

# COMPLICATIONS IN EARLY ONSET SCOLIOSIS SURGERY

The steep part of the learning curve or the  
thin end of the wedge?

Jonathan H Phillips, BSc, MB.BS

Raymond Knapp, MD

Jose Herrera-Soto, MD

Orlando, Florida USA

# Methods and Materials

- Retrospective chart and Xray review
- All complications noted during the entire treatment phase
- Included Growing rods and VEPTR
- Single center, three surgeons

# Results

- March 2002 to February 2007
- 44 procedures
- 20 patients
- Age 8 +1 (2+3 to 12+7)
- Therefore early development of this program at our center

# Results

- 2.2 procedures per patient
- Only one has been definitively fused

# Results

- 80% complication rate in VEPTR
- 64% complications in Growing Rods
- 20% of complications occurred in other centers, we inherited the patients

# Results

- “local” complication rate was 45% - compares with Akbarnia et al.
- Alarming high rate of deep infection (20%)
- After multiple surgeries in Growing Rods
- After index surgery in 3 VEPTRS
- Few implants were salvageable

# Results

- Diagnoses were often very rare syndromes: Telosteogenesis, orofacial digital, camptomelic, Jeunes-like, Coffin-Lowry, arthrogryposis, Williams, Townes – Brock, Soto's.
- Also Three congenitals, three SMAs, two CP, one syrinx.

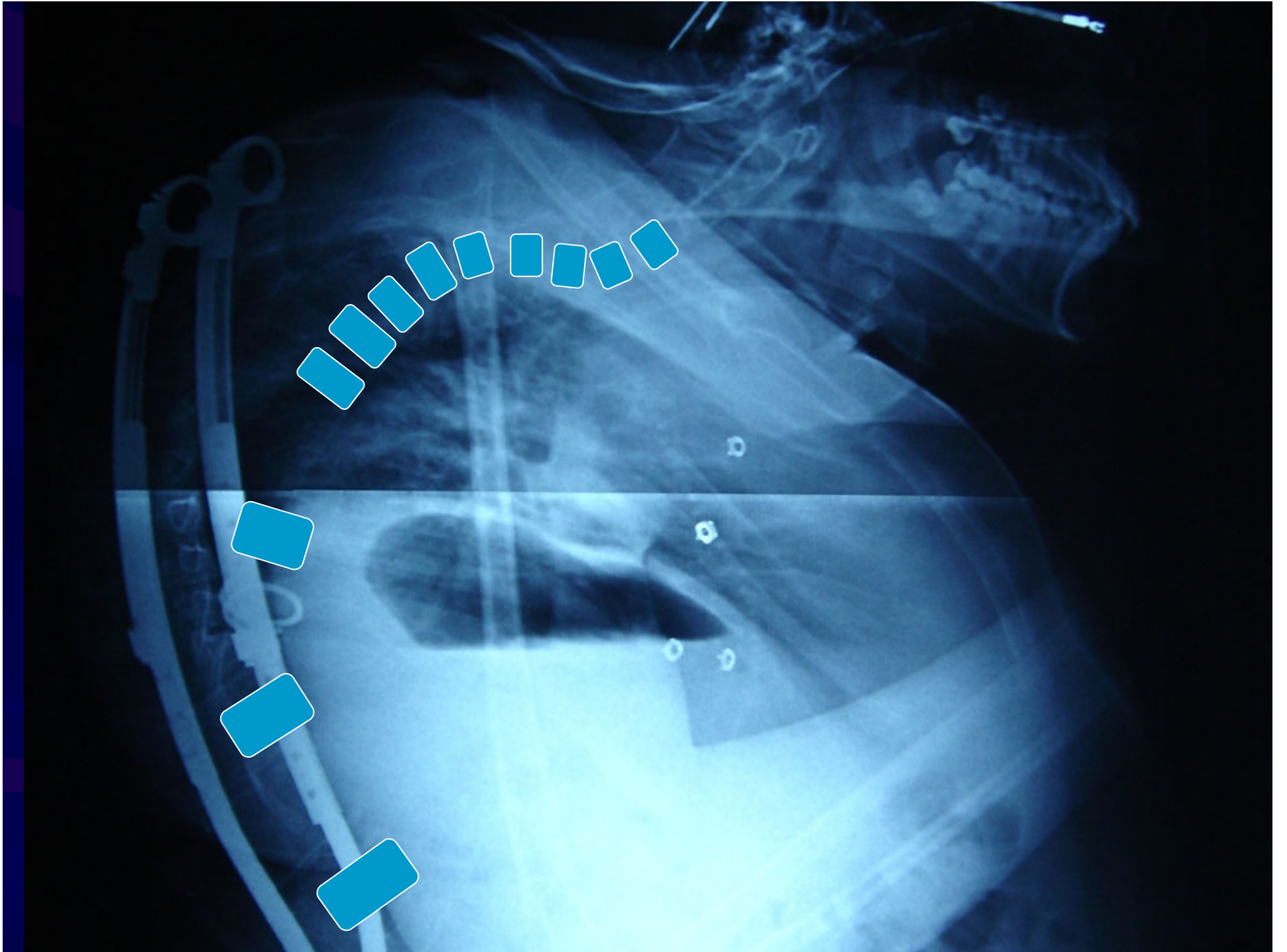
# Results

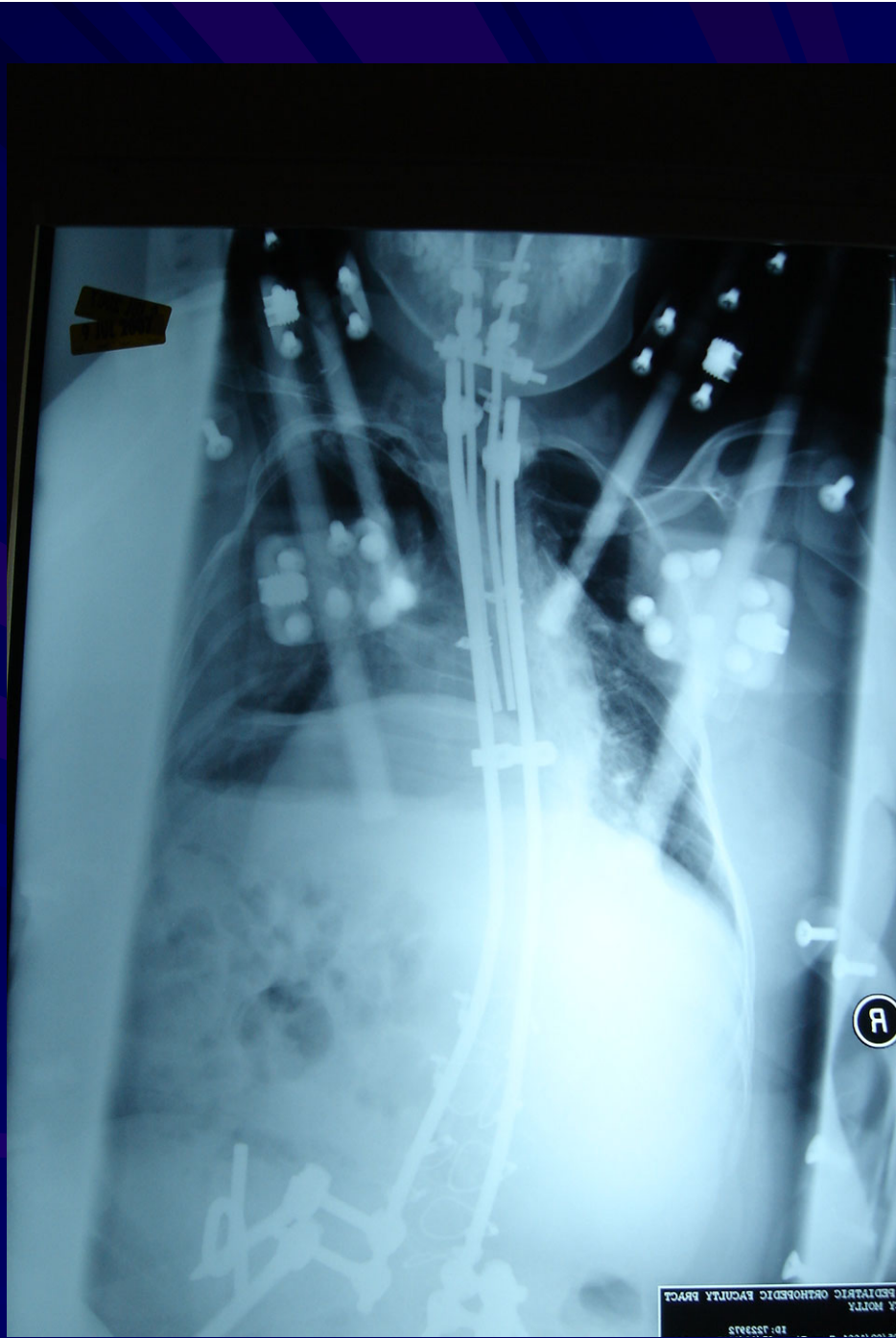
- One death at time of abstract submission
- One more since then, non perioperative



# Clinical example

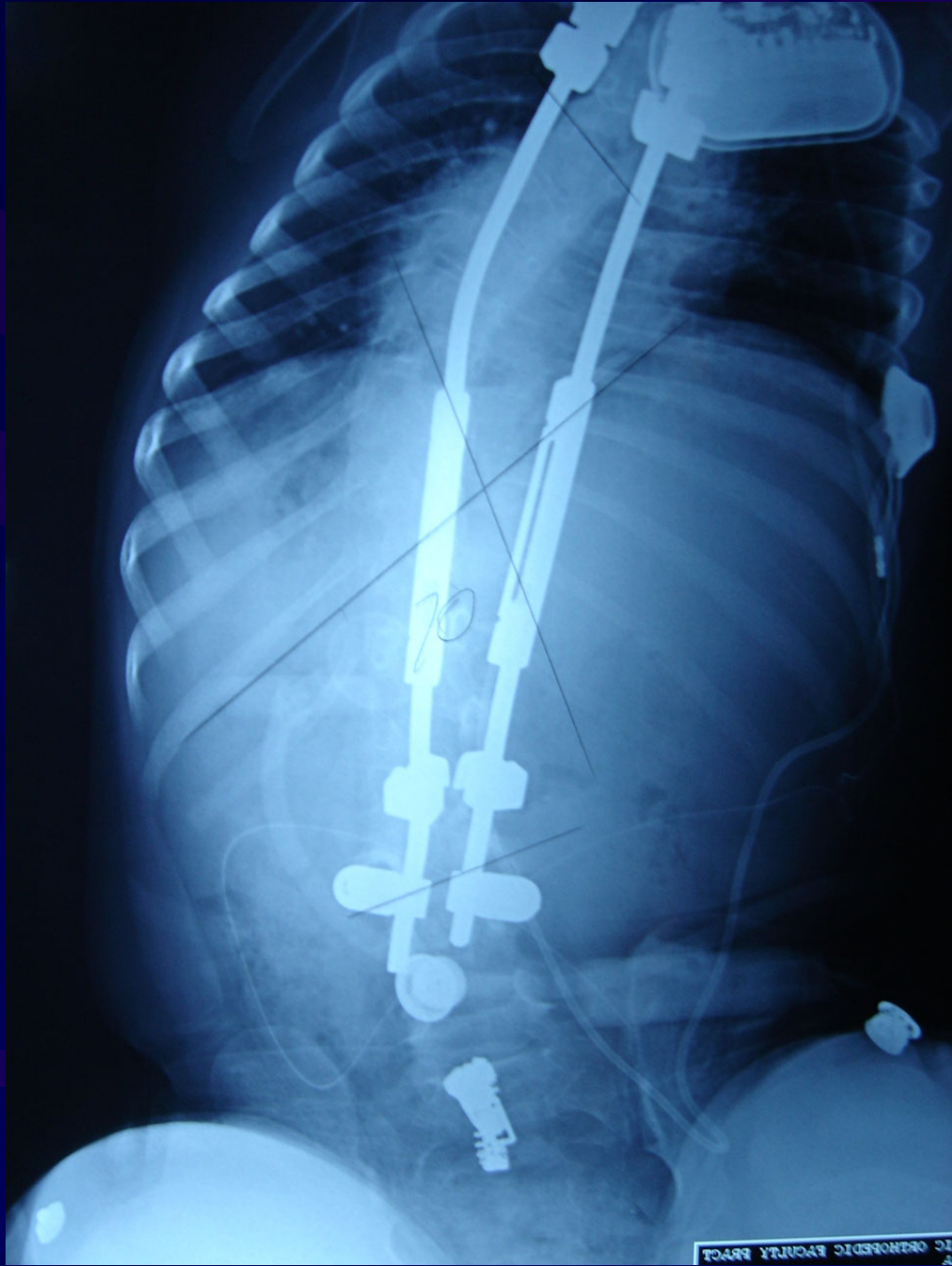
- MT, 12 years old at time of definitive fusion. Athrogryposis and dystrophic muscle?
- VEPTR kyphogenic, junctional kyphosis order of 100 deg. Tracheoscoliosis.
- VEPTR removed, halo traction
- Occiput to sacrum fusion





# Clinical Example

- MG, severe CP quad, nares colonised with MRSA
- Stiff 70 degree curve
- Successful index Growing Rod at age 5
- Multiple infections earlier 2007 (age 7)
- Failed debridements x 3
- Implants removed, massive respiratory collapse in hours, died of G. negative sepsis 3 weeks later



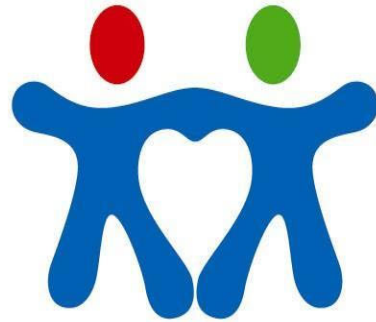
# Discussion

- This patient group v. high risk even c/w other high risk groups
- Infection rate 20% (includes 2 from elsewhere)
- Our (Orlando) infection rate for neuromuscular scoliosis one fifth of this (published this summer)

# Discussion

- Assume at least for Growing Rods, that infection is consequence of multiple surgeries through same scar
- Implant failure related to poor bone, multiple cycling
- New designs circumvent these issues?

Gracias!



**ARNOLD PALMER HOSPITAL**  
**For Children**

*Supported by Arnold Palmer Medical Center Foundation*