

ICEOS case

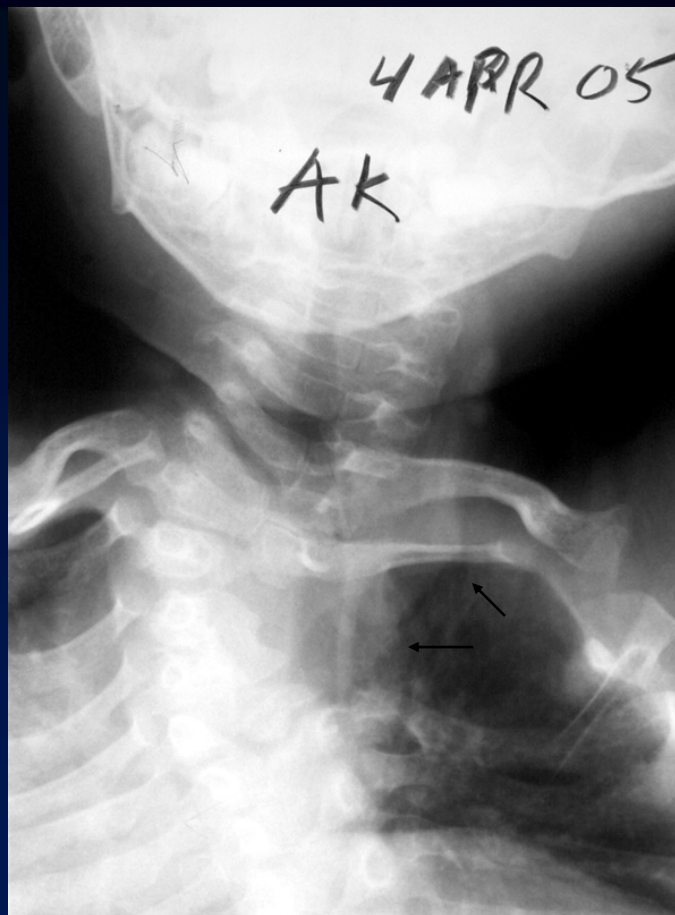
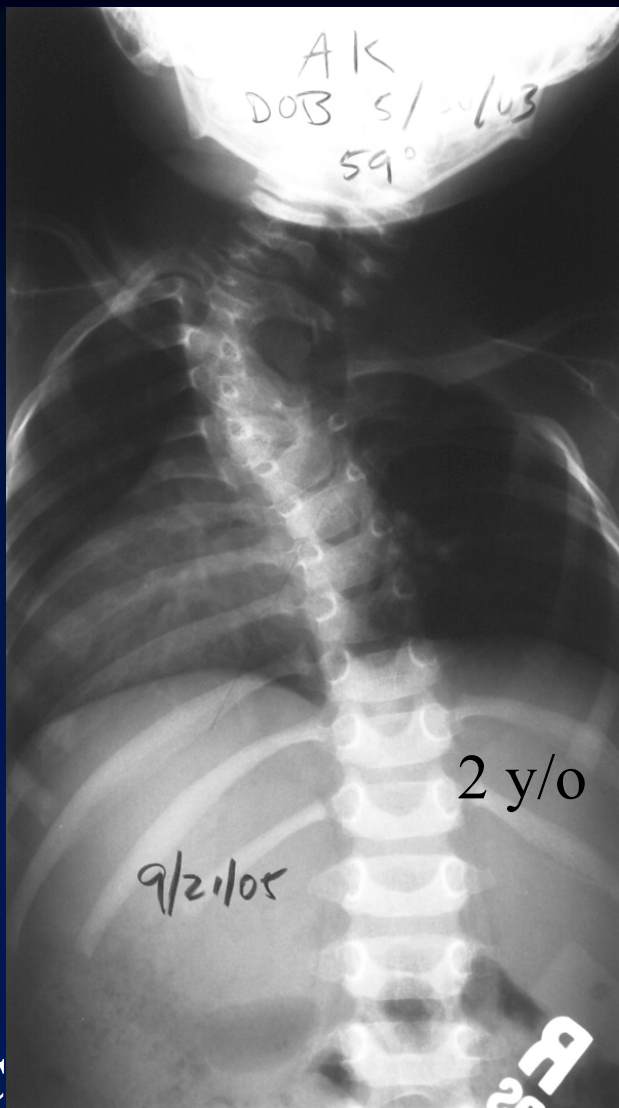
RM Campbell

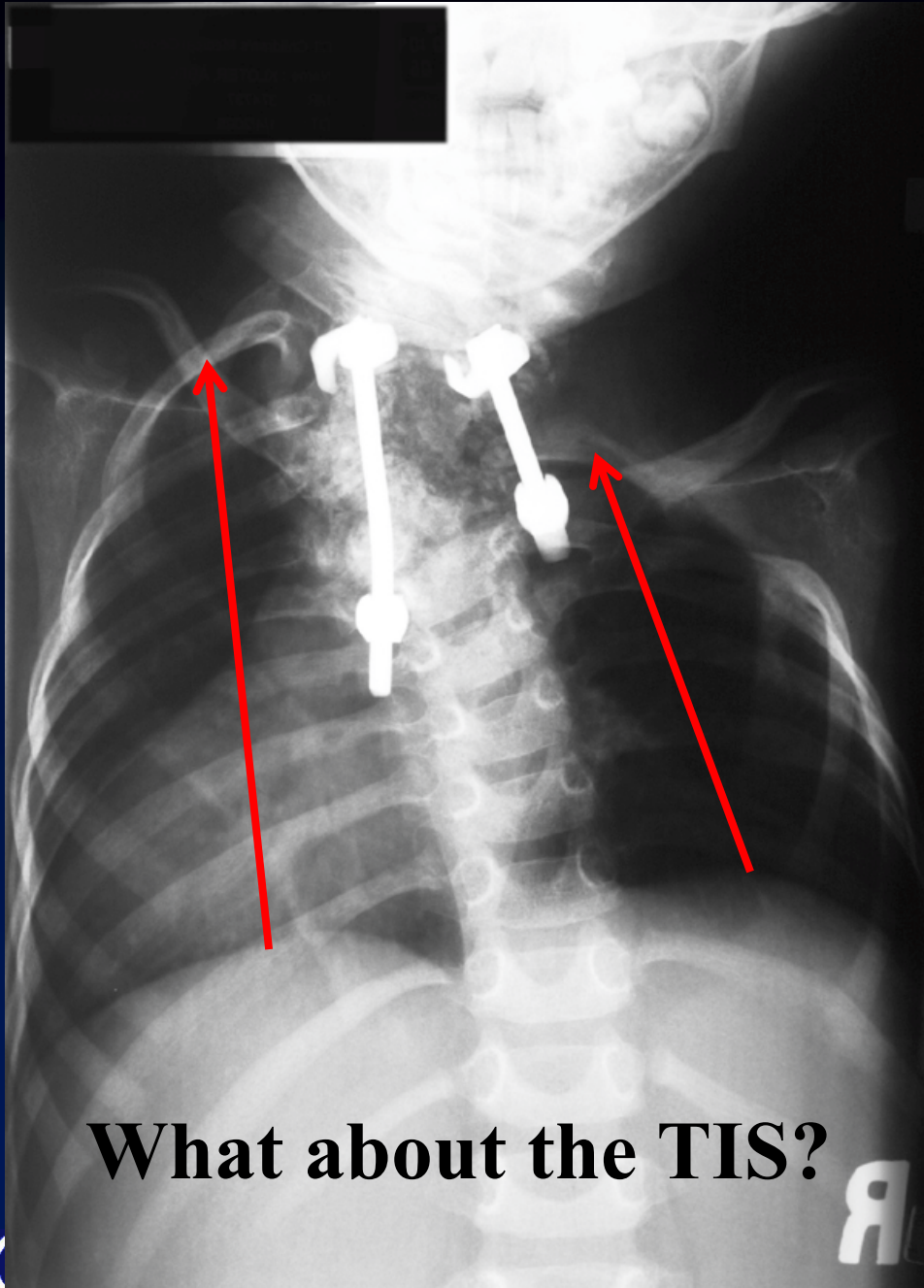
The Effect of Mid-Thoracic VEPTR Opening
Wedge Thoracostomy on Cervical Tilt
associated with Congenital Scoliosis



Options?

Attack the problem directly?





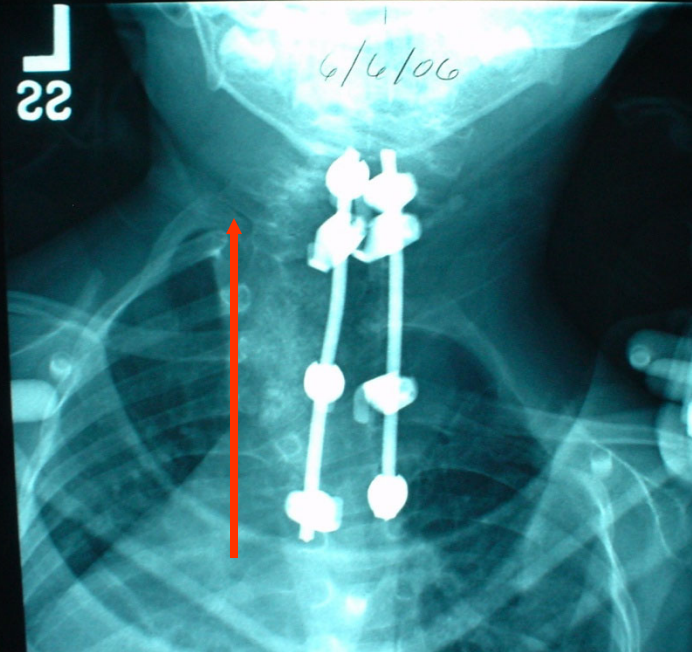
CTIS (

What about the TIS?

R

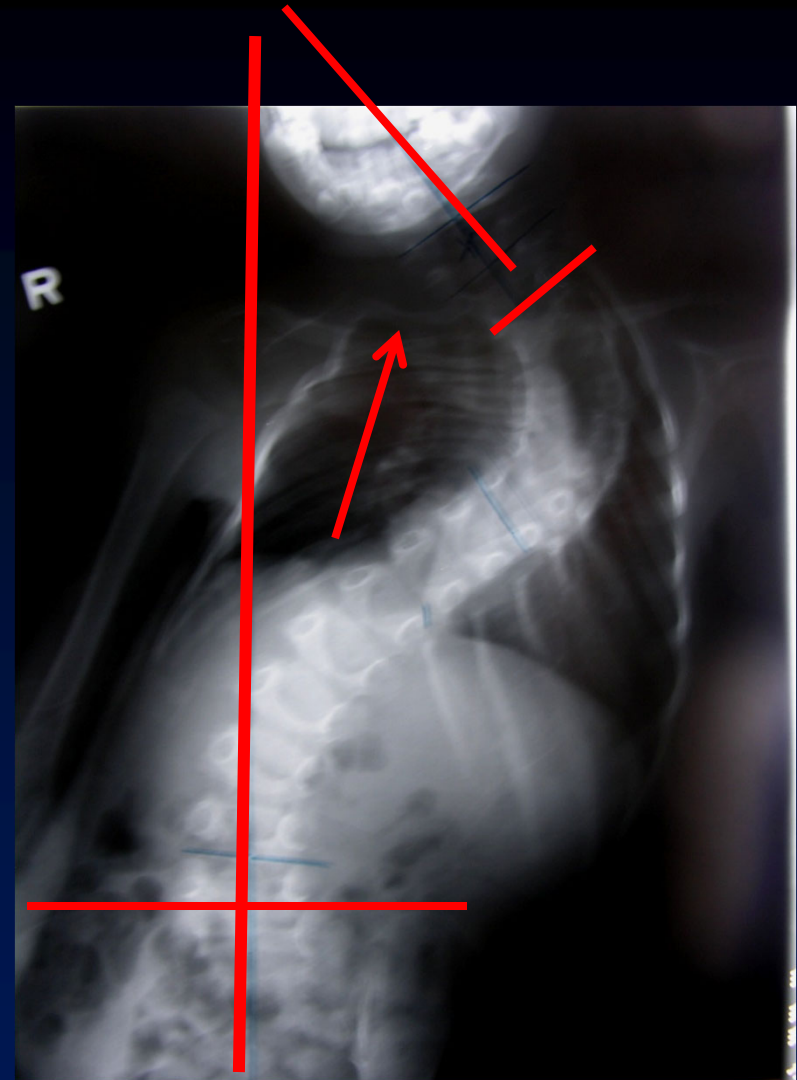
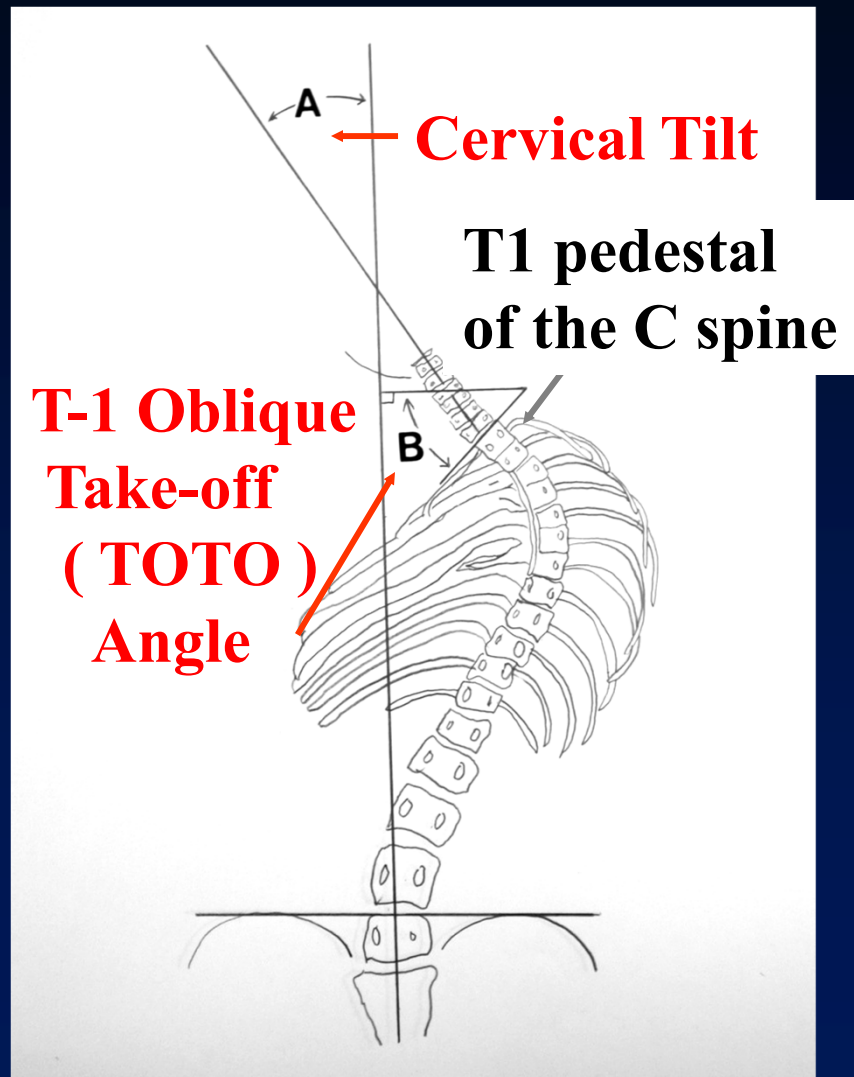
Progression



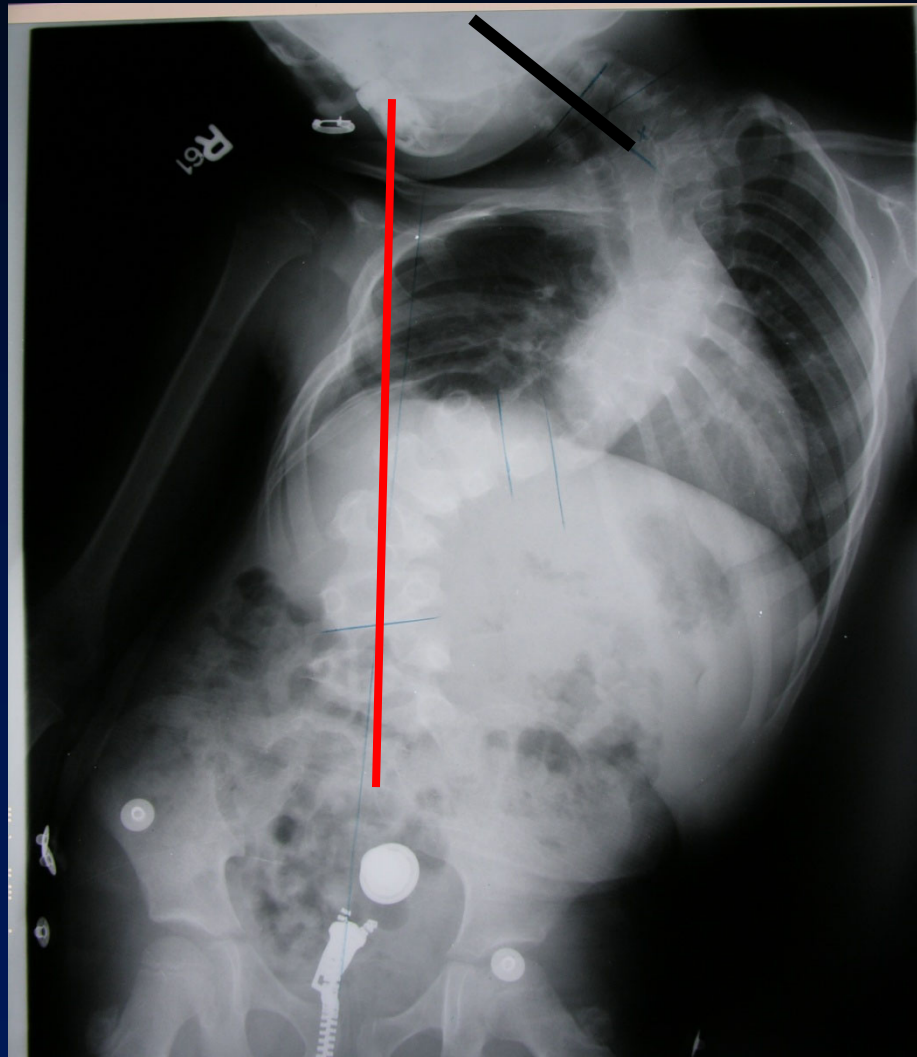


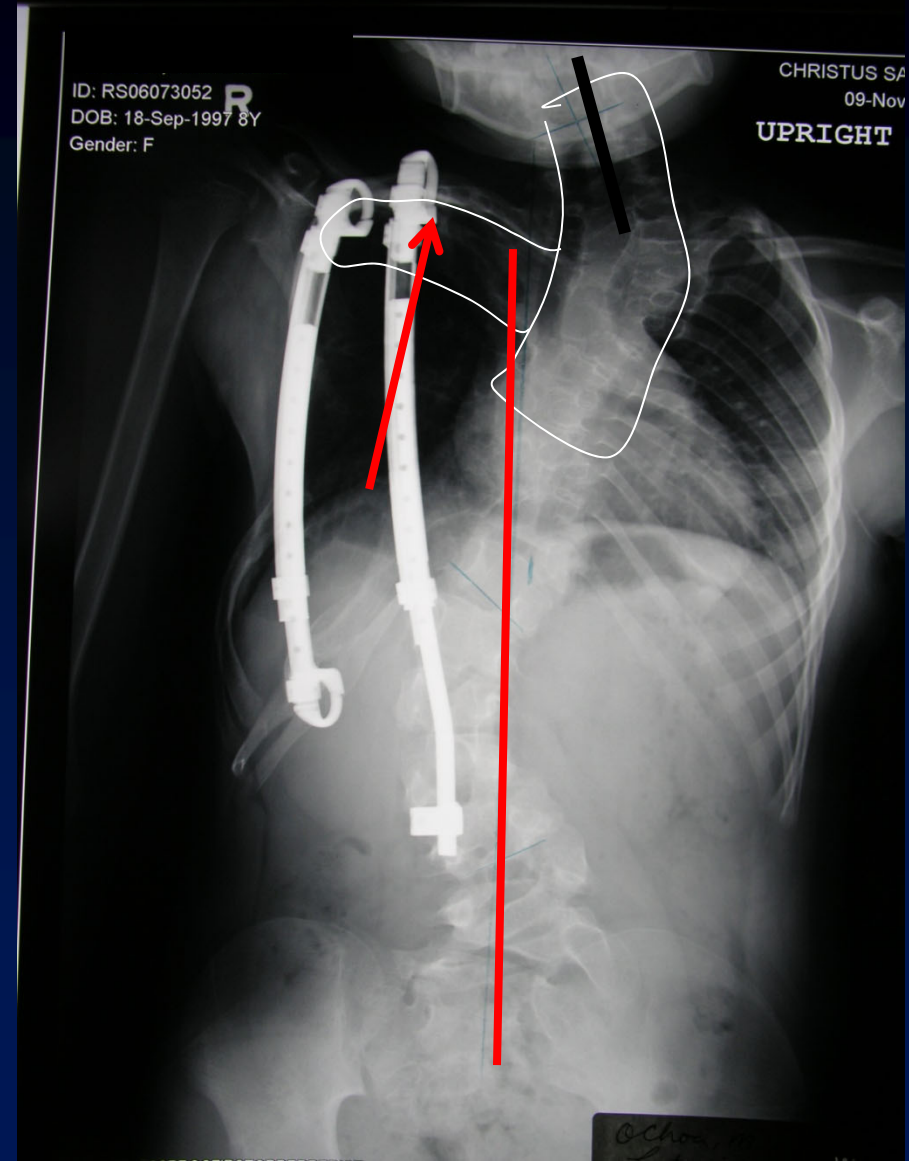
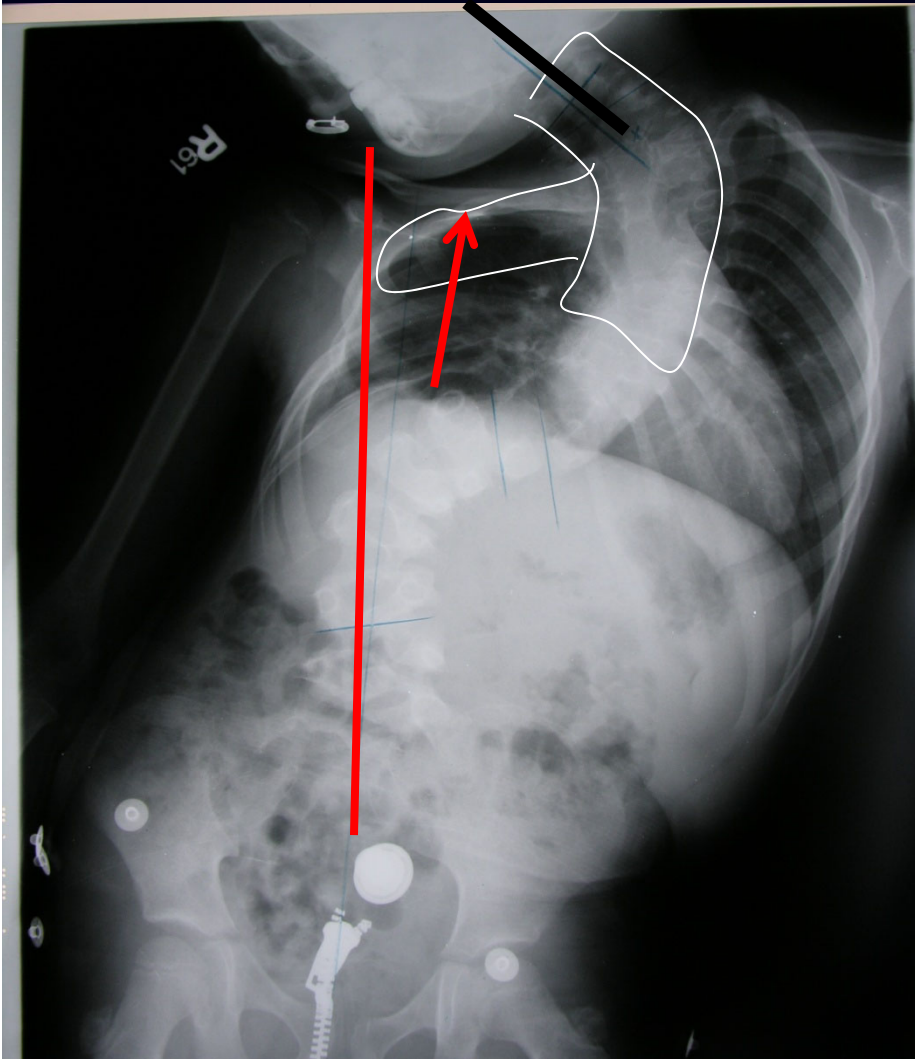
T1-8:
(66% of T spine)

What will be is the long term pulmonary sequellae?

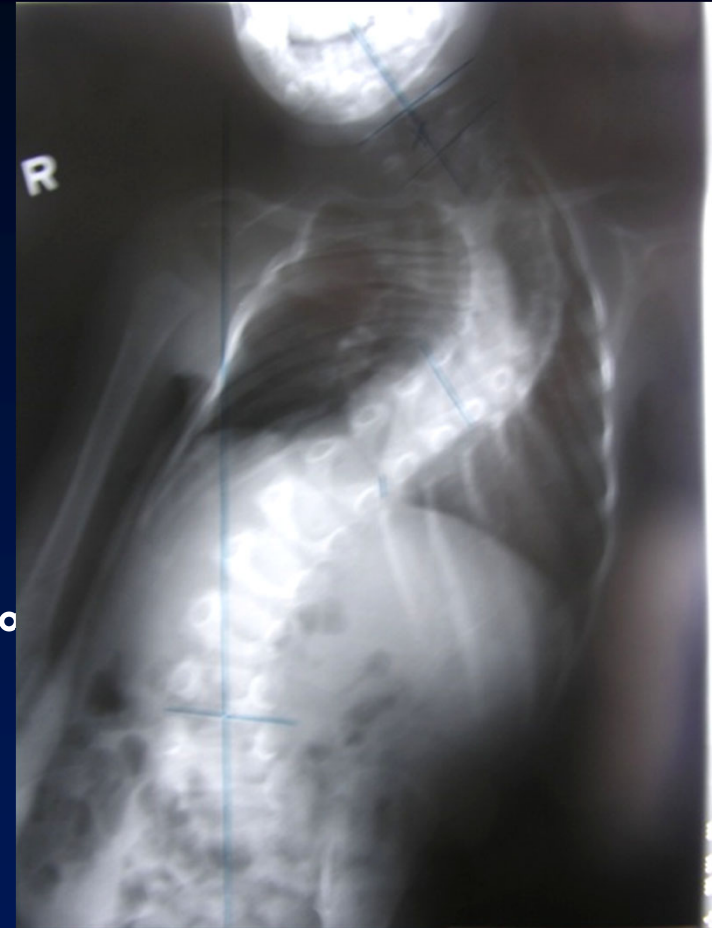


6 y/o female



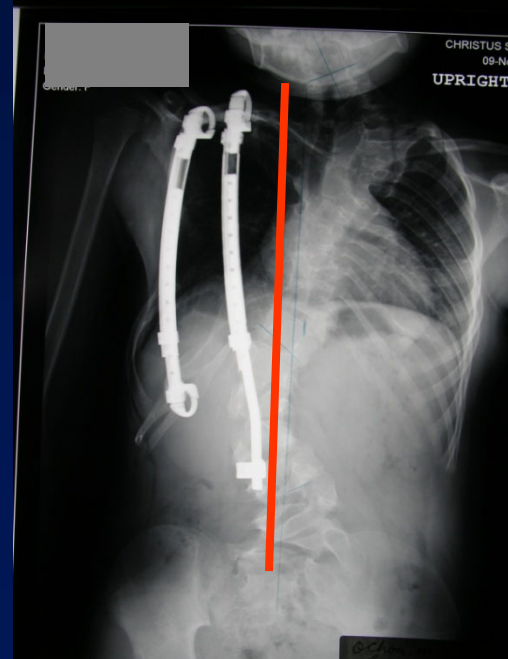
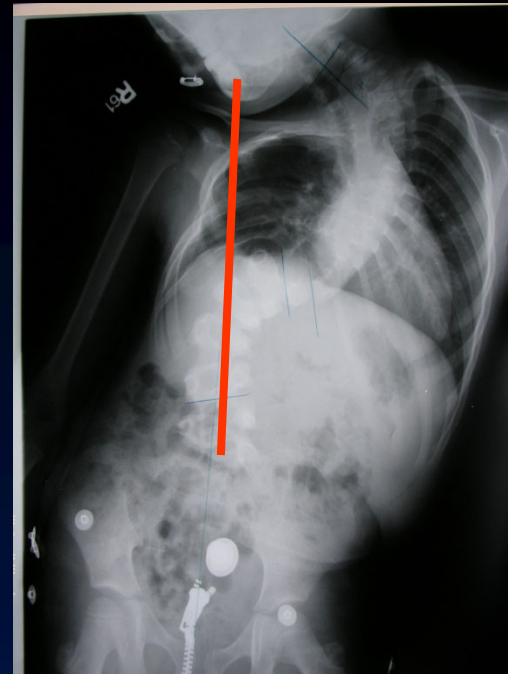


- **14 patients: 8 male/6 female.**
 - age at surgery 4.4 yrs
 - F/U was 3.4 years
- **Cervical tilt angle 28.8 ° pre-implant**
 - 26.9° post-implant
 - 22.9° at F/U. (- 5.9°)
- **TOTO angle pre-implant 34.4°**
 - f/u 31.5° (- 2.9°)
- **Thoracic curves were an avg 78.4° pre-implant**
 - 53.5° at F/U. (- 20°)



- **Head decompensation 3.61 cm pre-implant**
 - 1.53 cm at F/U (- 2.08 cm)
- **Trunkal decompensation 3.86 cm pre-implant**
 - 1.18 cm f/u (-2.68 cm)
- **Shoulder Horizontal angle preop, 8.9°**
 - 6.71° at follow-up. (- 2.19°)
- **FVC (n = 10) 53% nl**

CTIS 



Co-Morbidities

- 36% C spine anomalies
- 21% cong heart disease
- 21% renal abnormalities

- 43% spinal cord abnormalities
 - 1 syrinx
 - 5 tethers

Complications

- 5 pts had no complications
- 9 pts:
 - Asymptomatic migrations
 - 3 pts proximal rib cradles (3.5 yrs)
 - 4 pts spinal hooks (3.25 yrs)
 - 1 pt S -hook fractures
 - 3 pts deep wound infections
 - 1 skin slough
 - 1 transient brachioplexopathy
 - 1 acute rib avulsion
- No spinal cord injuries
- Is it worth it?



- **Mid-thoracic VEPTR opening wedge thoracostomy can stabilize cervical tilt associated with thoracic congenital scoliosis and fused ribs**
- **Spinal growth continues with probable benefit for lung growth**
- **The procedure is not technically demanding**
- **Complications are limited and are treatable**
- **No compromises in possible future spinal surgery are seen**
- **May have use for primary cervico-thoracic scoliosis without rib fusion**