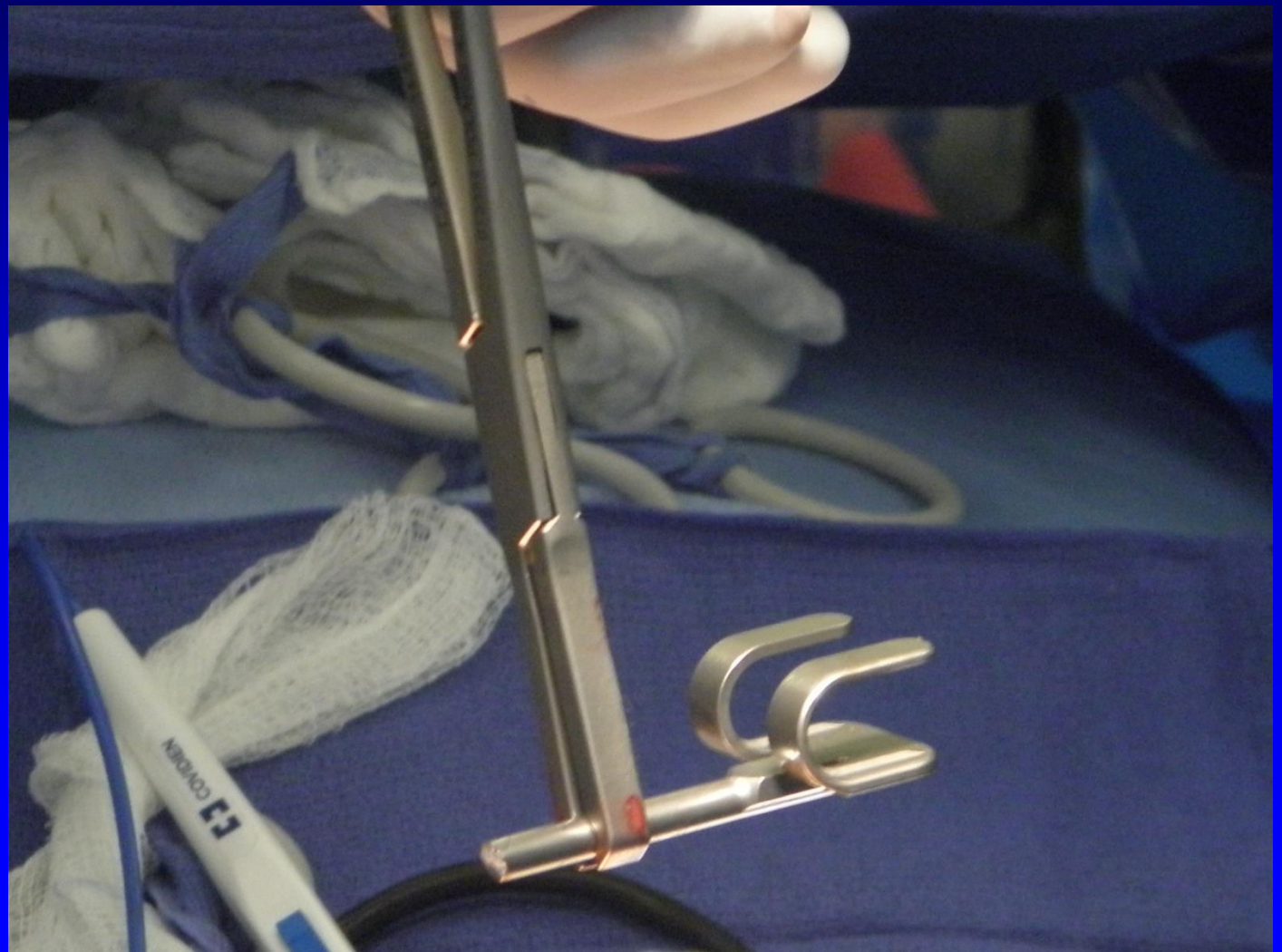




Hook Position

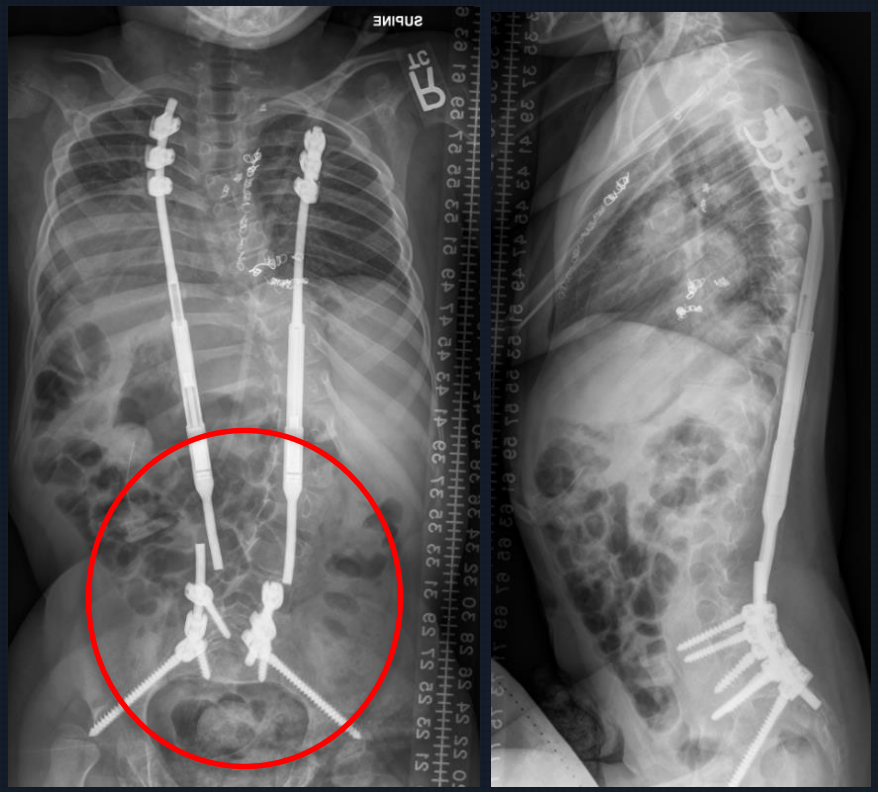


Note "reversed" position (connects more anterior) to maximize lordosis

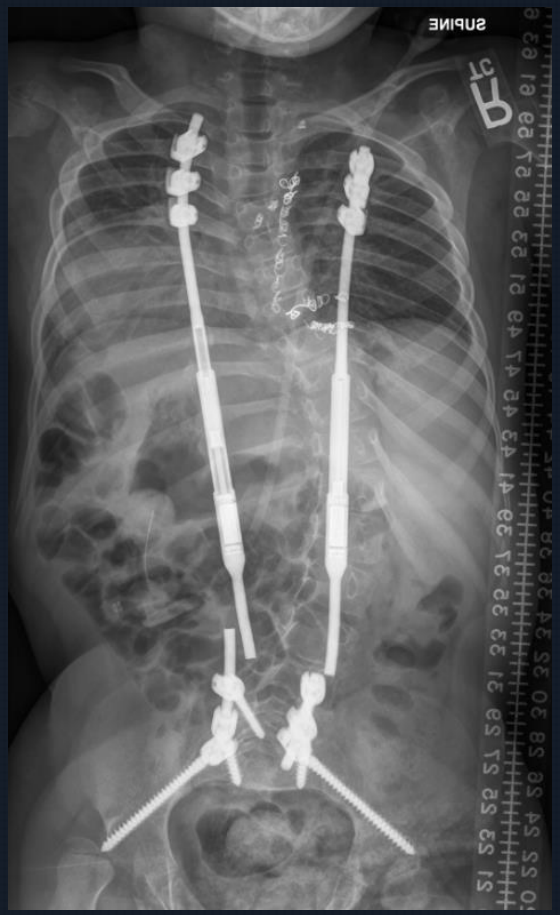


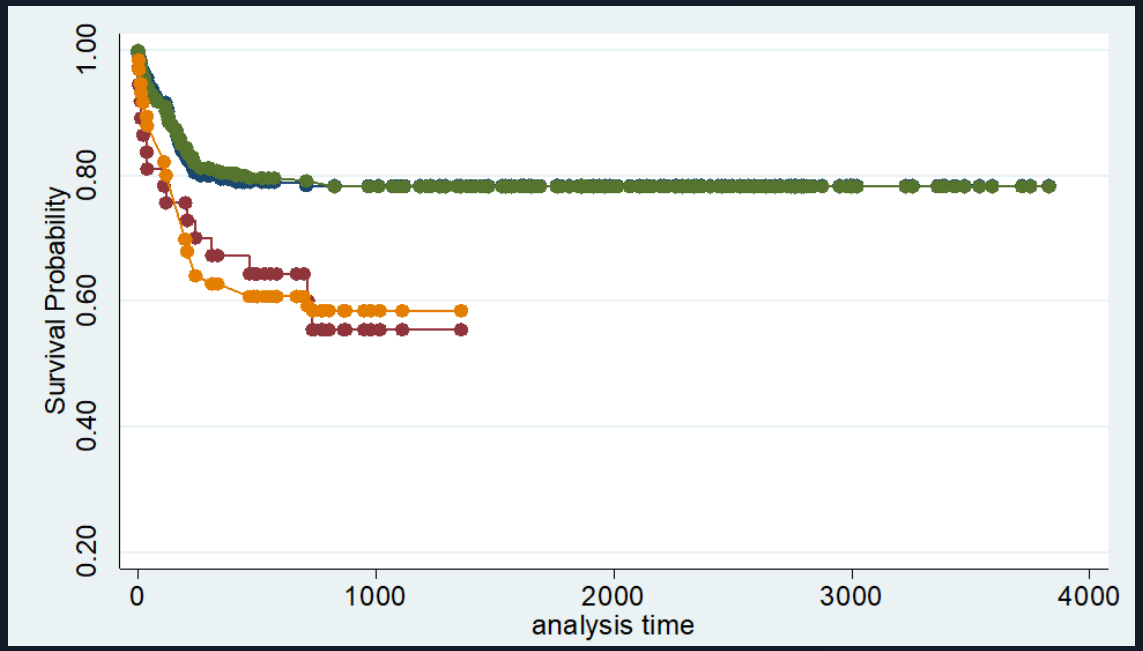
Does Rigid Fixation Inclrease Rod Fracture?

- 8 yo Male with CP – GMFCS 5
- Major coronal curve 70^0 deg at preop
- Presented with bilateral rod fractures ~1 year post-op
- Planned for revision surgery



UPROR: MAGEC vs VEPTR



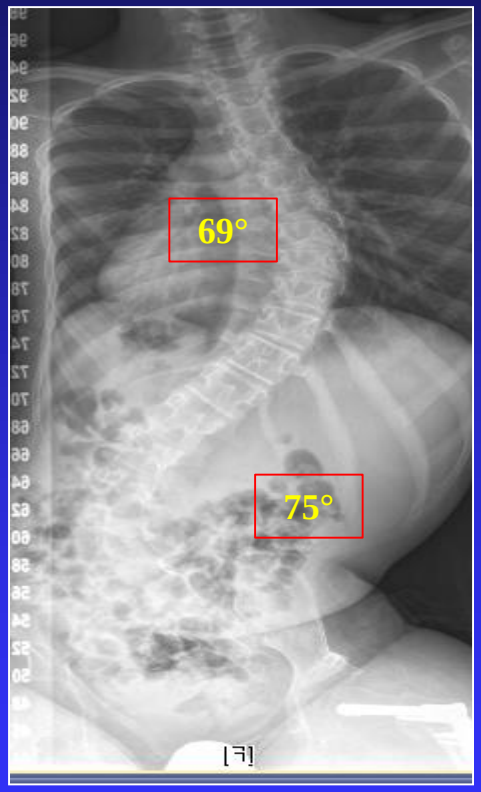


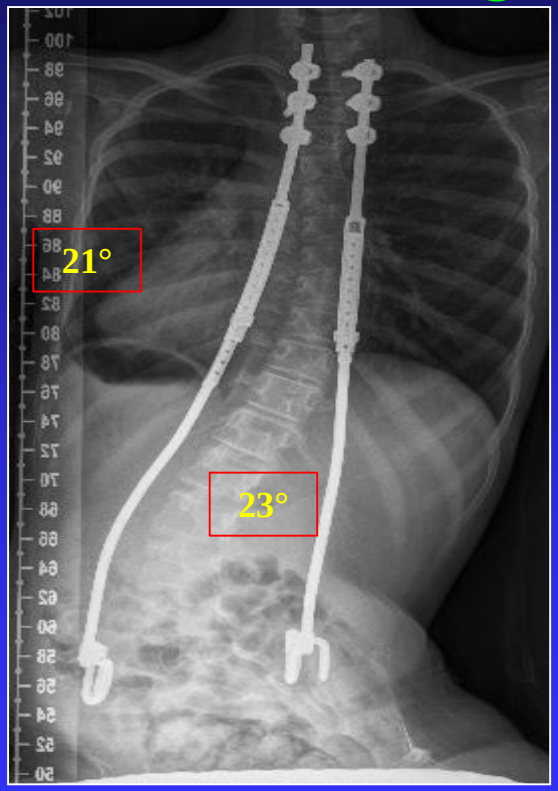
One year from implant, the likelihood of UPROR for the MCGR cohort was 40% - and 20% for the VEPTR cohort

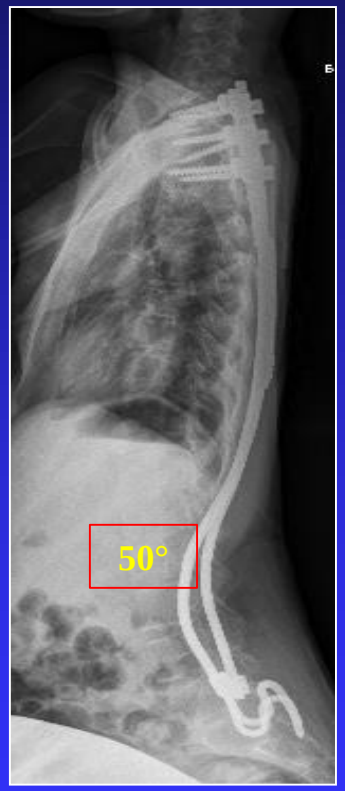
AS: 14 year old SMA, losing pelvic control

Now what?

Dual T2-T4 to Pelvis VEPTR Growing Rods





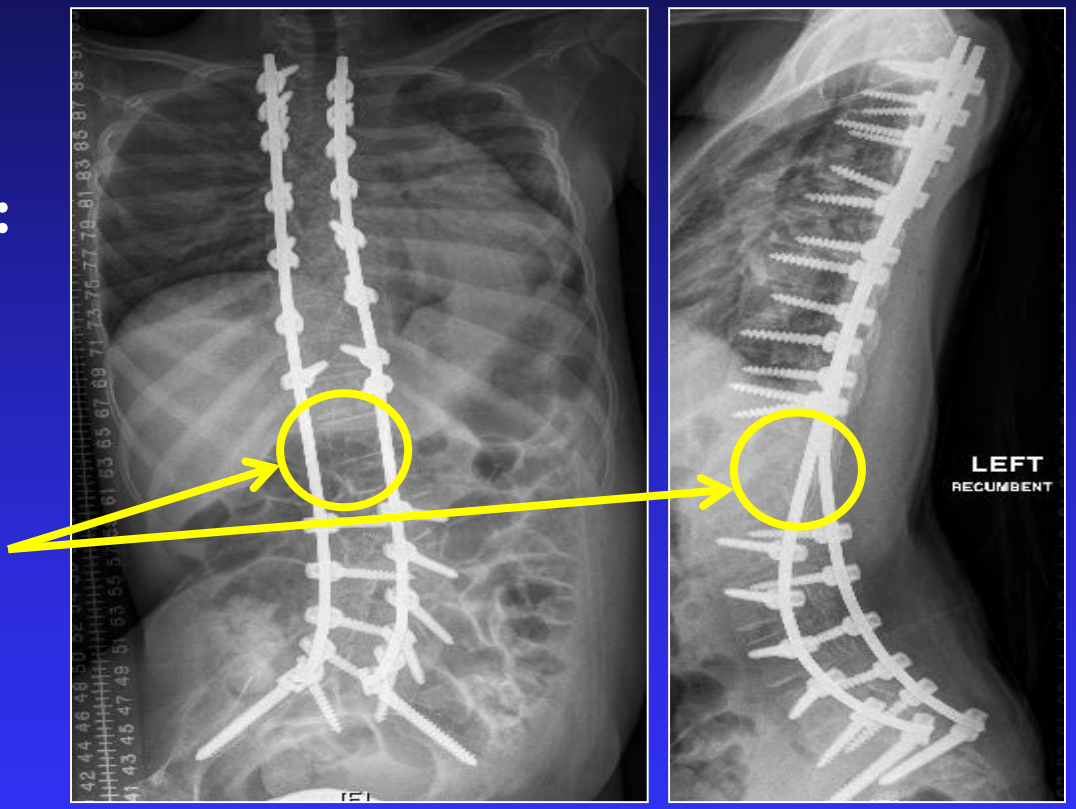


2012

C-EOS: N3(-)P2

"SMA Construct": AS (N=12)

- In ISIS Trial
- Pt enrolled in ISIS trial:
  - Requires intrathecal injections SMNRx via lumbar spine
  - Gap left: T12-L2 instrumented but unfused



Thank You!

AMAZING THINGS ARE HAPPENING HERE

mgv1@columbia.edu