



Upper Foundations Implanted Cephalad to Upper End Vertebrae of Kyphosis Decreases Post- Operative Proximal Junctional Angle

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I DO NOT HAVE ANY CONFLICTS OF INTEREST TO DISCLOSE.

Background

- Proximal Junctional Kyphosis (PJK)
 - Potential complication of distraction-based treatment for Early Onset Scoliosis (EOS)



Background

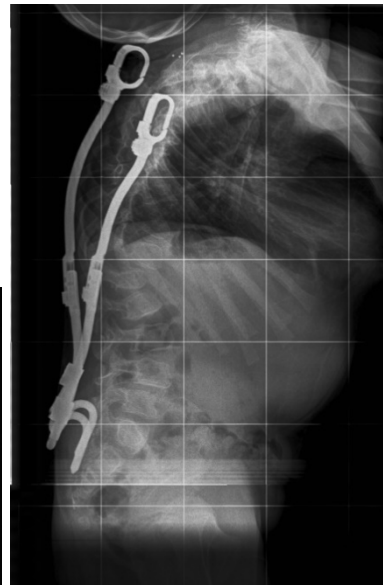
- Proximal Junctional Kyphosis (PJK)
 - Dx: sagittal plane measurements of Proximal Junctional Angle (PJA)



PJK definitions:

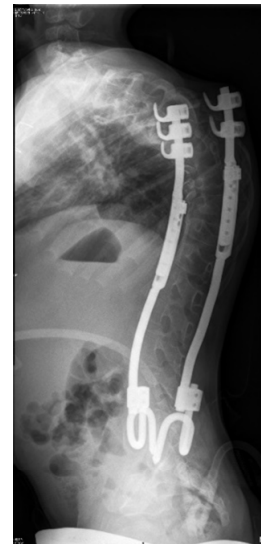
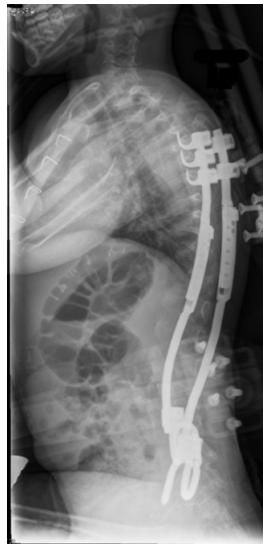
- 1) PJA-1: Angle between caudal endplate of Upper Instrumented Vertebrae (UIV) to cephalad endplate 2 vertebrae above UIV
- 2) PJA-2: Measuring 2 levels below UIV to 2 levels above UIV.

Proximal Junctional Kyphosis



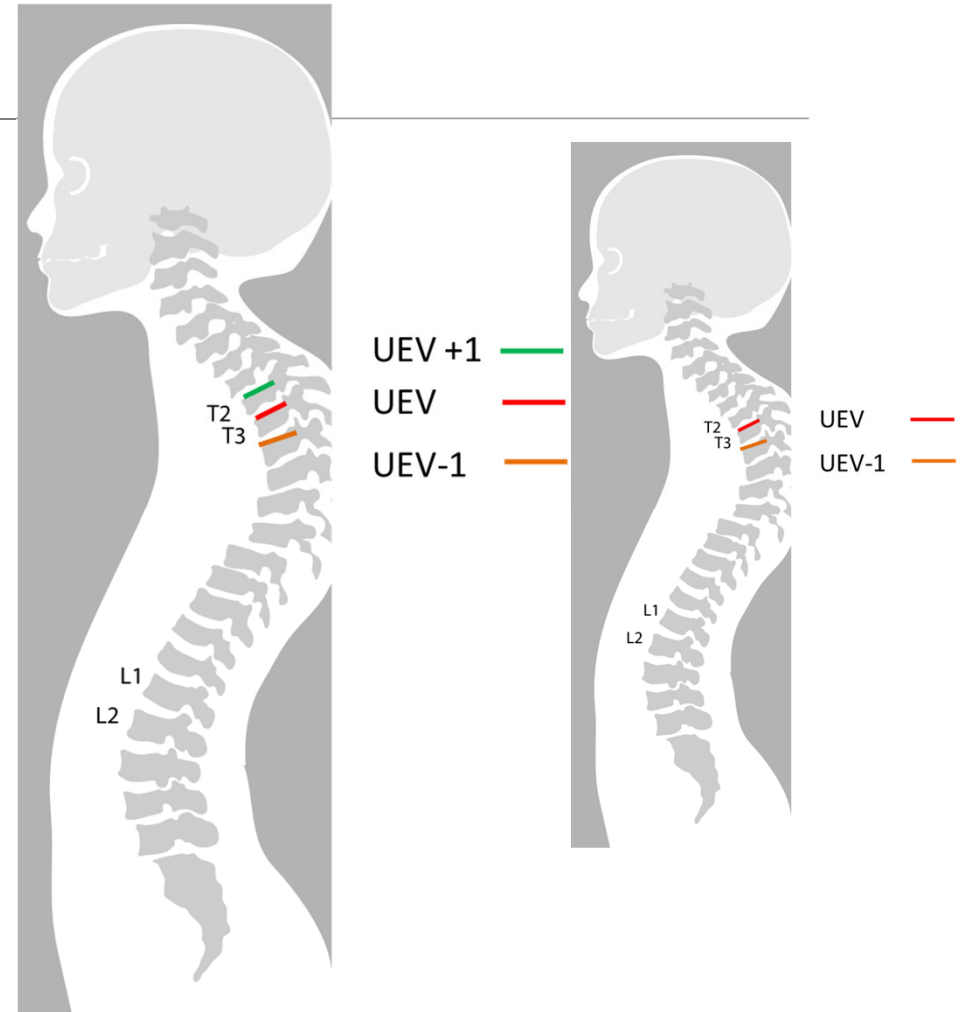
Purpose

- Compare post-op PJA in patients with UIV above, at the same level, or below the upper end vertebrae of **kyphosis**



Methods

- Retrospective, clinical and radiographic database review
- Primary outcome variables:
 - Mean PJA in 3 groups:
 - Group 1 - UIV above UEV
 - Group 2 - UIV at UEV
 - Group 3 - UIV below UEV



Results

- 295 children identified
- At time of implantation:
 - Mean age = 5.8 years
 - Mean scoliosis = 72°
 - Mean kyphosis = 50°

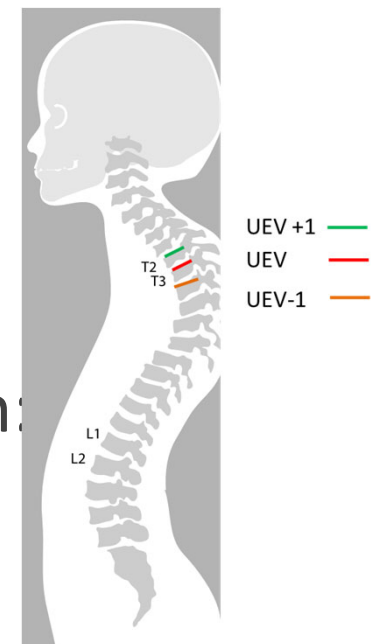


Results

Etiology	n =
Syndromic	82
Neuromuscular	77
Congenital	56
Idiopathic	40
Unknown	40

Results (PJA-1)

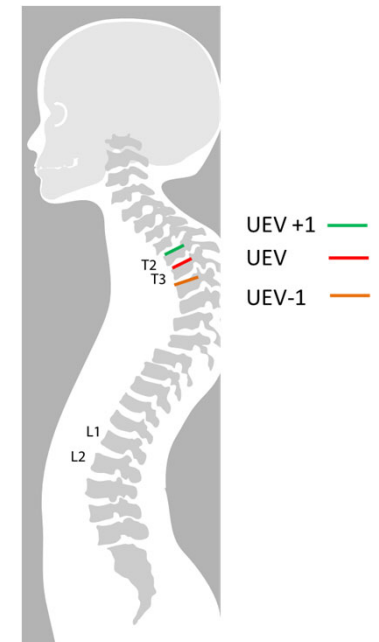
Group:	1 (UIV above UEV)	2 (UIV = UEV)	3 (UIV below UEV)
Mean PJA-1 (°)	5.5	8.4	8.0



- Mean PJA-1 - Group 1 sign. LESS than:
 - Group 2 **p=0.02**
 - Group 3 **p=0.03**
 - Group 2/3 **p=0.01**

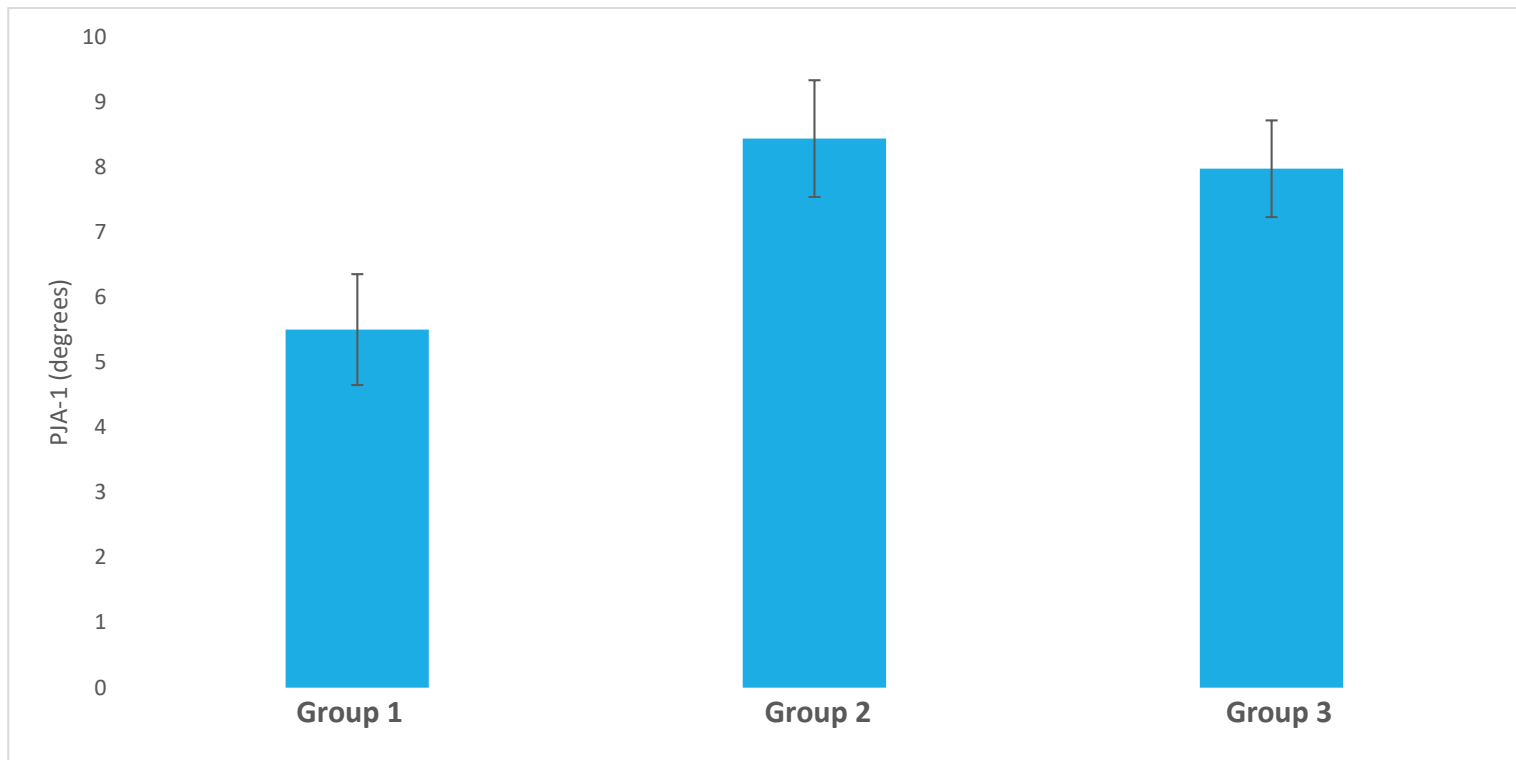
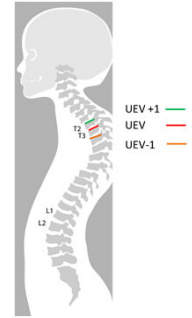
Results (PJA-2)

Group:	1 (UIV above UEV)	2 (UIV = UEV)	3 (UIV below UEV)
Mean PJA-2 (°):	14.2	17.7	18.2



- Mean PJA-2 - Group 1 sign. LESS than:
 - Group 3 **p=0.04**
 - Group 2/3 **p=0.03**
- Mean PJA-2 - Group 1 LESS than:
 - Group 2 **p=0.08**

Results



Conclusions

- UIV above UEV in growth-friendly surgery:
 - Significantly lower PJA

Future Directions

- Decreased risk of clinically significant PJK after growth-friendly surgery?



Thank You!