

MYTH vs TRUTH

*Final fusion is always indicated
in Non Fusion Techniques*

*F.S Pérez-Grueso. MD
Hospital La Paz
Madrid. Spain*



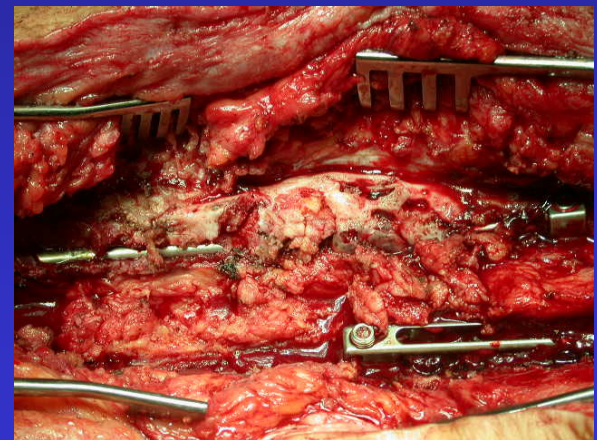
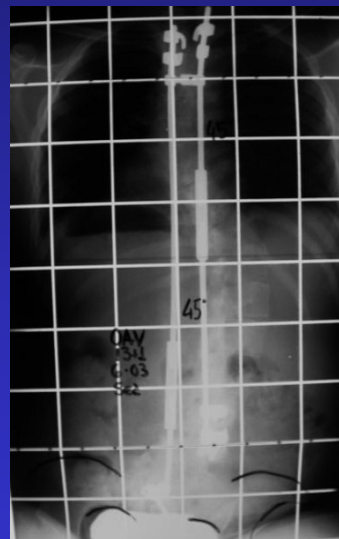
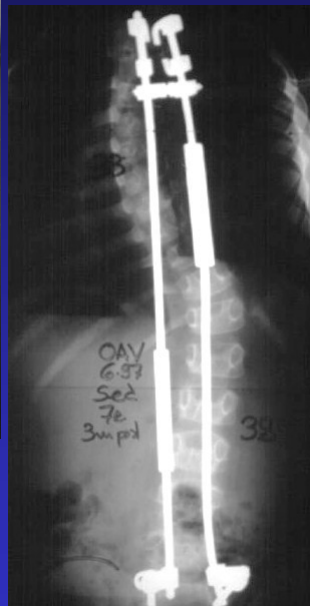
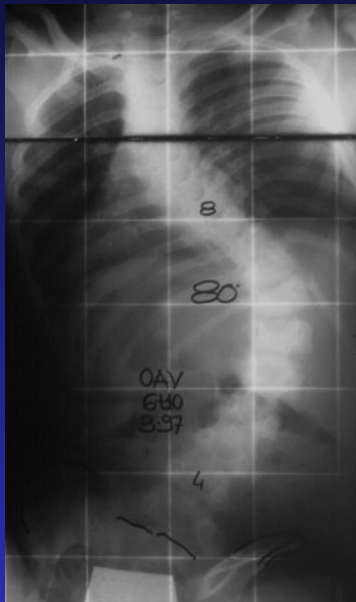
TRUTH

FINAL FUSION HAS BEEN ALWAYS DONE

UNLESS SPONTANEOUS FUSION OCCURED

*OR AN ANTERIOR EPIPHYSIDESIS WAS PREVIOUSLY
PERFORMED*

Spontaneous fusion



Anterior epiphysiodesis effect

Paper #41

SRS 37th Annual Meeting. 2002

LONG TERM FOLLOW-UP OF LUQUE TROLLEY GROWING-ROD CONSTRUCT IN THE SURGICAL TREATMENT OF EARLY ONSET IDIOPATHIC SCOLIOSIS

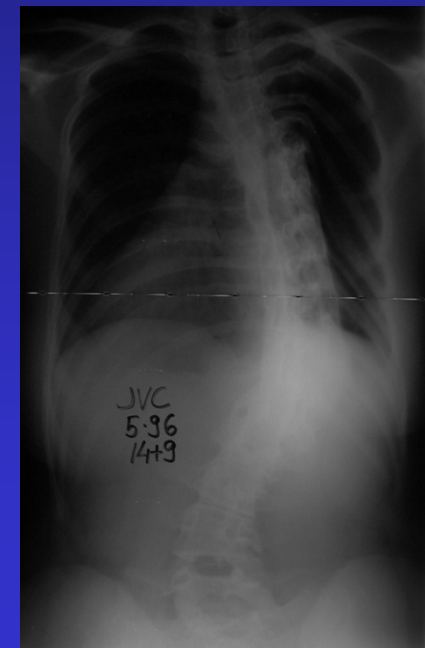
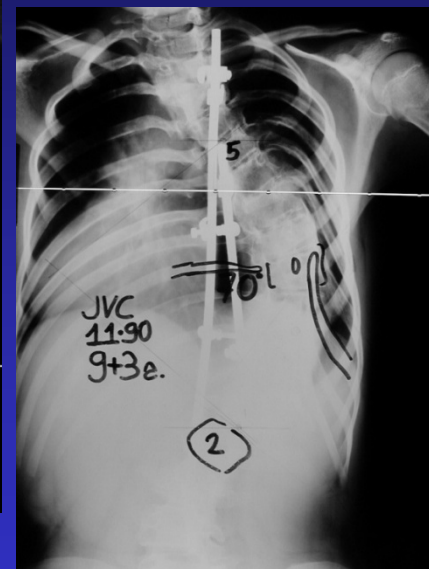
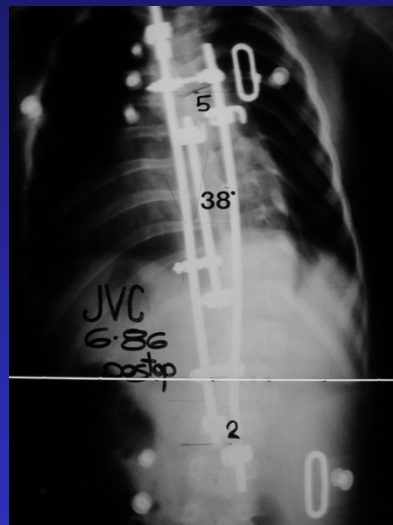
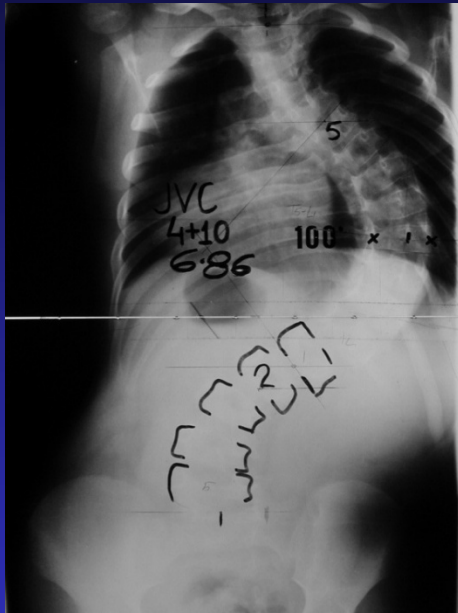
Dilip K. Sengupta, MCh; Brian J. Freeman, FRCS; Michael P. Grevitt, FRCS; S. H. Mehdian, FRCS; John K. Webb, FRCS

Centre for Spinal Studies and Surgery, Queen's Medical Centre, University Hospital Nottingham, Nottingham, UK

METHODS: 31 cases of early onset idiopathic scoliosis were surgically treated using convex epiphysiodesis and Luque Trolley instrumentation due to progressive deformity during 1984-1992. 23 (14 male, 9 female) out of these 31 cases, who reached minimum 16 years of age at final follow-up, were reviewed. All these cases also had anterior convex epiphysiodesis. Overlapp

needed revision for exchange of longer Luque rods at mean age of 7.5 years. Definitive fusion and removal of Luque Trolley was needed at a mean age of 14.5 years (range 12-23 years), due to progression of scoliosis in 9 cases (mean Cobb angle 55°), and development of junctional kyphosis in 4 cases. 10 cases maintained their correction till skeletal maturity without definitive fusion (mean Cobb angle at final FU 33°). Regression of curve was noted in 3 cases. Mean Instrumented segment

Anterior epiphysiodesis effect



Growing Rod instrumentation

- *1962- Harrington*
- *1977- Marchetti & Faldini*
- *1978- Moe*
- *1982- Luque*
- *1984- Moe*
- *1985- Rinsky*
- *1988- Eberle*
- *1990- Patterson*
- *1992- Mardjetko*
- *1993- Vankommel*
- *1994- Tello*
- *1995- Fisk*
- *1996- Marks*
- *1997- Klemme*
- *1999- Pratt*
- *2001- Blakmore*
- *2002- Acaroglou*
- *2002- Mineiro*
- *2005- Akbarnia*
- *2008-Akbarnia*

VEPTR

MEDLINE. 2001-2009 : 39 ARTICLES

Amer F Samdani, Tricia St Hilaire, John B Emans, John T Smith, Kit Song, Robert J Campbell Jr, and Randal R Betz

The Usefulness of VEPTR in the Older Child With Complex Spine and Chest Deformity.
Clin Orthop Relat Res, May 2009; .

- *TEN PATIENTS UNDERWENT SURGERY AFTER AGE 10 (12.4 YEARS)*
- *FOLLOW UP AV 39.6 M (24 TO 75 M)*
- *“.....FOUR PATIENTS HAVE SINCE UNDERGONE DEFINITIVE SPINAL FUSION*

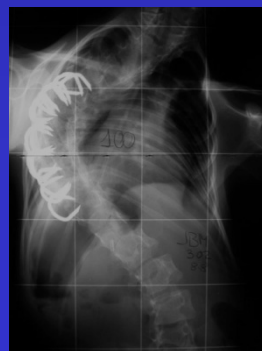
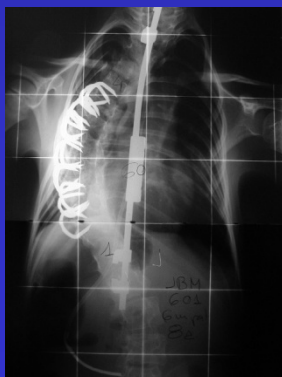
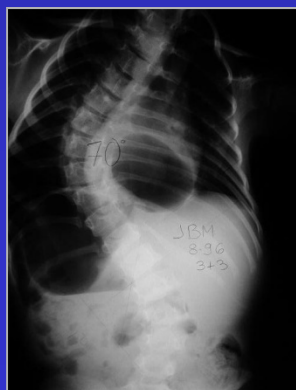
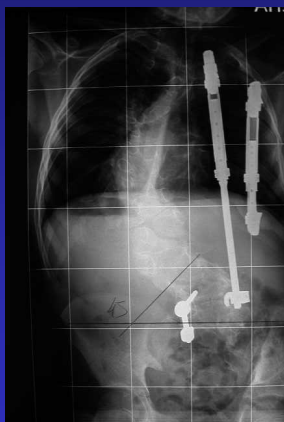
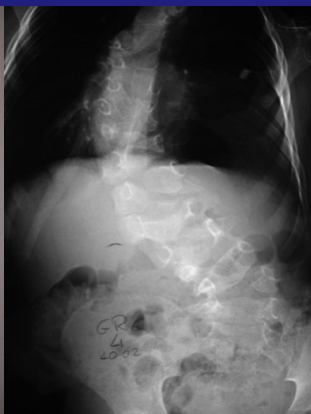
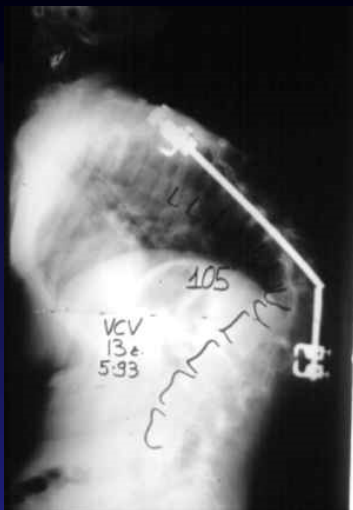
Summary Statement: Deformity

Braun, John; Akbarnia, Behrooz; Emans, John; Lowe, Thomas

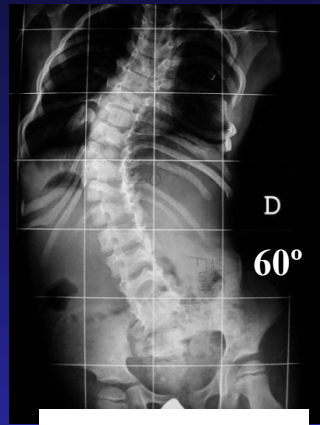
Spine. 30(17S):S34, September 1, 2005.

2) temporizing measures that delay fusion (e.g., growing rods, VEPTR);

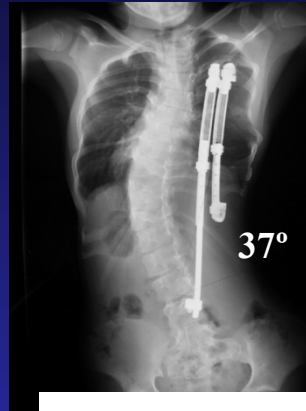
“...Temporizing measures that prevent deformity progression in a young child potentially allow additional vertical spinal growth, chest volume expansion, and continued pulmonary development. Although fusion is eventually required in these children,”



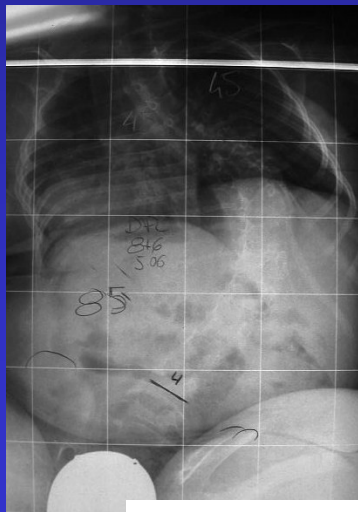
Is fusion indicated ?



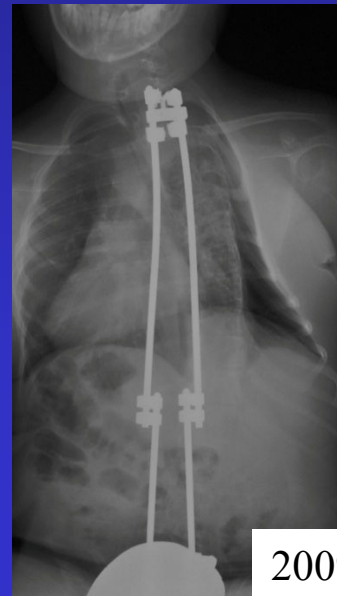
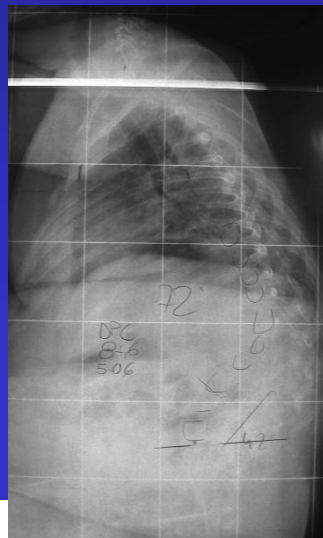
2002. Age 5



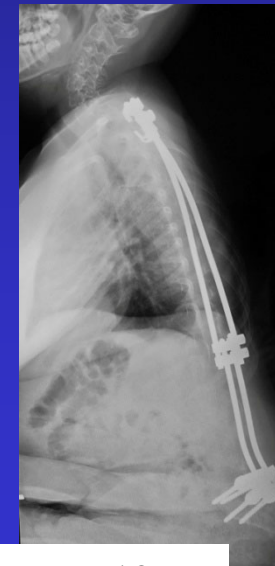
2009. Age 12



2005. Age 8



2009. Age 12



Dual Growing Rod Technique Followed for Three to Eleven Years Until Final Fusion: The Effect of Frequency of Lengthening

Akbarnia, Behrooz A.; Breakwell, Lee M.; Marks, David S.; McCarthy, Richard E.; Thompson, Alistair G.; Canale, Sarah K.; Kostial, Patricia N.; Tambe, Anant; Asher, Marc A.; the Growing Spine Study Group
Spine. 33(9):984-990, April 20, 2008.

- *13 patients*
- *Age at index surgery: av 6.6 years*
- *Length of treatment: av 4.37 years*
- *Age at fusion: av 11 years*

	Pre index	Post index	Pre fusion	final
COBB	81°	35.5°	39.5°	27.7°

What if..... These patients had not been fused.....

MYTH ??

It seems that final fusion is indicated because surgeons have been doing it since non fusion techniques were developed.

There are no data in favor of leaving these type of patients without final fusion.

.....Nobody has dared to do it yet.....