The effect of dual growing rod instrumentation on the apical vertebral rotation in Early Onset Idiopathic Scoliosis

Vusal Ismayilov, Gokhan Demirkiran, Saygin Kamaci, Muharrem Yazici

Hacettepe University,
Ankara Turkey

Disclosures

- Vusal ISMAYILOV, Gokhan DEMIRKIRAN, Saygin KAMACI
  - No disclosure
- Muharrem YAZICI

  K2M, J&J DePuy Spine, *Consultant*

  ACTA Orthop Traumatol Turcica, *Vice-Editor*

  EPOS, *President*

  SRS, *Board of Director*

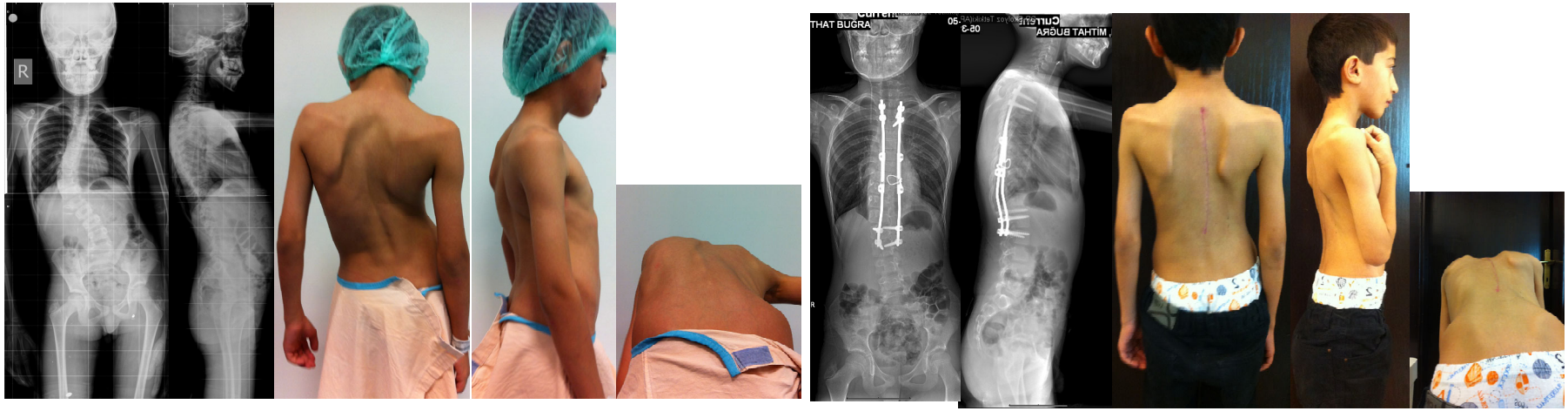
  GSF, *ExCom member*

Journal of Pediatric Orthopaedics
22:492–496 © 2002 Lippincott Williams & Wilkins, Inc., Philadelphia

Three-Dimensional Evolution of Scoliotic Curve During Instrumentation Without Fusion in Young Children

Emre Acaroglu, M.D., Muharrem Yazici, M.D., Ahmet Alanay, M.D., and Adil Surat, M.D.

- Apical vertebral rotation increases with single GR
- Effect of DGR on transverse plane?



Aim

- To evaluate the effect of dual growing rod instrumentation technique on the apical vertebral rotation

Material & Methods

- Early onset idiopathic/-like scoliosis undergone DGR treatment
- 12 patients (5 male & 7 female)
- Mean age at the time of DGR
  - 5+9 years(3-9)
- Mean follow up
  - 74 months
- Mean number of lengthening
  - 10.8 (9-13)
- X-rays, before and after index operations and final fu
- CT scan at latest follow up
- Selection of apical vertebra
  - SRS criteria

Material & Methods

- Apical vertebra rotation(AVR)
  - Perdriolle & Vidal's method on X-ray
    - Pre-index
  - Aaro & Dahlborn's method on CT scan
    - At final follow up
- T1-T12 and T1-S1 heights
  - Post-index and at latest follow up
- All measurements were blindly done twice by the same surgeon

Results

- Apex
  - T in 4
  - T9 in 5
  - T10 in 3
- 3 graduates
  - Definitive instrumentation and fusion
    - 2 patients
  - Rod removal only
    - 1 patient
- Infection, neurologic complication, treatment failure
  - None

Results

Coronal plane

	Pre-index	Post-index	Final FU
Scoliosis	66.5º(30-98)	20º (10-46)	16.5º (4-42)

Results

Spinal growth

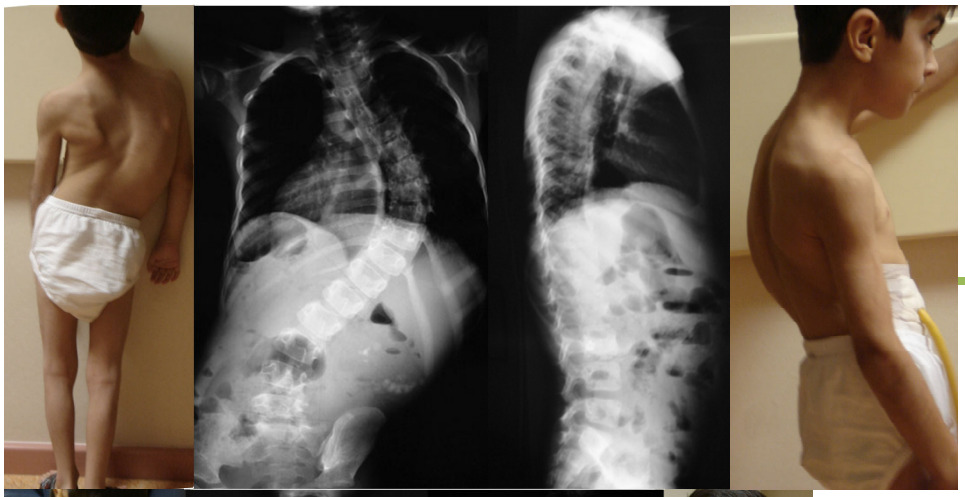
	Pre-index	Post-index (cm)	Final FU (cm)
T1-12		16.4(12-18.3)	22.5(19.6-25.4)
T1-S1		25.6(21.5-28.1)	36.3(29.6-39.5)

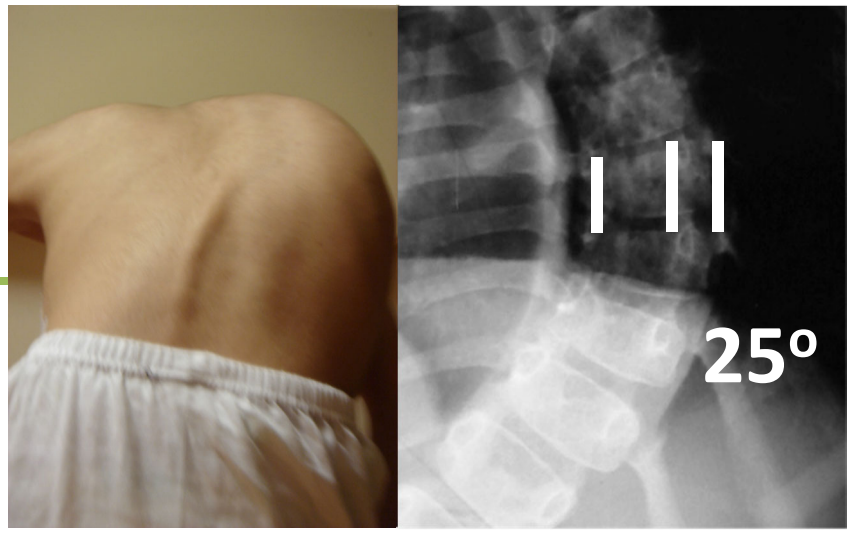
Results

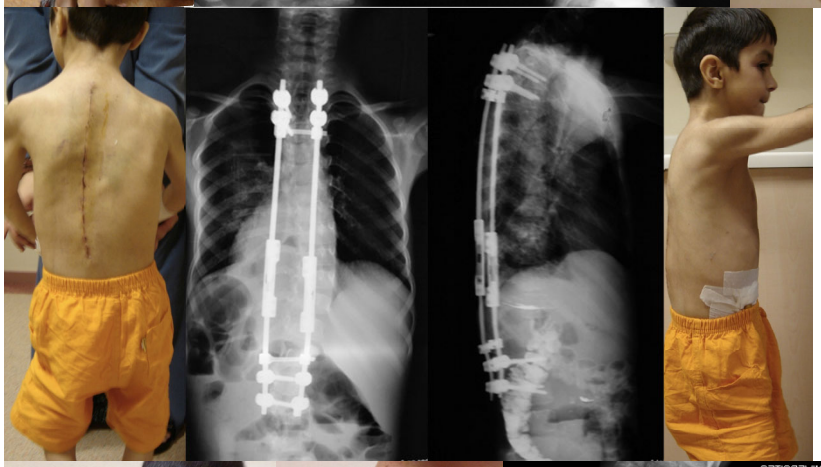
Axial plane

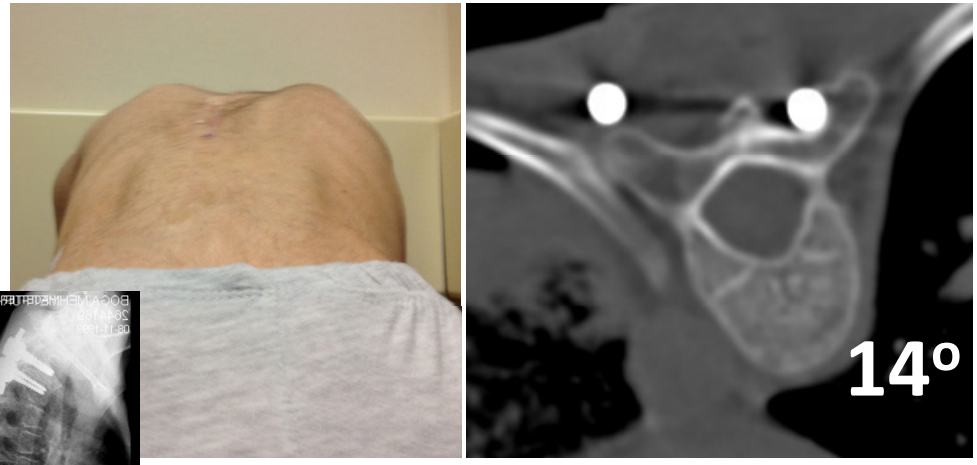
	Pre-index	Post-index	Final FU
AVR	26,5°(16-33)		15° (4-32)

p= 0.005

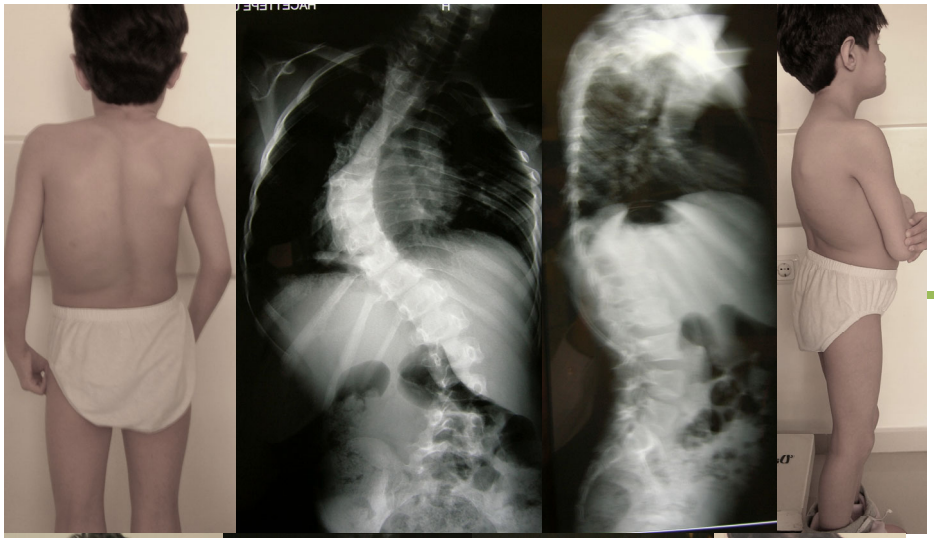
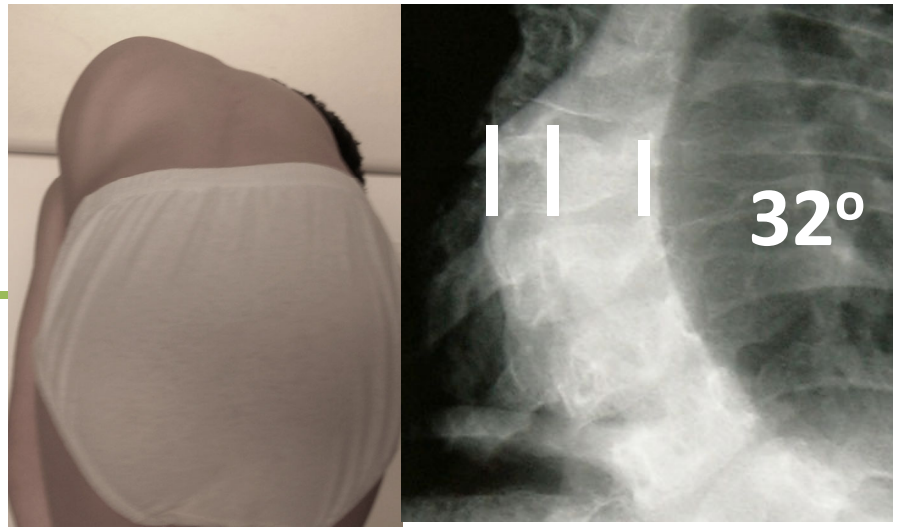


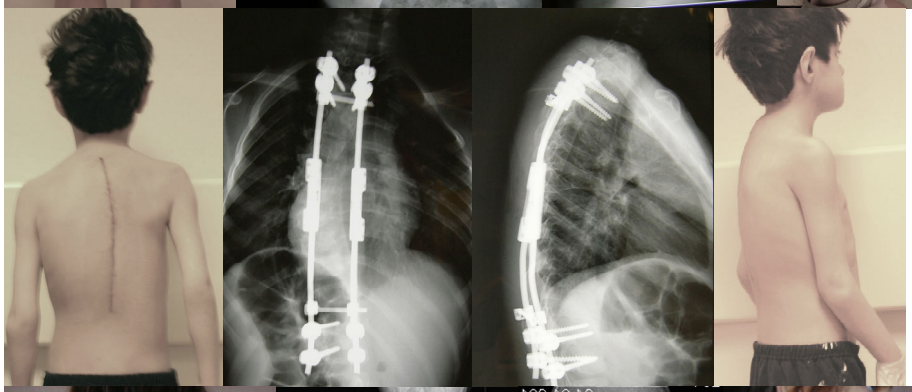
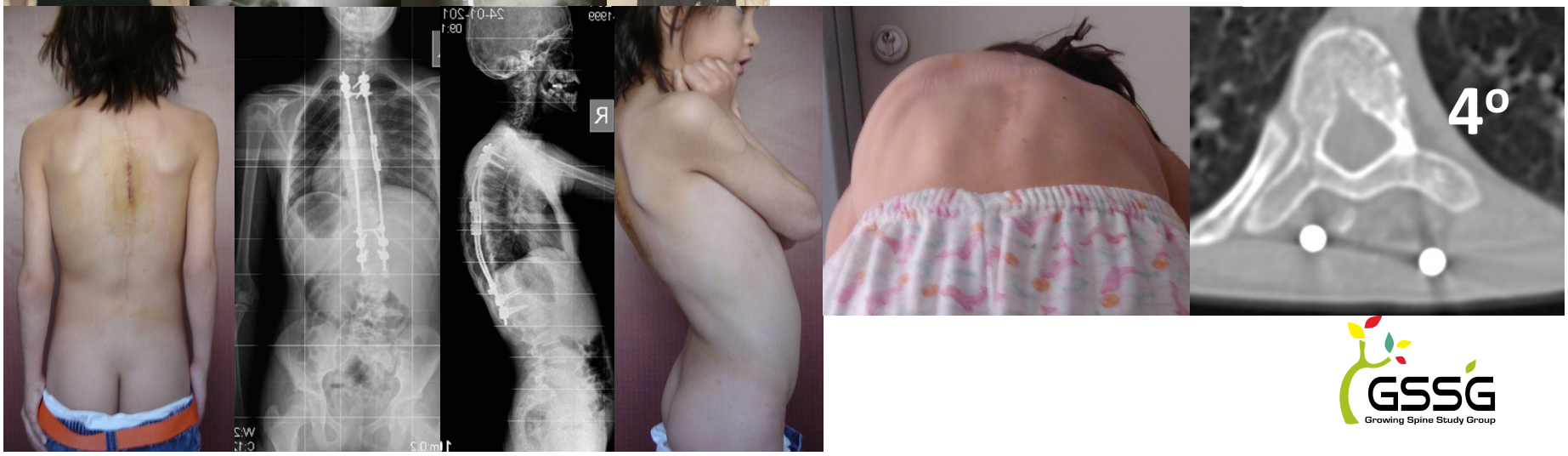






GSSG
Growing Spine Study Group

GSSG
Growing Spine Study Group

Limitations

- 3 graduated, 9 are still lengthening
- No post-index measurement
- Two different methods for rotational measurement

Journal of Pediatric Orthopaedics
21:252–256 © 2001 Lippincott Williams & Wilkins, Inc., Philadelphia

Measurement of Vertebral Rotation in Standing Versus Supine Position in Adolescent Idiopathic Scoliosis

gree on both planes. Measurements obtained from the scanograms by the Perdriolle method in the supine position are very similar to those obtained by CT. Perdriolle's is a simple, convenient, and reliable method to measure rotation on standing radiograms. **Key Words:** Aaro and Dahlborn method—

I.D.,

Conclusion

- DRG is effective for correction of coronal, sagittal and transverse plane deformities, as well
- At least, AVR does not increase during DRG treatment