Offset MCGR Orientation

A. Noelle Larson, MD
Associate Professor
Pediatric Orthopedics and Scoliosis
Larson.noelle@mayo.edu
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If you can have more control, why don’t you take it?

• MCGR
  • Guide growth
  • Correct deformity
  • Avoid complications

Would you like more options, more control, or less?
What kind of car does Burt Drive?
Maybe he shouldn’t be driving at all
Case:
4+4 yo M, IIS, 80 degree curve (58 txn), failed casting
Casting, bracing at age 4
Correction to 38°
6 mo postop, 1\textsuperscript{st} lengthening

- 3 mm deployed to each rod

- Actually lengthening 4.5 mm each rod!!!

- Cross talk, even with offset alignment . . .

- How much worse crosstalk with standard position?
Control – Offset Rods
Can lengthen concavity >> convexity

<table>
<thead>
<tr>
<th>Left</th>
<th>Right</th>
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</thead>
<tbody>
<tr>
<td>1 mm</td>
<td>1 mm</td>
</tr>
<tr>
<td>1 mm</td>
<td>1 mm</td>
</tr>
<tr>
<td>1 mm</td>
<td>STOP!</td>
</tr>
</tbody>
</table>
Soft Tissue Envelops Affects Delivered Force

Observed Length Increases of Magnetically Controlled Growing Rods are Lower Than Programmed

Sarah E. Gilday, MS, PA-C,* Mark S. Schwartz, DO,† Donita I. Bylski-Austrow, PhD,* David L. Glot, BSE,* Lindsay Schultz, BS, CCRP,* Sara O’Hara, MD,* Viral V. Jain, MD,* and Peter F. Sturm, MD, MBA*
More force???

• Pushing two rods at once with standard device?

• Alternating rod lengthening, 1 mm, 1 mm, 1 mm should provide same ultimate result.
Lower Rates of PJK?
• ‘Theory’
  • Can put straight section at thoracolumbar junction and reproduce thoracic kyphosis
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  • Can put straight section at thoracolumbar junction and reproduce thoracic kyphosis
Does it Affect PJK?

• Offset vs. standard doesn’t really help
• When in doubt, use shorter actuator and more kyphotic rod
• Treat kyphosis before implant
• In a small child, they are all long . . .
Newest Version of Harrington Rod??
What are our colleagues doing?

Mean 6-Year Follow-up of Magnetically Controlled Growing Rod Patients With Early Onset Scoliosis: A Glimpse of What Happens to Graduates

- All patients had 5.5 mm MCGRs inserted subfascially, in a standard and offset rod configuration.
Initially, the patients received two standard rods. . . . we used one standard rod on the concave side of the major curve and one offset rod on the convex side.
Offset

Preliminary Results of Magnetically Controlled Growing Rods for Early Onset Scoliosis

Karsten Ridderbusch, MD,* † Martin Rupprecht, MD,* † Philip Kunkel, MD,‡ Christian Hagemann, MD,‡ and Ralf Stückler, MD* †
Offset Construct

Independent rod control (may be helpful to adjust coronal balance)

Incremental lengthening (control)

Minimizing cross-talk (control)
<table>
<thead>
<tr>
<th>Offset Construct</th>
<th>Standard Construct</th>
</tr>
</thead>
<tbody>
<tr>
<td>Independent rod control (may be helpful to adjust coronal balance)</td>
<td>Lengthen rods simultaneously, and may improve distraction forces (Needs verification)</td>
</tr>
<tr>
<td>Incremental lengthening (control)</td>
<td>Keeps magnets and artifact confined in one area, lower spine, on MRI imaging</td>
</tr>
<tr>
<td>Minimizing cross-talk (control)</td>
<td>Minimizes error of putting in a rod upside</td>
</tr>
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</table>

Plus, everyone is doing it!
Thank you!

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