

Vertebral Body Stapling (**VBS**) in the treatment of moderate thoracic idiopathic scoliosis in immature patients

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The treatment of moderate adolescent idiopathic scoliosis

- Control
- Brace
- Minor surgical intervention – e.g. VBS

Previous attempts in stapling

- Smith et al. 1954 – bad results in 3 cases
- They treated too big curves

- We have made a trial with VBS in immature patients with AIS
- We followed the criteriae recommended by the inventor (Betz 2003)

Patients

- 7 girls
- 2 boys
- Mean age 11.3 (10-13) years

Patients....

- All Risser 0
- Lenke 1A 5
- Lenke 1B 4
- Flexibility 7° (1°-14°)
- All had normal MRI
- None had any syndromal signs

Surgery

- Uncomplicated thoracoscopic staple insertion without violation of segmental vessels
- Stapling from Cobb to Cobb
- Blood loss was in mean 122 ml (6=0; 2=100; 1=700)

Results

- Primary correction was 6° in mean
- Low dose CT showed an acceptable position of all staples

Results....

- 7 / 9 cases showed a progression of scoliosis by in mean 20° necessitating a second definitive operation
- The time from index operation to final surgery was in mean 35 (12-69) months
- The follow-up time for the 2 not re-operated on cases was 42 and 29 Mo respectively

Results....

- The 2 cases not having further surgery had preop Cobb values of 32° and 33°
- The 7 cases with a second definitive surgery had preop Cobb angles of in mean 40° (35°-46°)

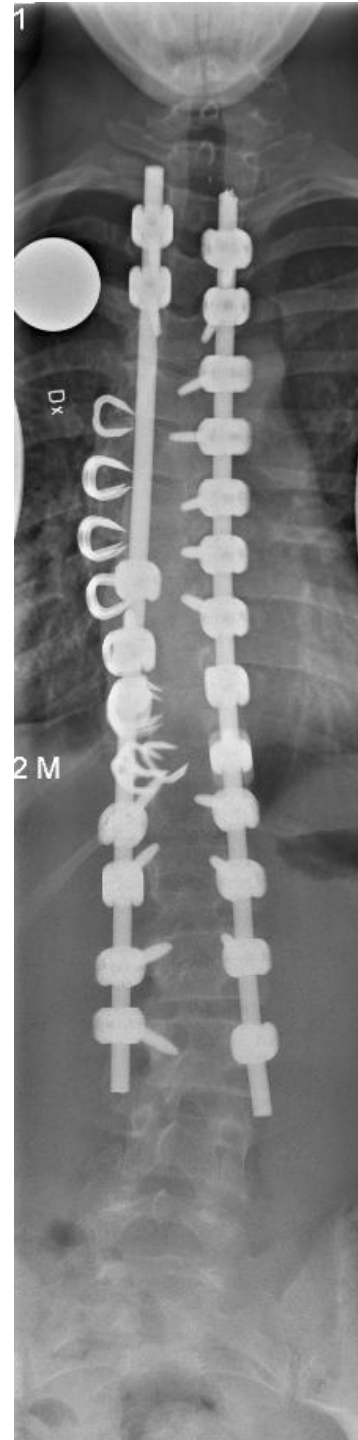


10 Y at index op





41 Mo after index op



6Mo post 2nd op

Other series

- Lavelle et al. 2011 have reported success (77%) in AIS cases with preop Cobb $<35^{\circ}$
- O'Leary (2011) showed no success in non AIS with more severe curves, 8/11 had or are planned for definitive surgery

Discussion

- The VBS is in our hands not a feasible technique for treatment to stop moderate adolescent idiopathic scoliosis
- We were successful only in 2/9 cases – both having Cobb $< 35^\circ$
- Our inclusion criteriae were according them suggested by the inventor (Betz 2003)

Discussion....

- The mean preop Cobb value in Betz' series was 35° and in ours 38° (Lavelle et al. 2011)
- The selection of cases may differ significantly in different series in different countries...

Conclusion

- We think the VBS in moderate AIS in immature cases is questionable