THE RATE OF PROXIMAL JUNCTIONAL KYPHOSIS IN DUAL GROWING ROD TREATMENT WITH PEDICLE SCREWS AS PROXIMAL ANCHOR

Hacettepe University Spine Study Group
Ankara/TURKEY

Saygin Kamaci
H. Gokhan Demirkiran
Rustam Jalilov
Muharrem Yazici
Proximal Junctional Kyphosis (PJK)

- One of the potential implant-related complication of growing rod treatment

- Incidence; 7-56%

- Risk factors:
  - Greater thoracic kyphosis,
  - Greater proximal thoracic scoliosis
  - More proximal level of lower instrumented vertebra
  - Proximal anchor other than Pedicle screw construct
  - Age
AIM

- Find out the rate of PJK in our series treated with standard surgical technique
- Find predisposed risk factors
- Proportion of this ratio with measurement methods
Materials & Methods

• 37 children (22 female, 15 male)
  – Idiopathic (10)
  – Congenital (11)
  – Syndromic (5)
  – Myelomeningocele (7)
  – Neuromuscular (3)

• Proximal ligamentous and capsular structures were protected during the index surgery and re-exposures

• Follow-up time; 63 month (24-104)

• Age at time of index operation; 73 month (45-138)

• Number of lengths; 9 (3-14)
- PJK: An angle $\geq 10^\circ$ increase between the immediate post-op and final follow up values.

- 4 screw : 33
- 3 screw + 2 hook : 1
- 2 screw + 2 hook : 3
• GSSG technique (PJK1)
  - One level cephalad to upper instrumented vertebra and lower end plate of the upper instrumented vertebra

• SKAGGS technique (PJK2)
  - Upper end plate of the vertebra two level cephalad to upper instrumented vertebra and lower end plate of the vertebra two level caudal to the upper instrumented vertebra
Results

• Overall PJK rate was 7%

• 2 patients (6%) were revealed with PJK1 method

• 3 patients (9%) were revealed with PJK2 method

• There is no statistical difference between the two methods (p =?)
Complications

- 6/37 (16%) patients had screw pull out or loosening
  - 2/6 developed PJK
Conclusion

• One of the potential implant-related complication of growing rod treatment

• With careful surgical technique - rate

• Different measurement techniques – does not have a significant increase effect on the PJK rates

• Revision of the GSSG measurement technique does not seem to be revised