

# Thoracic Outlet Syndrome: Is Scalene Block Predictive of Surgical Success?

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## Background

Neurogenic thoracic outlet syndrome (nTOS) is a challenging pathology due to varied and non-specific symptoms that overlap with other neurologic disorders. No standardized work-up or diagnostic tools currently exist for the evaluation and treatment of patients with nTOS.

Scalene block is one diagnostic tool that may be able to assist with the identification of patients that would benefit from thoracic outlet decompression.

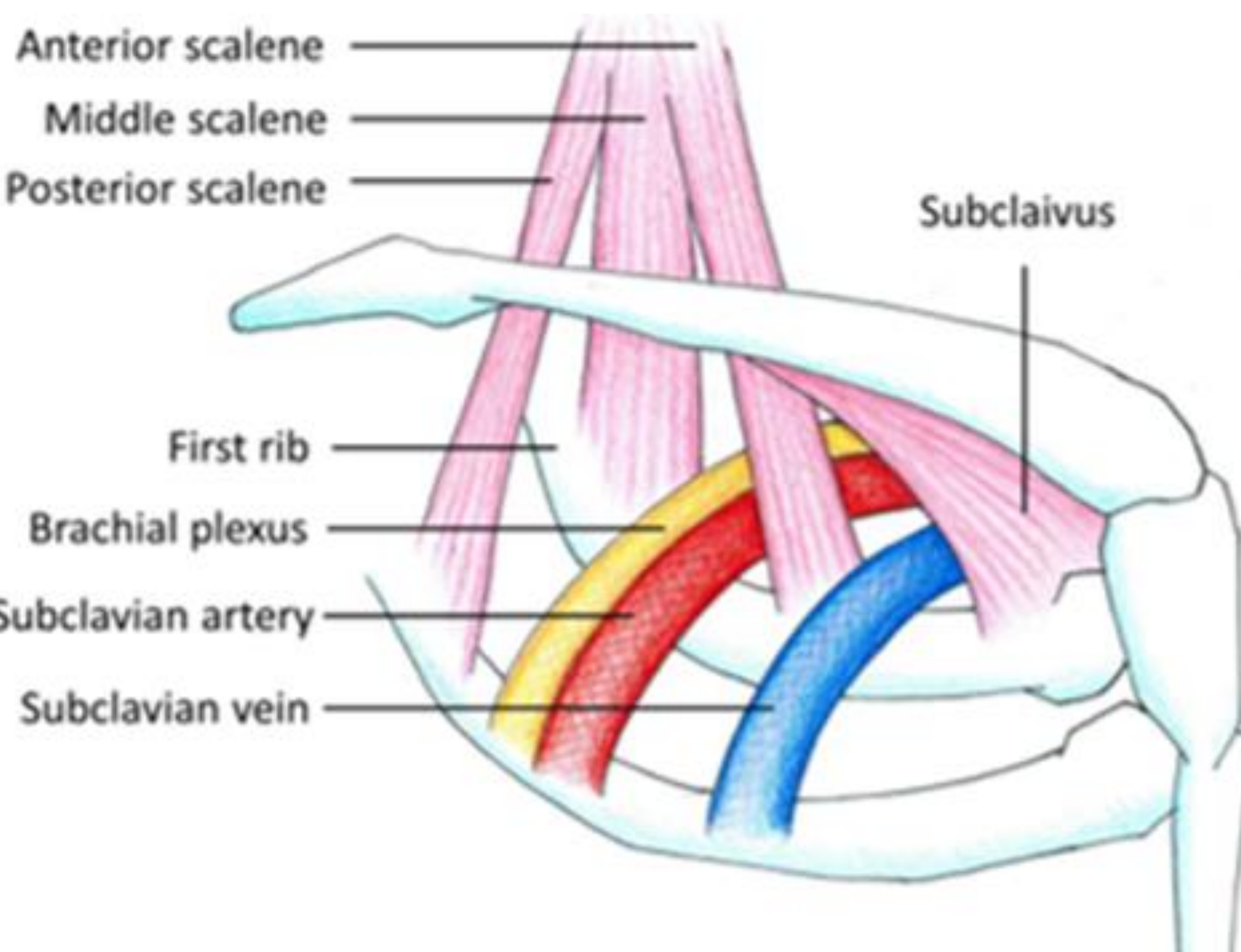


Figure 1. Anatomy of the thoracic outlet.

## Objectives

- Evaluate the predictive value of pre-operative scalene block for post-operative symptom improvement
- Evaluate the predictive value of pre-operative physical exam for benefit from scalene block and post-operative symptom improvement
- Evaluate the predictive value of pre-operative thoracic outlet maneuvers for benefit from scalene block and post-operative symptom improvement

## Methods

- Retrospective review was conducted on patients who were referred for pre-operative scalene block from our TOS clinic from 2018 to 2024
- Patient demographics, presenting symptoms, and pre-operative work-up were collected
- Symptom resolution status following scalene block and after surgical decompression for those that elected to undergo surgery
- Symptom improvement following scalene block and surgical decompression, as application were classified into three categories: complete, partial and no resolution

## Results

	Operative Management (n=51)	Non-Operative Management (n=11)
Age	36	42
Gender		
Male	12	4
Female	38	7
Block Outcome		
No Improvement	2	6
Improvement	49	5

Table 1. Patient demographics.

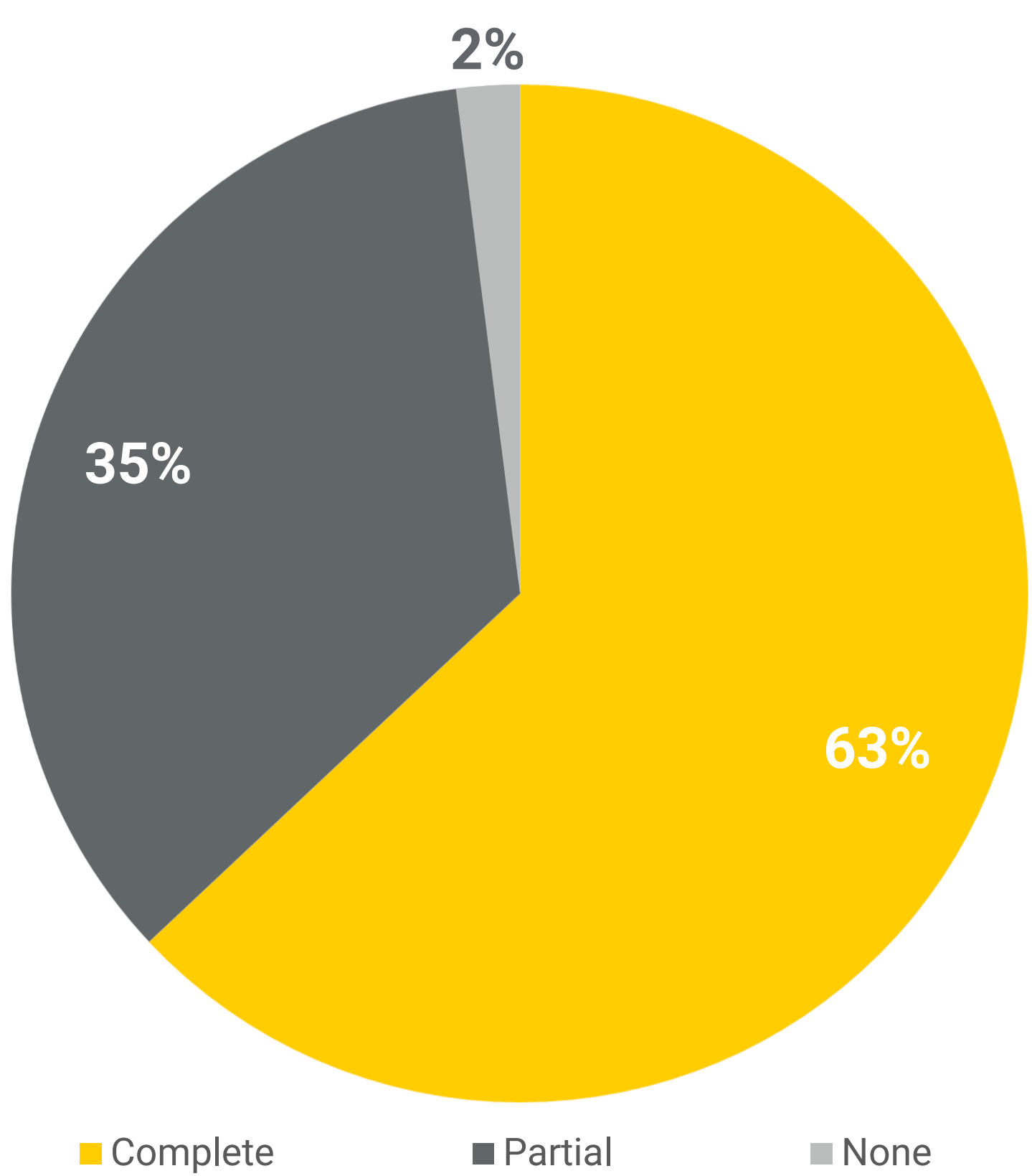


Figure 2. Post-operative symptom resolution for those who underwent first rib resection following scalene block.

## Conclusion

nTOS is a complex pathology whose whose diagnosis can be challenging in patients presenting with nonclassical symptoms. Based on our post-operative outcomes, pre-operative scalene block is an effective tool to accurately predict post-operative symptomatic improvement following first rib resection. The extent of predicted improvement remains variable and a harder measure to quantify given its subjective nature.

**In patients with nonclassical symptoms pre-operative scalene block allows for:**

- Better diagnostic accuracy
- Improved surgical outcomes

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## References

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