The Future Of Spine

Minimally Invasive Spine Surgery

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OSNI
www.osni.org
The Future of Spine

History of Spine Surgery

- Long Procedures
- Uncertain Indications
- Significant Complications
- Painful and Long Recovery
- Uncertain Outcomes
Introduction of Spinal Instrumentation

- The Introduction of the pedicle screw revolutionized spine surgery
- Allowed for internal fixation and stabilization of the Spine
- However the indications for surgery were still unclear and the morbidity of the procedures was significant
- General perception - “Never let anyone operate on your spine”
The ability to treat patients successfully with modern spine techniques has lead to an explosion of talented Spinal Surgeons.

The Indications for Spinal Surgery have improved and as a result the Patient Outcomes have also improved.

The costs of these procedures and the postoperative recovery though have still remained significant hurdles.
Minimally Invasive Spine Surgery

• A select group of surgeons nationally have dedicated their careers to improving the patient experience
  • Smaller Incisions
  • Preservation of the patients anatomy
  • Shorter Procedures with the use of technology
  • Decreased pain and blood loss which directly leads to shortened hospital stays and costs
MAS PLIF

- Minimally Invasive
- Developed to improve patient outcomes and decrease postoperative pain
- Gained national and international traction due to dramatic patient recovery
- Length of stay has deceased to 23 hours
- Most patients off of their pain meds within 2 weeks
Lumbar Fusion

- L4/5 Degenerative Spondylolisthesis
- Considered a straight forward indication for fusion
- Inpatient vs outpatient
- Open vs MIS
Data

- Biomechanics Papers presented at SOLAS, ISAS, SMISS in 2014
- Multicenter study presented at ISAS, SMISS 2015 in San Diego
- Further papers presented validating clinical and biomechanics success of this technique are in process
Medialized, Muscle-Splitting Approach for Posterior Lumbar Interbody Fusion

Technique and Multicenter Perioperative Results

Nitin Khanna, MD,* Gurvinder Deol, MD,† Gregory Poulter, MD,‡ and Arvind Ahuja, MD§
MAS PLIF case

- 60 year old
- Severe Back and leg pain
- Spondylolisthesis
MAS PLIF case

- Surgery time 1.5 hours
- Blood loss – less than 100 cc
- Patient sent home on day of surgery
Minimally Invasive Spine Surgery

Considerations

• Safety
• Patient Selection
• Dedicated Team/Staff
• Commitment to the technology
• Outcomes
• Cost Savings to the Health Care System

A Multicenter, Retrospective Evaluation Validating a Novel Less-Invasive, Medialized Approach for Posterior Lumbar Interbody Fusion
Perioperative Pain Management

- Preoperative 10 mg decadron
- Inject the subcutaneous tissue prior to incision. Marcaine/epi
- Inject the muscular layer with Marcaine/epi
- Limited narcotic use and do not overload patient with iv fluids during the procedure.
- Keep surgical time inside of 2.5 hours.
- Exparel after fascial closure diluted 1:2
- Postoperative po norco, po valium and IV Toradol with early mobilization
- Limited/if any IV narcotic medication for recovery period.
The Opportunity

- Teach and train US and International Surgeons these techniques
- Modern Health Care demands efficient, cost effective care with proven outcomes
- Patients demand better/safer outcomes with a shorter recovery
- Spinal Conditions are a major driver in both cost and inefficient delivery of care
- Moving 75% of Spine Care to the Minimally Invasive Setting will improve patient satisfaction, patient objective outcomes and save money
<table>
<thead>
<tr>
<th>Number of patients</th>
<th>15 consecutive patients</th>
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<tbody>
<tr>
<td>Surgical Time</td>
<td>121mins (89-151min)</td>
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<tr>
<td>Txf</td>
<td>0</td>
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<tr>
<td>30 day readmission</td>
<td>0</td>
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<tr>
<td>EBL</td>
<td>69cc (20-200 cc)</td>
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<tr>
<td>BMI</td>
<td>27 (20-40.7)</td>
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<tr>
<td>Age</td>
<td>44 years old (31-55)</td>
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<tr>
<td>Time to discharge in minutes</td>
<td>133 mins (57-310)</td>
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</tbody>
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Surgeon Recognition

- Visiting Surgeon from Australia
- Center for Minimally Invasive Surgery - Munster, Indiana
EDITORIAL

Breaking Through the “Glass Ceiling” of Minimally Invasive Spine Surgery

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