

“Percutaneous Peripheral Nerve Stimulation of the Lumbar Medial Branch Nerves Improves the Quality of Life for U.S. Veterans with Low Back Pain”

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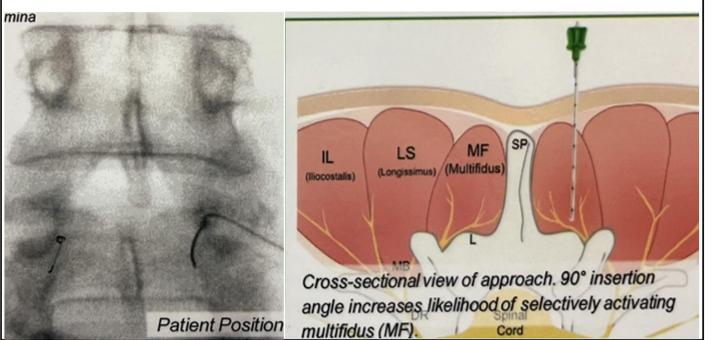
Introduction

Peripheral Nerve Stimulation (PNS) of the medial branch nerves is a procedure that stimulates the multifidus muscles and nerves along the vertebral column to alleviate chronic axial low back pain via neuromodulation. Our case series aims to determine if PNS of the low back for 60 days improves the quality of life for veterans with chronic lower back pain.



Methods

The five patients in the case series were administered an SF-12v2 survey to complete pre-operatively and post-operatively. The PNS SPRINT device was implanted for 60 days. The SF-12v2 survey measures eight domains (physical functioning, role physical, bodily pain, general health, vitality, social functioning, role emotional, and mental health) to assess an individual's MCS (Mental Composite Score) and PCS (Physical Composite Score). The patients were also questioned via a secondary survey to evaluate each patient's pain on a scale of 1-10 pre-operatively and post-operatively. In addition, each patient was asked whether they would recommend PNS.



Data

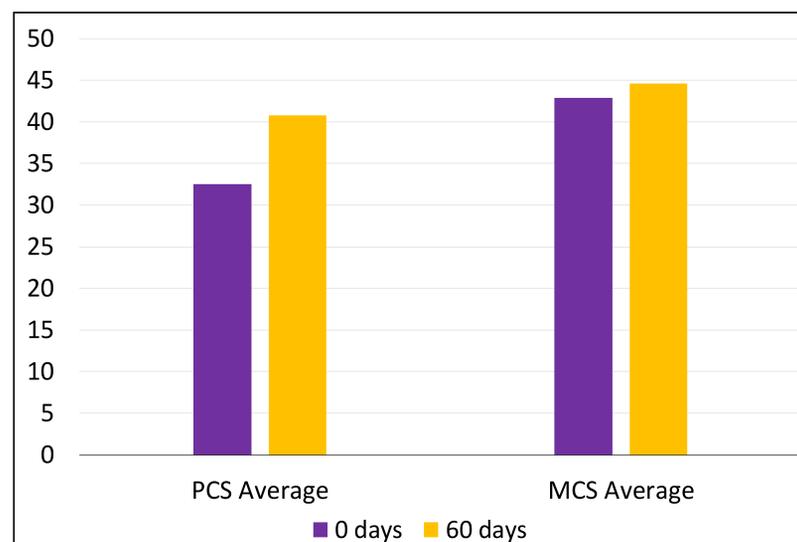


Figure 1: Mean PCS and MCS of patients pre-operatively and post-operatively at 60 Days (n = 5)

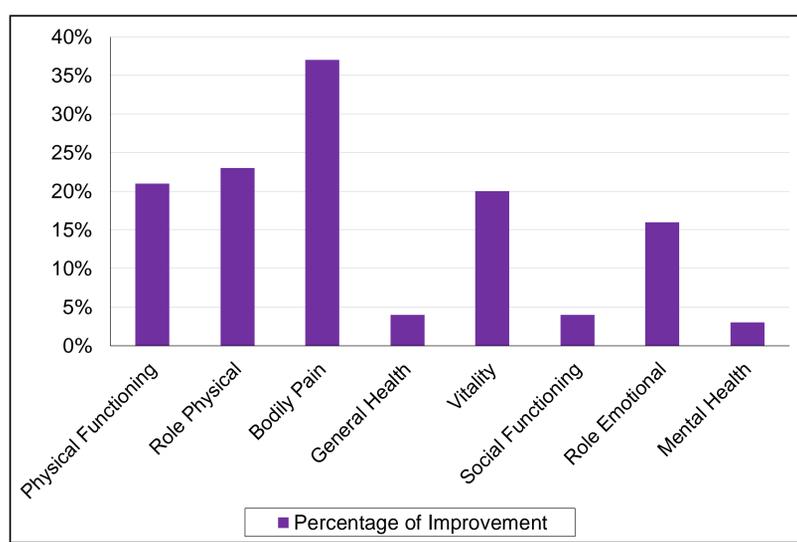


Figure 2: Average percentage of improvement of the 8 domains post operatively at 60 Days (n = 5)

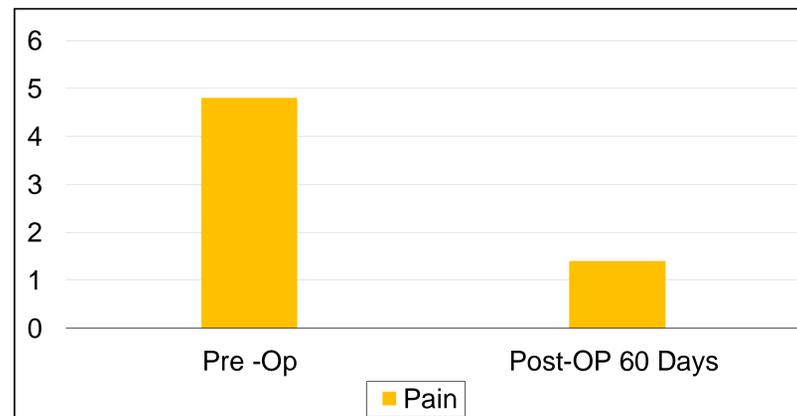


Figure 3: Mean pain score recorded before and after PNS 60 Day treatment. (n = 5)

Data Cont.

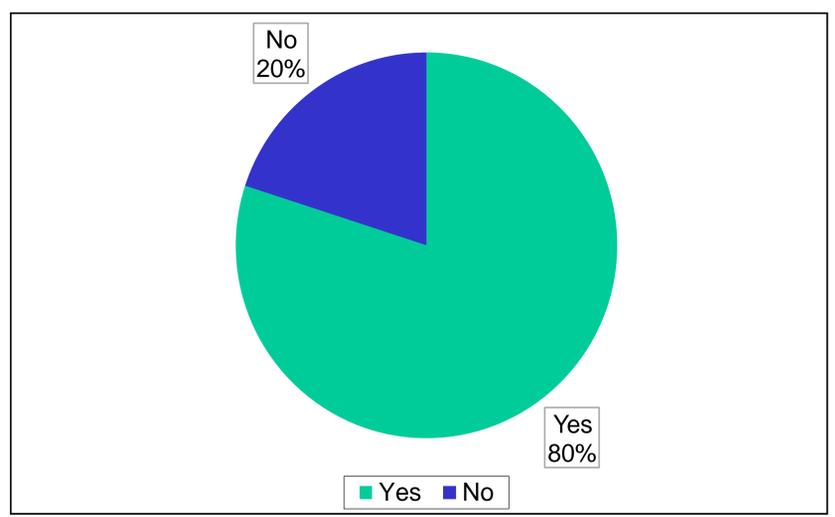


Figure 4: Patients response when asked if they would recommend PNS to a fellow U.S. Veteran. (n = 5)

Results

There was an average increase of 8.234 points (p=0.004; p<0.05) for the patients' PCS. As for the MCS, there was an average increase of 1.674 points for the patients' MCS (p=0.527; p>0.05) which was statistically insignificant. A substantial improvement of 37% in the average bodily pain score on the SF-12v2 survey indicated a lower subjective perception of pain across all five patients (p = 0.032; p<0.05). For the customized secondary survey, there was an average decrease of -3.40 points on the standardized 10-point pain scale for all five patients (p = 0.0074; p<0.05). Additionally, 4 of the 5 patients in the study recommended PNS. One lead fracture occurred during explant which did not cause issues for the patient. Otherwise, there were no complications.

Conclusion

PNS increases the overall quality of life for veterans with chronic low back pain. A significant increase in the patients' PCS and patients' bodily pain scores was observed after 60 Days indicating an overall decrease in patients' subjective perception of pain. There was also a substantial decrease in patients' pain according to the standard 10-point pain scale. 80% of the patients recommended the procedure.