Introduction

Interspinous process decompression (IPD) is a procedure that:
• restricts lumbar spine extension through implantation of a spacer between adjacent spinous processes
• reduces nerve pinching and leg pain associated with Lumbar spinal stenosis (LSS):
  • a type of spinal canal or nerve root narrowing
LSS can manifest as central canal and neuroforaminal stenosis, either independently or simultaneously.

Goal: determine how Vertiflex, a minimally invasive IPD, improves pain and functionality in veteran populations showing symptoms of LSS.

We will compare preoperative and postoperative results using chart analysis, health surveys, and a secondary questionnaire.

Methods

• Sample of veterans at the New Orleans Veteran Affairs Medical Center (n=14)
• Four-question secondary questionnaire over the phone about pain and capabilities at or around one year after Vertiflex surgery
• Compared with initial post-operative survey responses
• Survey Questions:
  1. Patient’s current level of pain on a scale of 1-10
  2. The number of blocks they can walk post-operatively before having to stop due to pain
  3. Have they received any procedures following the surgery including injections, low-back surgeries, and Vertiflex explants
  4. Why or why not they would recommend Vertiflex to another veteran
• Response data was stratified by the types and degrees of LSS
  • mild/moderate and severe
  • Central Canal and Neuroforaminal Stenosis
• P values of less than 0.05 using a paired t test were derived and considered significant.

Vertiflex and Stenosis Pictures

Secondary Questionnaire

<table>
<thead>
<tr>
<th>Question</th>
<th>Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>A. Before: /10. B. After: /10</td>
</tr>
<tr>
<td>2</td>
<td>A. Before: Blocks B. After: Blocks</td>
</tr>
<tr>
<td>3</td>
<td>A. Vestiflex Explanted B. Low back Surgery C. Low back injections:</td>
</tr>
<tr>
<td>4</td>
<td>A. Because it (didn’t) relieved your back pain: B. Because it (didn’t) relieved your leg pain with walking: C. If none of the above are the reason, explain why in one sentence.</td>
</tr>
</tbody>
</table>

This research project was supported through the LSU Health Sciences Center, School of Medicine.

Results

Pre versus Post Vertiflex procedure:
• severe central canal stenosis patients (n=8) and mild/moderate neuroforaminal stenosis patients (n=11) had a significant decrease in overall pain levels (p=0.0144 and p=0.0011, respectively)
• Severe central canal stenosis patients:
  • significant increase in the number of blocks they could walk before stopping due to pain (p=0.0368).
• Preoperative comparison between mild and severe neuroforaminal stenosis groups (n=13):
  • Blocks walked significant (p value of 0.0444)
  • Pain level significant (p value of 0.0022)
• Fewer than half of patients in any stenosis group received a post-Vertiflex surgery or injection
• No patients had their Vertiflex explanted

<table>
<thead>
<tr>
<th>Timepoint</th>
<th>Summary of Severe/Mild Patients &amp; T Test</th>
<th>Sample size through 1 year of survey</th>
<th>P value</th>
<th>Timepoint</th>
<th>Summary of Severe/Mild Patients &amp; T Test</th>
<th>Sample size through 1 year of survey</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre vs Post</td>
<td>Central Canal Stenosis Severe Group, pain level</td>
<td>8 (10)</td>
<td>0.01446344</td>
<td>Pre</td>
<td>Neuroforaminal Stenosis Mild vs Severe Group, pain level</td>
<td>13 (19)</td>
<td>0.00299484</td>
</tr>
<tr>
<td>Pre vs Post</td>
<td>Central Canal Stenosis SEVERE Group, blocks walked</td>
<td>8 (10)</td>
<td>0.03670244</td>
<td>Pre</td>
<td>Neuroforaminal Stenosis Moderate vs Severe Group, blocks walked</td>
<td>13 (19)</td>
<td>0.04026855</td>
</tr>
<tr>
<td>Pre vs Post</td>
<td>Neuroforaminal Stenosis MODERATE Group, pain level</td>
<td>15 (15)</td>
<td>0.00013642</td>
<td>Pre</td>
<td>Central Canal Stenosis Mild Group VS Severe, pain level</td>
<td>14 (20)</td>
<td>0.017230724</td>
</tr>
</tbody>
</table>

Conclusion

• Vertiflex was shown to:
  • decrease overall pain levels in patients with both central canal and neuroforaminal stenosis
  • increase the distance that both groups of patients could walk pain-free
• Patients rarely had follow-up procedures and each stratified group consistently had more patients who would recommend Vertiflex versus not recommend.
• We anticipate that these results will support a more general correlation between the Vertiflex procedure and an overall improvement in pain management for patients with LSS.