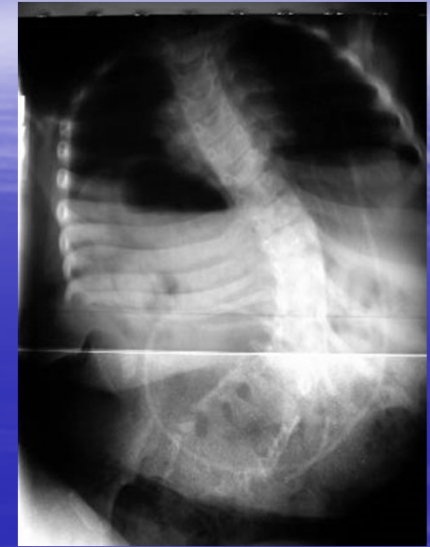


# Growing Rods in Myelomeningocele for Scoliosis Treatment: Long Term Follow-Up

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# Introduction

- Severe progressive scoliosis is often seen early in the life of spina bifida patients
  - Majority are upper lumbar or thoracic level neurologic involvement
  - Early fusion yields unsatisfactory results
    - Short trunk
    - Thoracic insufficiency



# Reporting on our 2 year experience using growing rods in myelomeningocele

## Methods

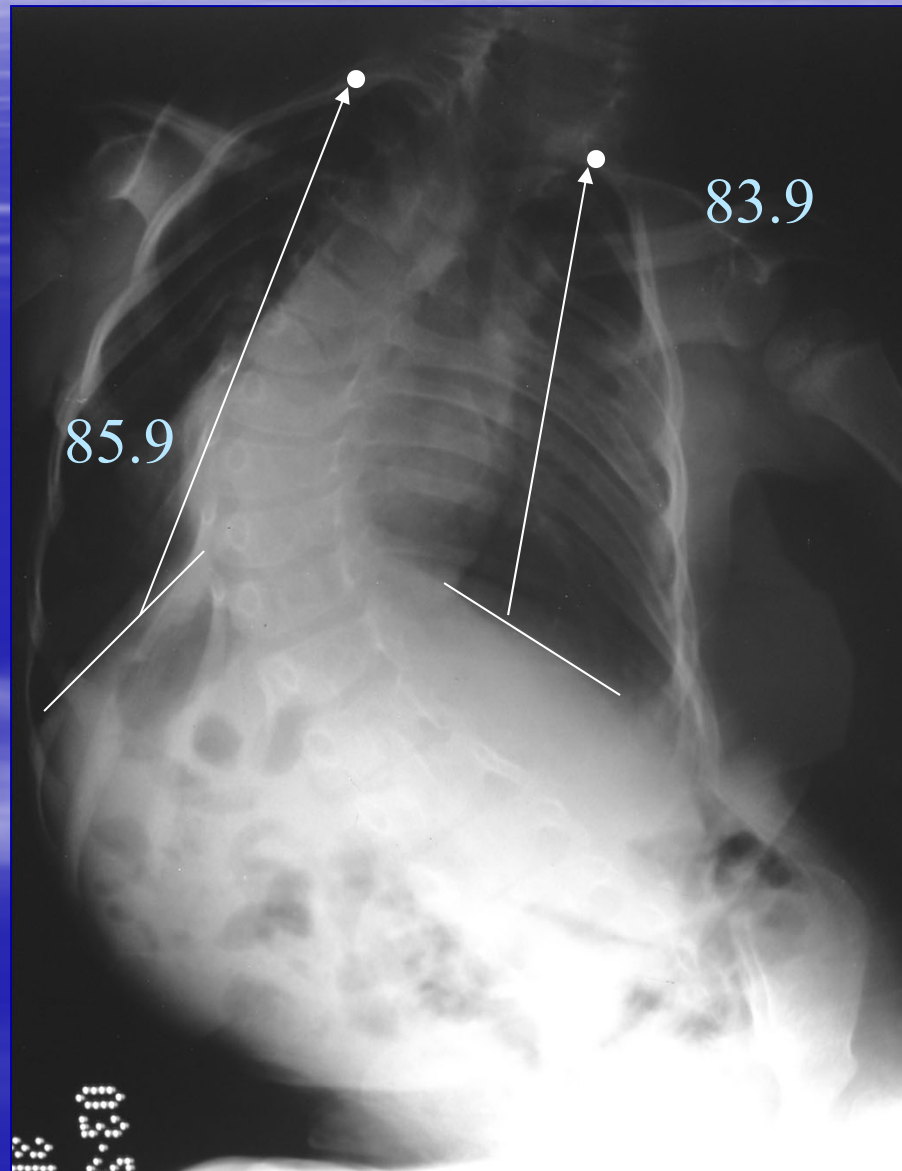
- 15 patients
- Age 6.2 yrs at surgery (range 3-10 yrs)
- All high neurologic level myelo.
- All with 2 yr follow-up (2-14 yrs.)
  - 6 yr. average follow-up

# Methods

- Age 7 yrs. at initial surgery
- 7 pts. have reached final fusion and instrumentation
- Average lengthening every 6 months

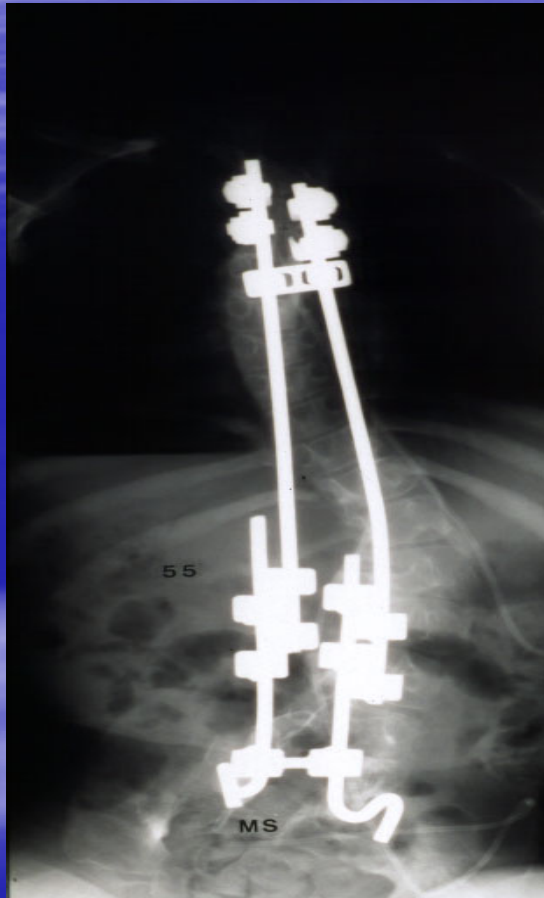
Scoliosis  $74^{\circ}$  (Range 40-100 $^{\circ}$ )

SAL

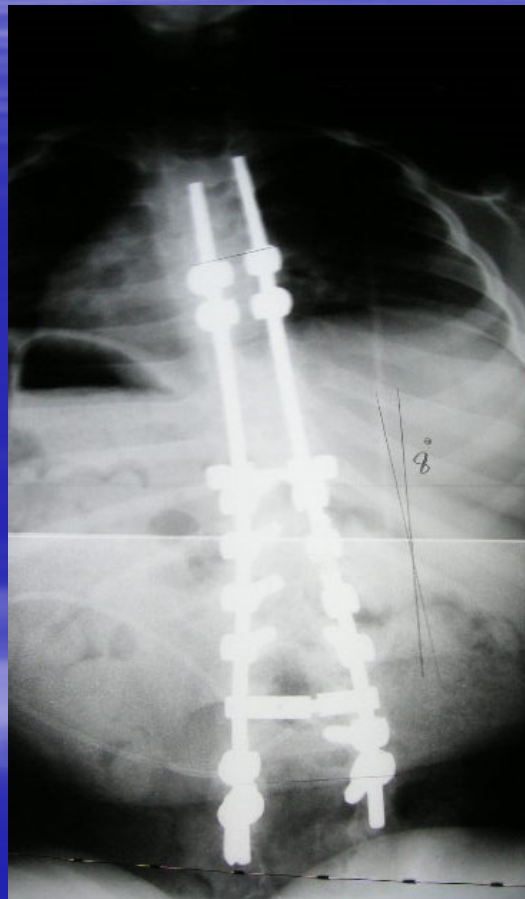




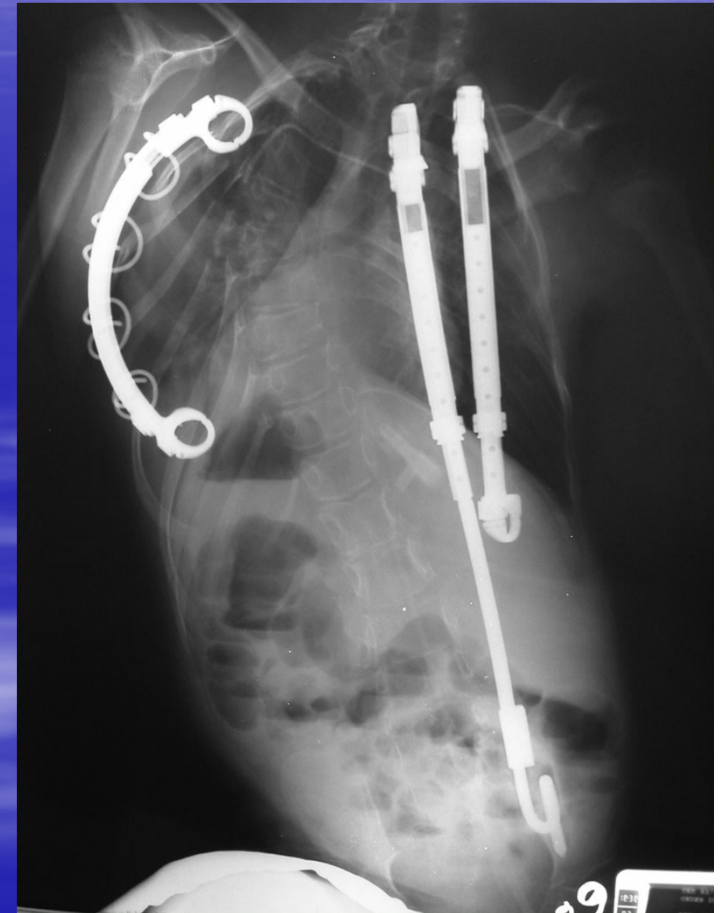
# Different constructs used for corrections



Traditional  
Dual Rod (5)



Shilla Self-  
Lengthening Rod (1)

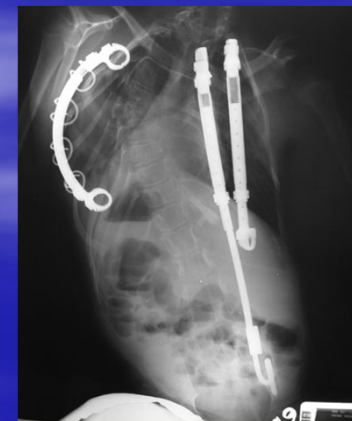
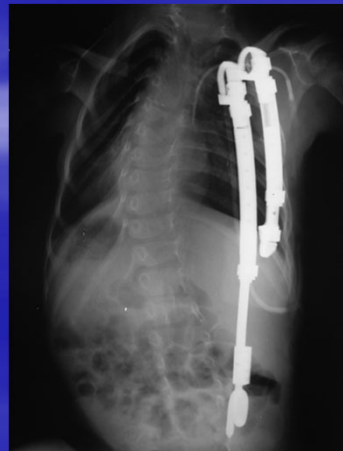
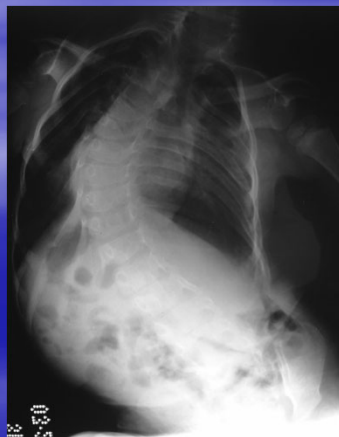
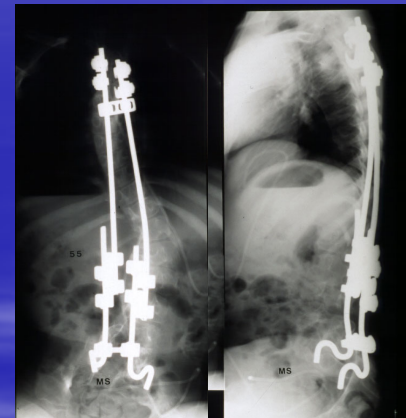
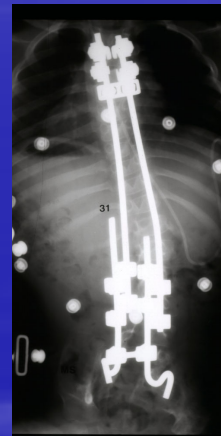
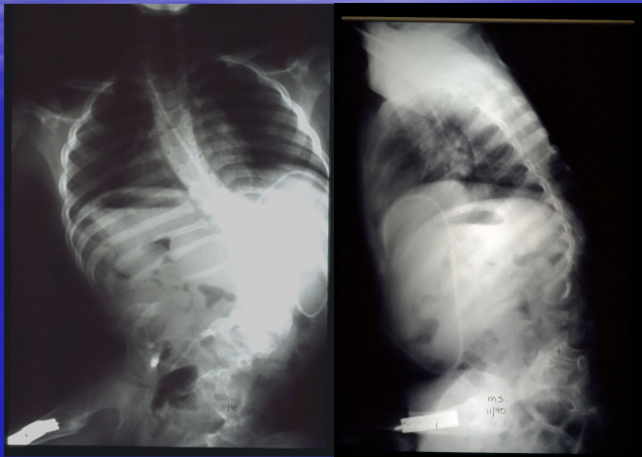


VEPTR (3)

# 5 Traditional Dual Rod Constructs

## 3 Hybrid VEPTR's

- Lengthened every 6 months



# Results

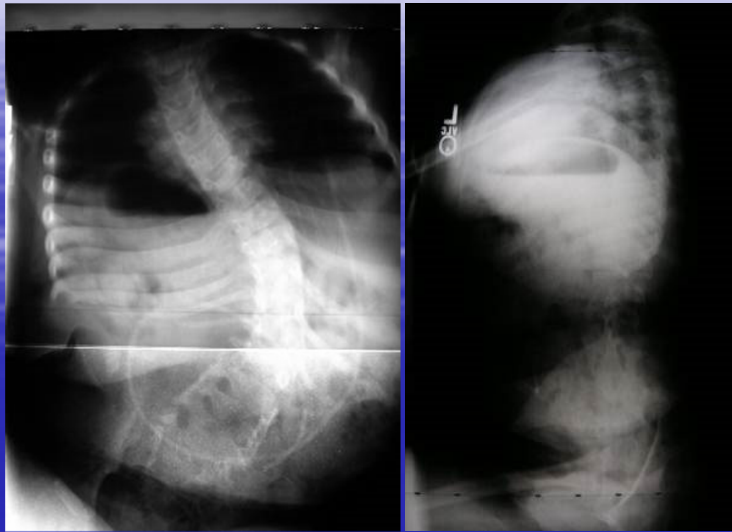
- Curve  $74^{\circ} \rightarrow 36^{\circ}$  at 6 wks  $\rightarrow 42^{\circ}$  at follow-up
- Trunk height improved 12%
- Number of procedures 86 (15 pts.)
  - Average 5 per pt.
- Number lengthenings averaged 4 per pt.
- Space available for lung (SAL) increased 11% overall



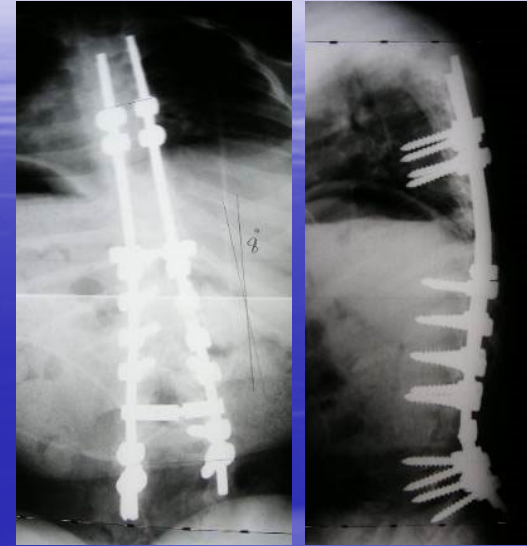
# Complications

- 3 pts. with fractured rods
  - One rod migrated into sacrum without consequence
- No infections
- No changes in neuro level
- Complication rate 5.7%
- One death unrelated to spine

AA  
Spina Bifida  
Age at Surgery: 7+11



Preop



6 wks postop



3 yrs postop

# Conclusions

- Complex group successfully lengthened at two year follow-up
  - 7 have reached final fusion
  - 15 pts. had :
    - ↑ Truncal height
    - ↑ SAL
    - Acceptable complication rate