



JOHNS HOPKINS
MEDICINE

Growing Rod and VEPTR Perform differently for Idiopathic EOS at 5-year follow-up

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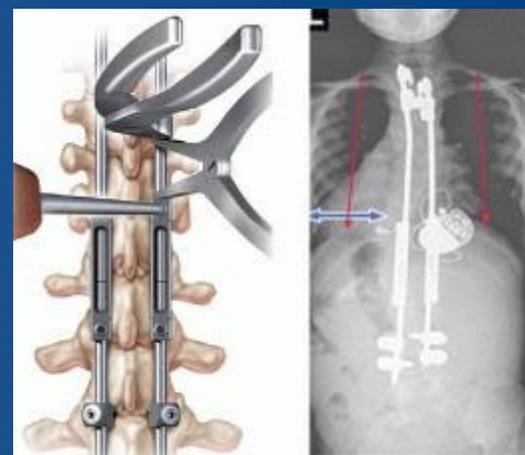


ORTHOPAEDIC SURGERY



Introduction

- While VEPTR uniquely suited for rib deformities
- IEOS has been treated with VEPTR or GR



PURPOSE



Compare outcomes for matched cohorts of patients undergoing distraction for IEOS

GR and VEPTR

Hypothesis:

- Two systems will produce varying amounts of thoracic height gains and curve correction
- Complications are treatment specific

STUDY DESIGN



GSSG and CSSG databases used to identify:

- GR and VEPTR patients

- idiopathic etiologies

 - Included syrinx, Chiari

- minimum 5-year follow up

- ≥ 4 lengthenings

Compared pre-operative, immediate post-operative, and most recent visit prior to final treatment

GR Pre-op vs FFU

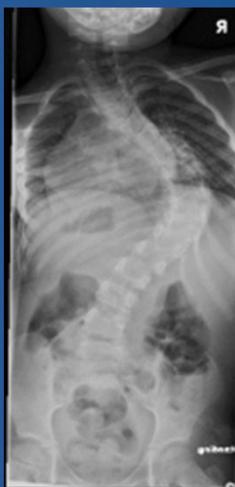
Case #1



Case #2



Case #3



Case #5



PREOP

FFU





VEPTR Pre-op vs FFU

Case #6



Case #7



Case #8



Case #9



PREOP

FFU



RESULTS

TABLE I: Demographic and Surgical Data

	<u>GR</u>	<u>VEPTR</u>	<u>P value</u>
Number	50	22	0.318
Age	5.5	4.3	0.044
Years of follow up	8.3	7.7	0.566
Number of lengthenings	8.5	9.8	0.188
Number of surgeries	9.6	14.8	<0.001

Radiographic Data



	<u>GR</u>	<u>VEPTR</u>	<u>P value</u>
Pre Cobb	77.6	74.3	0.388
Post Cobb	38.3	53.3	<0.001
Pre-Post % Cobb	50.0%	27.3%	<0.001
Pre Final T1S1	351.4	314.6	0.003
Change T1S1	96	76	0.04
Pre Final T1T12	219.3	188.7	0.004
Post Kyphosis	38.2	40	0.748

TABLE III: Complications Data

	<u>GR</u>	<u>VEPTR</u>	<u>P value</u>
Complication (Incidence)	1.8	2	0.296
Implant Comp (Incidence)	1.3	1.4	0.413
Wound Comp (incidence)	0.3	0.5	0.017
Medical Comp (incidence)	0.2	0.1	0.415



Bilateral vs Unilateral

- Bilateral constructs (VEPTR & GR) maintained better curve correction when compared to unilateral constructs.
- Bilateral VEPTR constructs had 27% more wound complications than unilateral constructs.
- Bilateral GR constructs experienced fewer wound complications than dual rod constructs.



Conclusion

- Compared to VEPTR, GR patients had significantly greater initial correction of their main curves and maintained this correction at latest follow-up
- -showed greater continued growth of thoracic height during the lengthening period
- GR patients had a lower incidence of wound related complications.

THANK YOU



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