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Anterior Short Spinal Fusion in the Treatment of Adolescent Idiopathic Scoliosis.

Retrospective Review of 250 Consecutive Patients with 7 years Follow up.

Department of Orthopedic Surgery and Rehabilitation, Zakopane - Poland
DISCLOSURE

Presenter: Daniel Zarzycki  No relationship

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Maciej Tęsiorowski  No Relationships

EUROSPINE 2011
October 19 – 21, 2011
Milan (Italy)
Between 2002 – 2010 we operated 885 patients with AIS using „Bone on Bone” technique

For this study we selected first 250 consecutive patients

Minimal observation time was 7 years (7 - 9.3 yrs)

86% girls and 14% boys

Age at surgery:
- mean 15 years 8 months
- min 9 yrs. – max 48 yrs.
Surgical Technique

- Thoracotomy or retroperitoneal approach
- Resection of rib head
- Total discectomy
- Anterior bicortically placed screw and single/double rod implantation
- No need every vertebra instrumentation (By-passes)
- No brace post-operatively
Intraoperative View

Spinal cord

Cage

Patient Ś.P., f, nr 18991
**Method of Radiological Evaluation**

|-------------------------------|-------------------------------|---------------------------------------|----------------------------------------|----------------------------------------|----------------------------------------|

- **Standing Cobb angle (S.C.A.)**: Th₆ – L₁
- **Elongation Cobb angle (E.C.A.)**: Th₆ – L₁
- **Standing short fusion angle (S.S.F.A.)**: Th₇ – Th₁₁
- **Elongation short fusion angle (E.S.F.A.)**: Th₇ – Th₁₁
- **Post op. standing Cobb angle (Po.S.C.A.)**: Th₆ – L₁
- **Post op. short fusion angle (Po.S.F.A.)**: Th₇ – Th₁₁

Angles:
- Standing Cobb angle: 48°
- Elongation Cobb angle: 23°
- Standing short fusion angle: 37°
- Elongation short fusion angle: 23°
- Post op. standing Cobb angle: 8°
- Post op. short fusion angle: 0°
## Radiological Results

<table>
<thead>
<tr>
<th></th>
<th>Pre-op</th>
<th>Post-op</th>
<th>Follow-up</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standing Cobb angle</td>
<td>61.3° (39° - 90°)</td>
<td>27.3° (0° - 45°)</td>
<td>31.2° (0° - 47°)</td>
</tr>
<tr>
<td>Elongation Cobb angle</td>
<td>37.5° (18° - 80°)</td>
<td>% correction main curve</td>
<td>54.6% (27 -100)</td>
</tr>
<tr>
<td>Short fusion Cobb angle</td>
<td>55.6° (31° - 84°)</td>
<td>Short fusion Cobb angle</td>
<td>22.2° (0° - 45°)</td>
</tr>
<tr>
<td>Short fusion elongation Cobb angle</td>
<td>35.4° (11° - 78°)</td>
<td>% correction Short fusion</td>
<td>65.9% (29 -100)</td>
</tr>
<tr>
<td>Number of vertebrae in the main curve</td>
<td>7.2 (4 - 10)</td>
<td>Number of instrumented vertebrae</td>
<td>5.4 (3 - 6)</td>
</tr>
</tbody>
</table>
Results

- **Number of fused vertebrae**: 5.4 (3 – 6)
- **Number of excised discs**: 4.4 (2 – 5)
- **Number of screws**: 4.3 (3 – 6)
- **Time of surgery**: 3hrs 15min (2 hrs 15min – 6 hrs)
- **Blood loss**: 599 ml (100ml - 2100 ml)
- **Hospital stay**: 11.1 days

The best result
Patient D.D., f, 512852(16399), age 14

Lenke 1A

“Bone On Bone” 5 vertebrae - 4 discs
Radiological Evaluation

Patient T.P., f,

Patient M.P., f,
Conclusion

‟Bone on Bone” technique is an excellent surgical procedure for treatment of adolescent idiopathic scoliosis particularly Lenke type 1 and Lenke type 5, 6.

‟Bone on Bone” technique is an excellent surgical procedure for short spinal fusion preserving mobility of the spine (5.4 vertebrae)

Fusion is obtained very fast (4.8 months)

Final correction of the main curve is good (49.9%) and correction of the short fusion segment is excellent (64.6%)

‟Bone on Bone” technique has low blood loss (599 ml)