EOS Managed by TGR Converted to MCGR:

Is There an Improvement in Quality of Life?

Jennifer M. Bauer MD MS,
Petya Yorgova MS, Geraldine Neiss PhD, Kenneth Rogers PhD,
Peter Sturm MD, Paul Sponseller MD MBA, Scott Luhmann MD,
Jeff Pawelek BS, Suken A. Shah MD

Growing Spine Study Group
Disclosures

JM Bauer, P Yorgova, G Neiss, K Rogers - none

Peter Sturm MD – JCO, SRS, POSNA, Biomet, Nuvasive, Depuy Synthes, Medtronic, DePuy/Spine, Ellipse, Medtronic Sofamor Danek

Paul Sponseller MD MBA – JBJS, Oakstone Medical, SRS, Depuy Synthes/Spine, Globus

Scott Luhmann MD – Nuvasive, Medtronic Sofamore Danek, Stryker, Orthopediatrics, Globus, Wolters Kluwer

Jeff Pawelek BS – San Diego Spine Foundation, GSF, Nuvasive

Suken A. Shah MD – AAOS, POSNA, SSSF, SRS, K2M, Nuvasive, Stryker, DePuy Synthes, Globus, Arthrex, Ethicon, Globus
Background + Aims

Benefits of MCGR over TGR:

- **Less operations**
  - Akbarnia et al. *Spine Deform* 2014
- **Psychologic**
  - Matsumoto et al *JPO* 2014
  - Flynn *JPO* 2012, Aslan *Spine Deform* 2017
  - Sanders et al *JOT* 2005
- **Repeat anesthetic**
- **Lower infection rate**
- **Financial savings**
  - ~3k @ 5yr
  - Su AW et al. *Spine* 2015

Seattle Children's Hospital • Research • Foundation
Background + Aims

= ↑ HRQoL

Doany ME et al. *Spine* 2017: EOSQ TGR vs MCGR

- **MCGR** improved financial burden + satisfaction
- **No difference** when adjust follow-up duration
Background + Aims

\[ \text{TGR to MCGR Converts} \]

\[ \Rightarrow \text{HRQoL} \]
**Background + Aims**

**EOSQ-24**

24 item grouped domains

Validated:

- PFTs, age, norm, group/dx, pre/post-op agreement


**DOMAINS**

- General Health
- Pain/Discomfort
- Physical Function
- Pulmonary Function
- Transfer
- Daily Living
- Fatigue/Energy Level
- Emotion
- **Parental Burden**
- **Financial Burden**
- **Satisfaction**
Study Design

Multicenter retrospective review

- TGR, MCGR, *Converts* (TGR→MCGR)
- EOSQ-24 pre+post index

Post-hoc sample size assessment
Results

<table>
<thead>
<tr>
<th></th>
<th>MCGR</th>
<th>TGR</th>
<th>Converts</th>
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<tbody>
<tr>
<td>N</td>
<td>114</td>
<td>156</td>
<td>32</td>
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<tr>
<td>congenital</td>
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<td>idiopathic</td>
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<td>19%</td>
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<td>4%</td>
<td>3%</td>
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<td>1%</td>
<td>3%</td>
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<tr>
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<td>32%</td>
<td>38%</td>
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<td>2%</td>
<td>6%</td>
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<tr>
<td>neuromuscular</td>
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<td>27%</td>
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<tr>
<td>Cobb</td>
<td>76</td>
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</tbody>
</table>

2.0yr average f/u

Converts:
- f/u: 3.1yr TGR, 1.6yr MCGR
- lengthenings: 3.7 TGR, 6.3 MCGR

Post-hoc power = 94%

p=0.03
p=0.37
Results

Parental Burden, Financial Burden, Satisfaction:

No signif diff 3 groups’:
---ave scores
---# increased/decreased
---removing NM
---grouping MCGR+conversion vs TGR
---w/ respect initial Cobb

Difference:
---MCGR ave change in Transfer, Fatigue/Energy Level
Results

1st + Last EOSQ-24 Scores
Results

Change in EOSQ-24

- General health: p=0.37
- Pain/discomfort: p=0.52
- Pulmonary function: p=0.30
- Transfer: p=0.02
- Physical function: p=0.32
- Daily living: p=0.45
- Fatigue/energy level: p=0.006
- Emotion: p=0.80
- Parental burden: p=0.99
- Financial burden: p=0.47
- Satisfaction: p=0.84
Significance + Discussion

Right tool?
Sample size?
Follow-up length?
Burden of disease QoL?