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

- No BiPAP, but uses Cough Assist nightly
- G-tube
- Cobb 23° → 54° 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 98° 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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**Proximal and Distal Fixation ??**
Traditonal Growing Rods
S-hooks to pelvis
Outriggers to support parasol deformity
4 yo Myelomeningocele; Bad Midline Skin at kyphous

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- Bad midline skin
- Curve progression to 98º of total kyphosis
Myelomeningocele with Bad Midline Skin
Lateral Incisions Avoid Bad Skin
Patient NR: Uneventful 4 years post op

- Rib to pelvis growing rod insertion
- Biomet 4.5 Growing Rod System
NK 7 y/o boy with SMA - too much PO for hooks
Patient NR: Uneventful 4 years post op

- Biomet 4.5 Growing Rod System
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 Increase Rod Fracture?

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

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