New Self Growing Rod

Preliminary Results on a Series of 18 Neuromuscular Scoliosis

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Disclosures

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• R. HAJJ: No relation
• N. KHOURI: No relation
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Introduction

• One direction Sliding Rod
• Mechanical principle
• 2 Sizes of lengthening reserve (50 or 80mm)
• “CE” Marked
How does it work

1- By passive expansion:
   - Spontaneously by daily activity (transfers, sports...)
   - Spontaneously by natural growth of the spine

2- By active expansion:
   - With axial traction « On demand »
1. With a minimally invasive approach
2. In a bilateral construct
3. Traction for stiff curves (+/- symmetrical)
Our series

18 cases of Neuro Muscular Scoliosis

- Average follow up 2 years
- 9 girls + 9 boys
- Average operating age 11 years
- Etiologies: 10 CP, 4 SMA, 2 MD, 2 others neuro
- Mean Initial Cobb Angle: 78°, mean Pelvic obliquity: 20°
Results

- Rod expansion in 16 cases/18 (spontaneously) = 89%
- No rod expansion in 2 cases (conflict with crosslink)
- 3 complications in 2 patients (11%):
  - 2 cases of infections
  - 1 Crosslink bulkiness
- No neurologic complications, no rod fracture, no implant dislodgement
Results

- No complication in relation with the device = 0%
- Spontaneous expansion of the device leading to a continuous improvement of residual curve and residual pelvic obliquity

<table>
<thead>
<tr>
<th></th>
<th>Preop</th>
<th>Postop</th>
<th>Follow Up</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cobb Angle</td>
<td>78°</td>
<td>30° (62%)</td>
<td>26° (66%) +4%</td>
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<tr>
<td>Pelvic Obliquity</td>
<td>20°</td>
<td>12° (40%)</td>
<td>3° (85%) +45%</td>
</tr>
<tr>
<td>T1-T12 Length</td>
<td>19,80cm</td>
<td>21,85cm (+2,05)</td>
<td>23,72cm (+1,87cm/2a)</td>
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<tr>
<td>T1-S1 Length</td>
<td>31,97cm</td>
<td>35,23cm (+3,26)</td>
<td>38,44cm (+3,21cm/2a)</td>
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</tbody>
</table>
Results

No expansion in 2 cases (conflict between crosslink and spinous process)

Initial 7 years

PO

12m PO

24m PO
Case 1 (SMA, 11 years)

- Initial: 35°
- PO: 18°
- 24m PO: 7°
Case 1

Initial

PO

24m PO
Case 1

Initial 12m PO 24m PO 12
Case 1

Initial

12m PO

24m PO
Case 2 (CP, 13ans)

Initial

PO

24m PO

108°

70°

55°
Case 2

Initial

PO

24m PO
Case 2

Initial 24m PO
Case 2

Initial 24m PO
Conclusion

• **Encouraging preliminary results**
  1. Simple and reliable mechanical principle
  2. Bendable rod as desired
  3. Large reserve (80mm)
  4. Strong and durable device
  5. Rigorous surgical technique
  6. Spontaneous progressive lengthening
  7. Reduced cost

• ➡️ **Real reduction of complications rate**!

• More follow up is nevertheless necessary