

Outcomes of the Minimally Invasive Lumbar Decompression (MILD) Procedure to Treat Symptomatic Lumbar Spinal Stenosis

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Introduction

Up to 84% of the US population may experience lower back pain in their lifetime, with degenerative lumbar spinal stenosis being a common cause in the elderly, leading to pain and reduced quality of life. In the United States, over 200 000 patients are affected, making lumbar spinal stenosis the leading reason for spinal surgery in those over 65. To avoid open surgery, procedures such as the minimally invasive lumbar decompression (MILD) procedure (Vertos Medical) have been developed to treat spinal stenosis by reducing hypertrophied ligamentum flavum without major incisions or prolonged recovery. Our study examines the effects of the MILD procedure on pain and function over 12 months.

Methods

- Retrospective analysis of the postprocedural outcomes and demographics of patients between the ages 16 to 89 who underwent the MILD procedure performed by multiple University of Florida interventional pain physicians
- Patients with any conditions that may have confounded quantifying preprocedural pain were excluded from this study (eg, experiencing significant preprocedural pain from a site remote from the treated site).
- Linear mixed models were used to examine the change from baseline to one, 3, 6, and 12-month follow-up for visual analogue scale (VAS) pain scores

Study Data

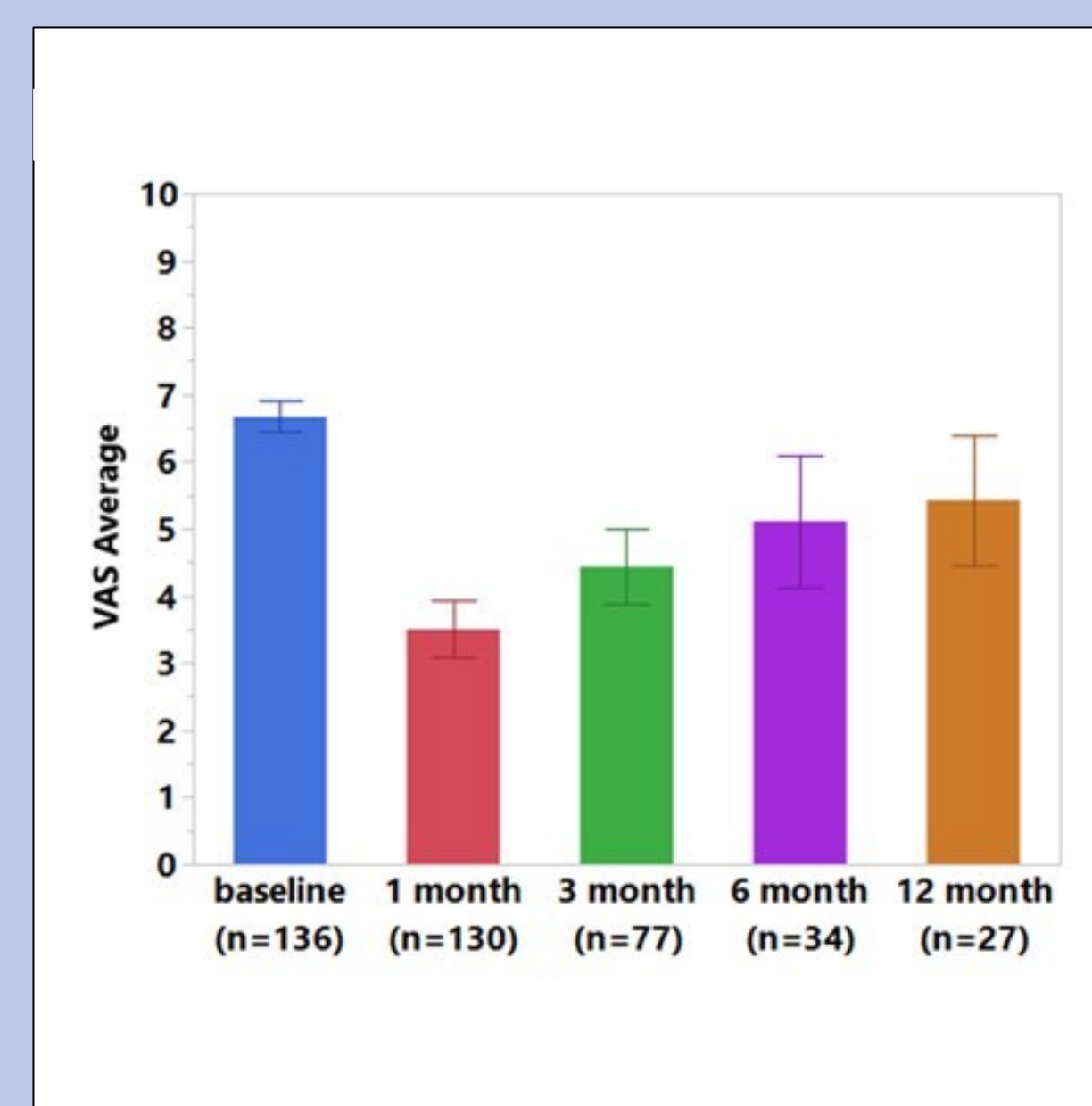


Figure 1. Visual Analogue Scale Average Score Improvements Across Follow-Up Were Seen In VAS Average Pain ($P < .001$)

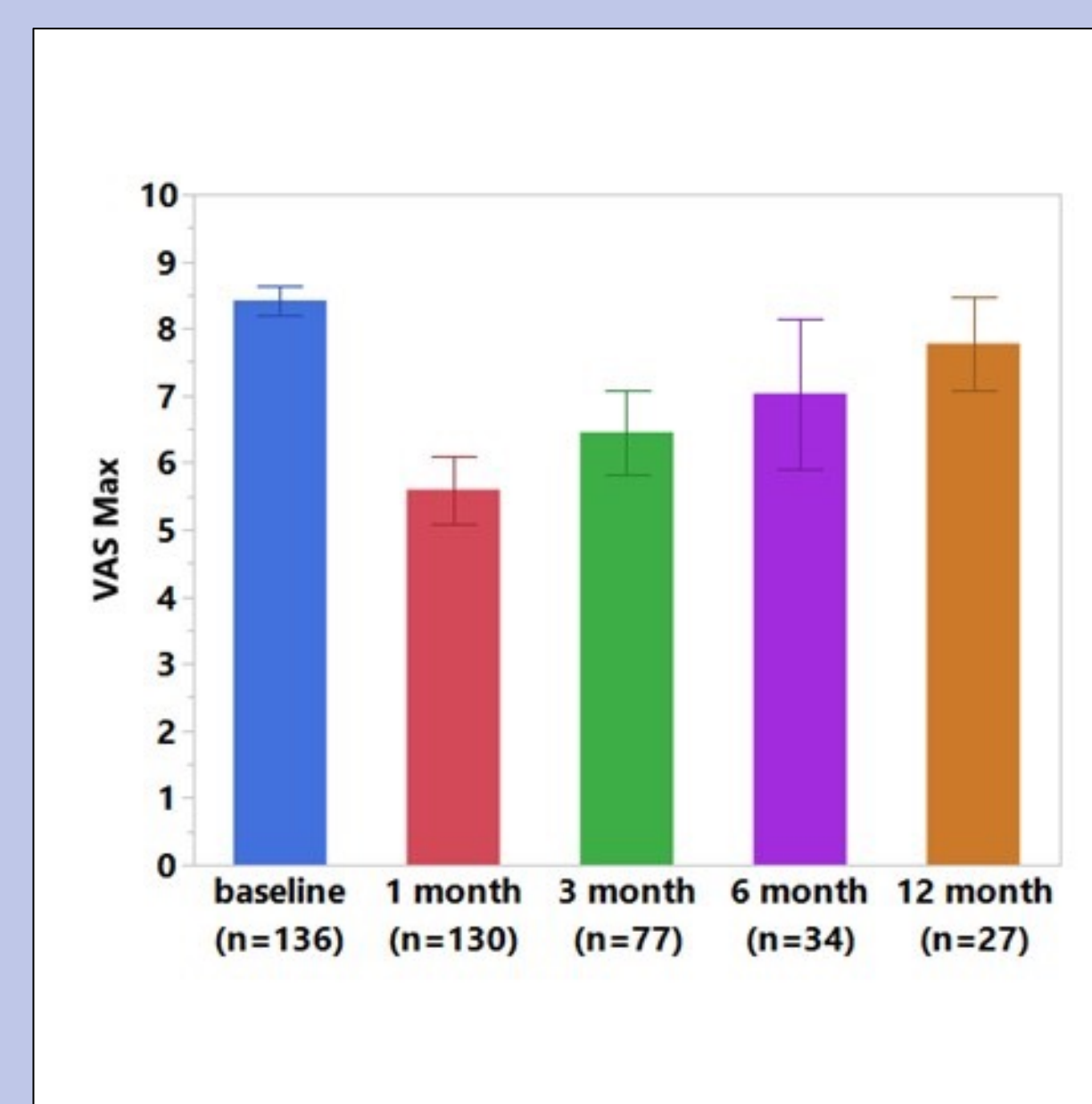


Figure 2. Visual Analogue Scale Maximum Score Improvements Across Follow-Up Were Seen in VAS Average Pain ($P < .001$)

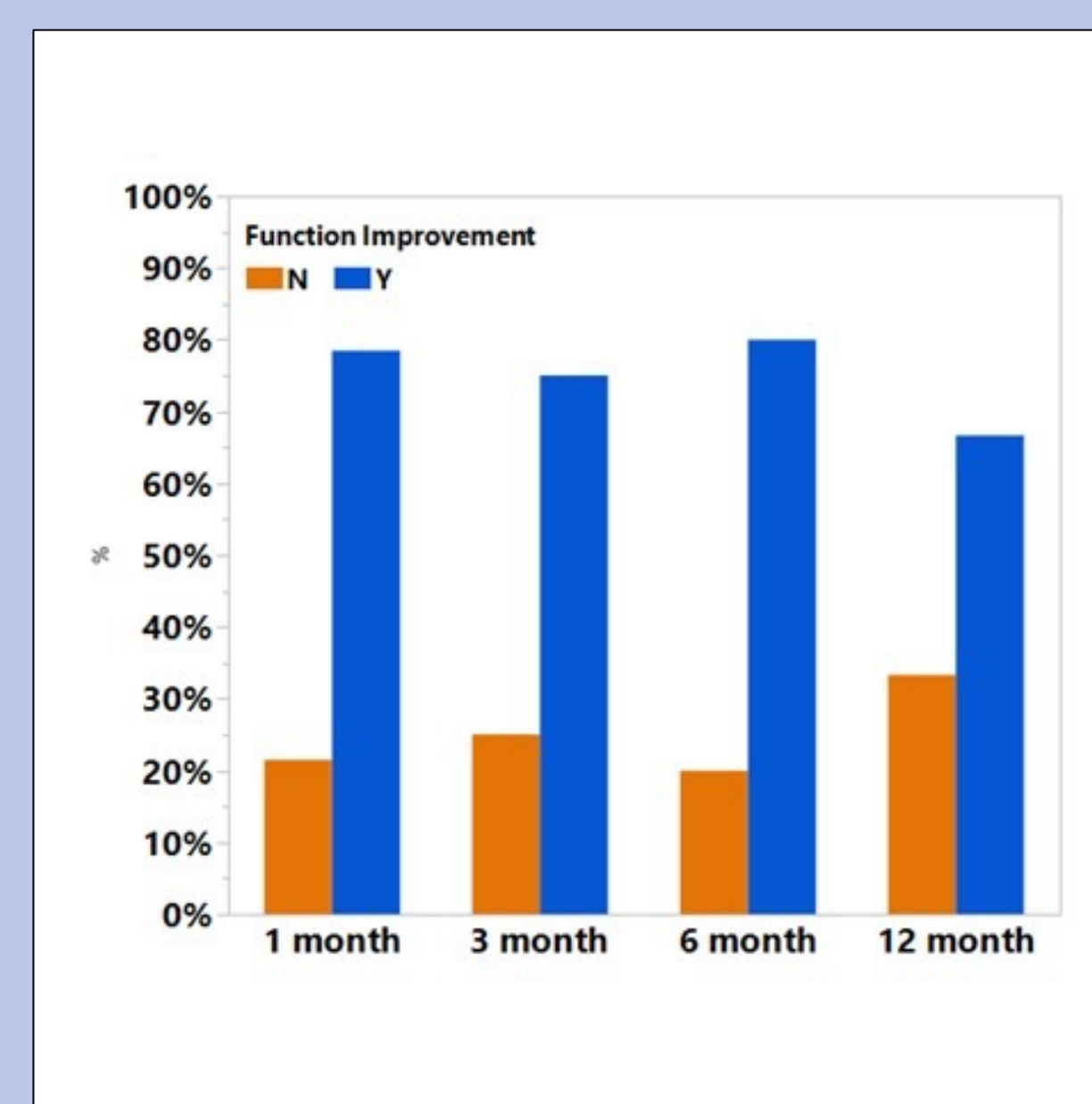


Figure 3. Greater Than 65% of Patients Reported Functional Improvements at Each Follow-Up

Results

- Patient Demographics
 - Total patients: 136
 - Mean age: 74.4
 - Mean BMI: 29.5
- Greatest improvement from baseline for both average ($P < .001$) and maximum ($P < .001$) was at one month
- Statistically significant improvements from baseline were still evident at 12-month follow-up
- Functional improvements remained high, with no statistically significant decreases over time ($P = .559$); >65% of patients reported functional improvements at each follow-up

Discussion

The MILD procedure aims to relieve symptomatic spinal stenosis by debulking the hypertrophied ligamentum flavum which is part of the stenosis without the need for general anesthesia, large incisions with tissue deviations, or hospitalization and prolonged rehabilitation.

This study demonstrates a significant reduction in both average and maximum pain scores alongside reported significant functional improvements by a majority of our patients, underscoring the effectiveness of this minimally invasive technique over a follow-up period of 12 months.