"Vertiflex Outcomes on Lumbar Spinal Stenosis"

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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.

Vertiflex and Stenosis Pictures

Figure 1: Vertiflex procedure

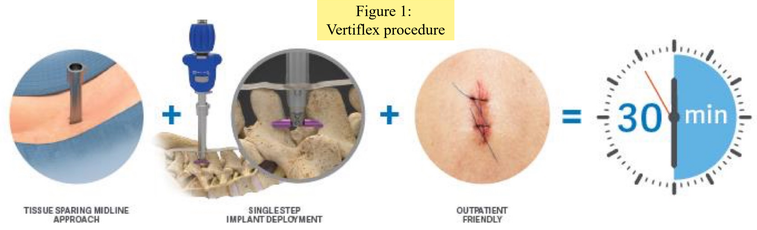
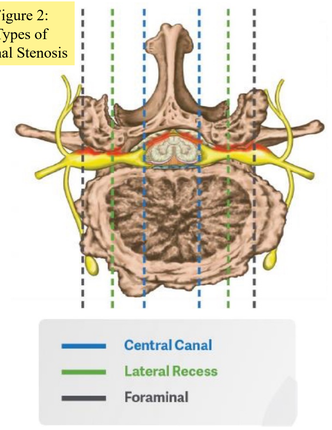


Figure 2: Types of Spinal Stenosis



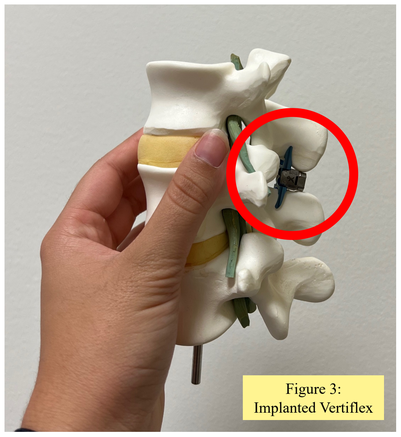


Figure 3: Implanted Vertiflex

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

Timepoint	Summary of Severe/Mild Paired T Test	Sample size (through 1 year of surveys)	P value
Pre vs Post	Central Canal Stenosis Severe Group, pain level	8(10	0.014446344
Pre vs Post	Central Canal Stenosis SEVERE Group, blocks able to walk	8(10	0.036792444
Pre vs Post	Neuroforaminal Stenosis MODERATE Group, pain level	11 (15)	0.001116421

Timepoint	Summary of Severe/Mild Paired T Test	Sample size (through 1 year of surveys)	P value
Pre	Neuroforaminal Stenosis Mild vs Severe Group, pain level	13(19)	0.002206446
Pre	Neuroforaminal Stenosis Mild vs Severe Group, blocks walked	13(19)	0.044369515
Pre	Central Canal Stenosis Mild Group VS Severe, pain level	14 (20)	0.017235724

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.

Secondary Questionnaire

Question	Answer	Question	Answer
1	A. Before: /10. B. After: /10	3	A. Vestiflex Explanted : B. Low back Surgery: C. Low back injections:
2	A. Before: Blocks. B. After : Blocks	4	A.Because it (didn't) releived 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.

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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.