



## Fusion for Spinal Instability after Peripheral Nerve Tumors Surgical Resection with Facetectomy

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### Introduction

Peripheral Nerve Sheath Tumors (PNSTs), including shwannomas and neurofibromas are a group of uncommon tumors originating from nerve and related structures. Standard surgical management for PNST includes facetectomy to allow adequate resection. Herein, we have presented the largest single-institutional experience as well as a literature review to assess the factors associated with having a spinal fusion, compared to facetectomy alone.

### Methods

Institutional medical records and a prospectively maintained cancer registry were queried for all cases of PNSTs. For our study, we included subjects which were managed surgically and categorized into those undergoing facetectomy alone and those undergoing facetectomy plus immediate fusion. Variables of interest included age at the time of surgery, surgery date, tumor size, tissue diagnosis, total operated levels and reason for fusion as per the surgeon’s note, and clinical outcomes.

### Results

Fifty-six patients fit our inclusion criteria. Demographics were evenly distributed among the 2 groups. The most common tumor was found to be schwannoma in both groups (75% in non-fusion group vs 85.7% in the fusion group, p= 0.50). Tumor size was found to be similar in both groups (27.56mm ± 13.44 in non-fusion vs 31.96 mm ± 14.68 in fusion group, p=0.2590). Compared to those undergoing facetectomy alone, patients undergoing fusion were found to have higher odds of having total facetectomy than subtotal facetectomy(OR=6.15, 95%CI=1.19-31.82) and having thoracic involvement(OR=2.25, 95%CI=0.72-7.01). The most common indication for fusion as per surgeon’s assessment was found to be the amount of bone removal. Reoperation rate was similar for both groups. Only one patient who received fusion(3.5%) had pseudarthroses.

### Conclusions

Our results indicate that patients with PNST who have thoracic involvement and require total facetectomy are more likely to get fusion. Moreover, the amount of bone removal leading to instability was found to be the most common indication for fusion compared to facetectomy alone.

### Learning Objectives

- By the conclusion of this session, participants should be able to:
- 1) Discuss the details of surgical management for PNSTs
  - 2) Appreciate the difference in factors associated with a decision to employ fusion along with facetectomy.
  - 3) Discuss the most common indications for performing a spinal fusion in such cases.

### References