



Approach-Specific Risk Factors for Symptom Recurrence in Neurogenic Thoracic Outlet Syndrome

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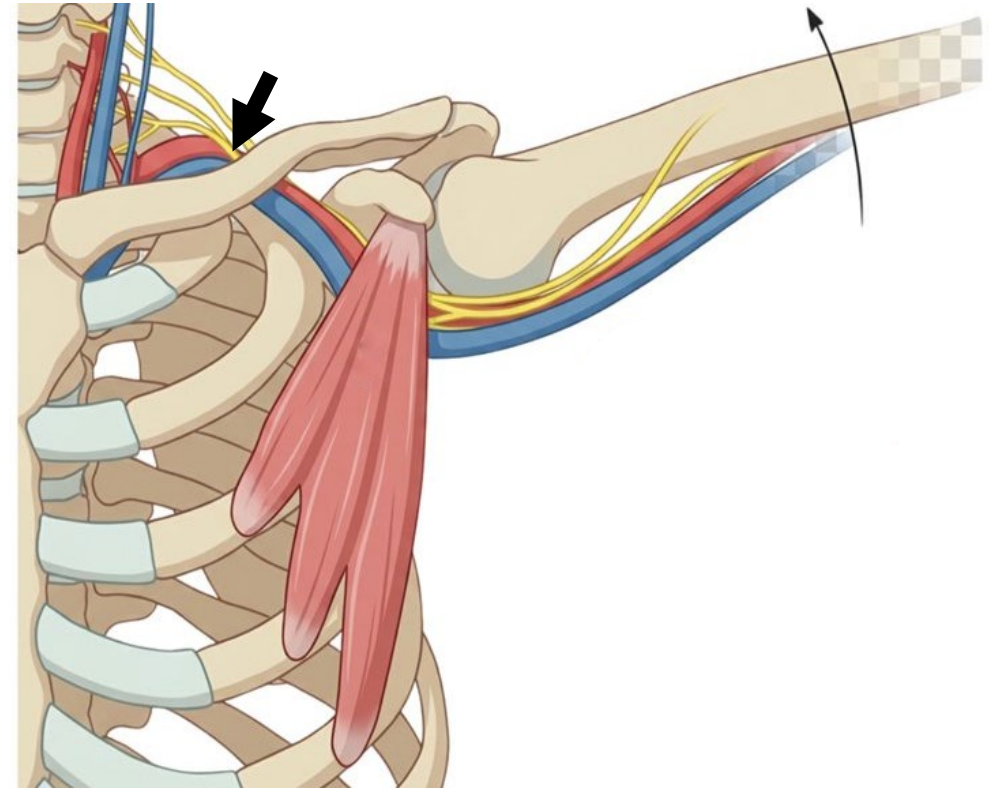
DISCLOSURES

- None

BACKGROUND

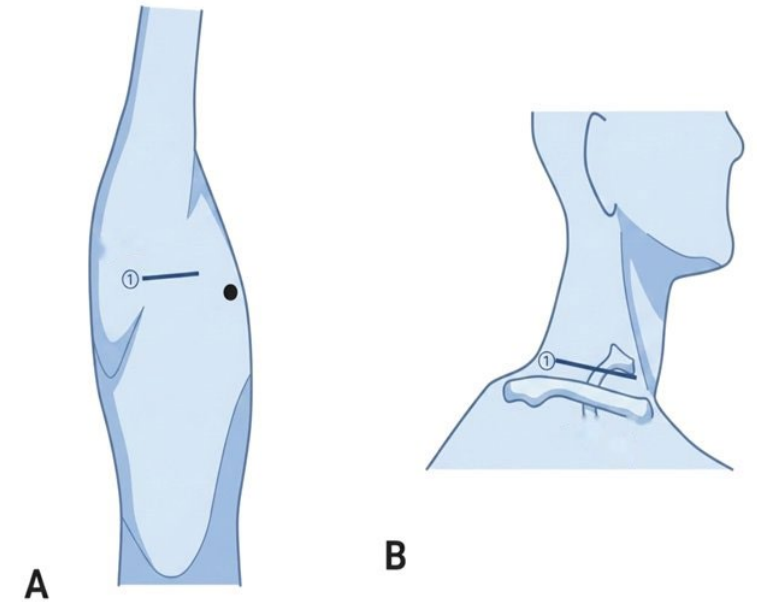
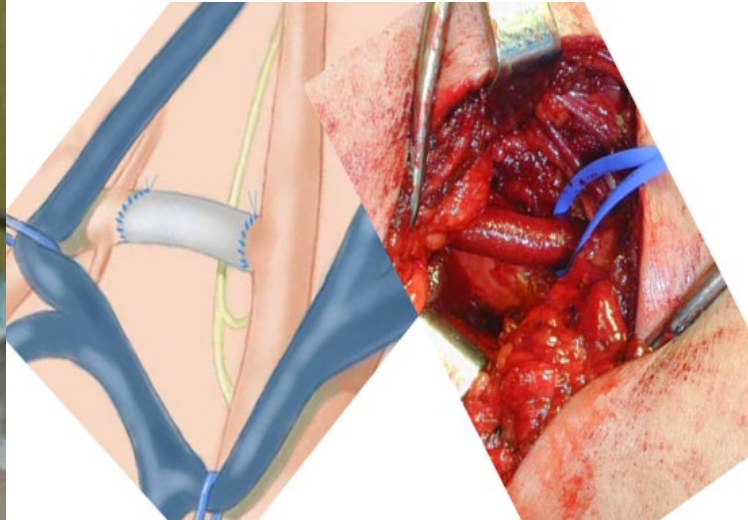
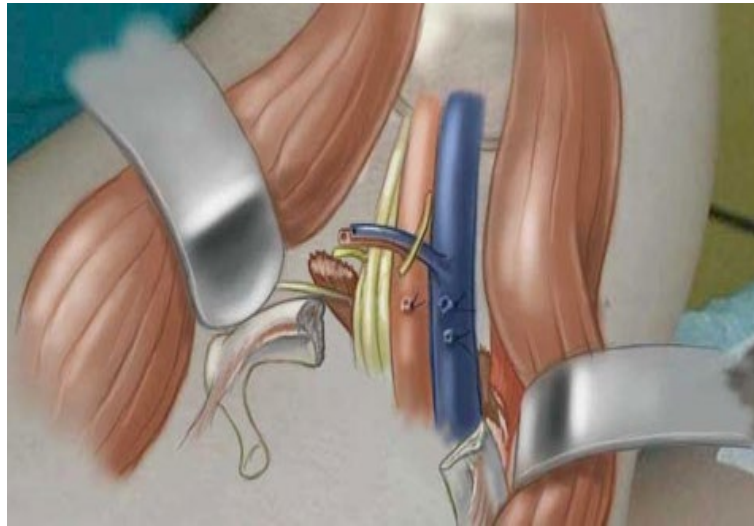
- Neurogenic thoracic outlet syndrome (nTOS) is treated with thoracic outlet decompression (TOD) using transaxillary, supraclavicular, or combined approaches.
- Symptom recurrence remains a challenge.

Objective: To assess whether risk factors for symptom recurrence vary by surgical approach in TOD.



BACKGROUND

Surgical Approaches



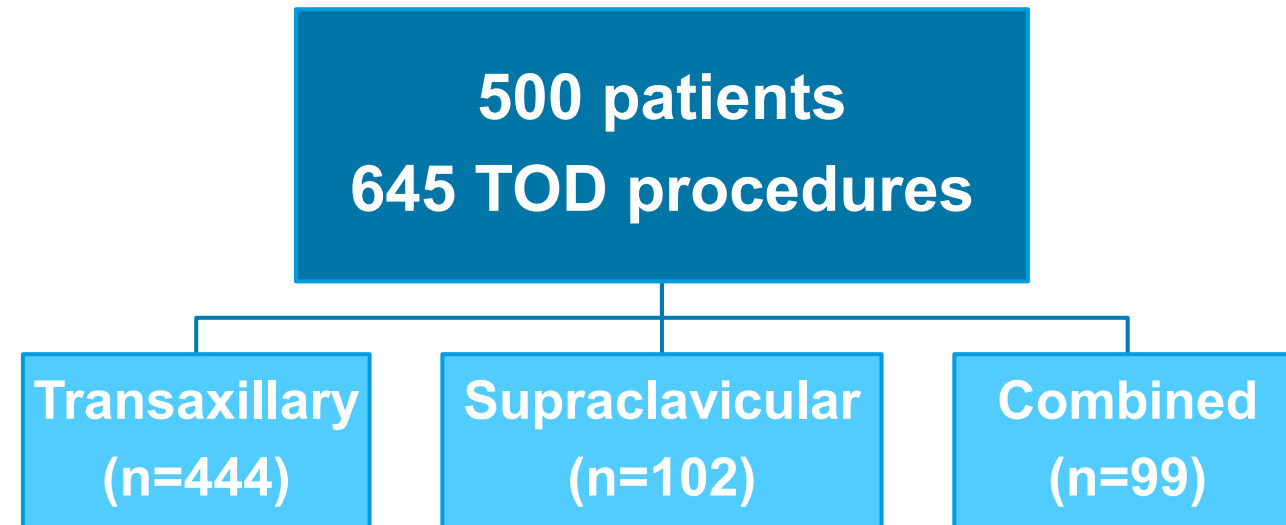
Transaxillary

Supraclavicular

Combined

METHODS

- **Design:** Retrospective cohort study.
- **Timeframe:** 1987-2024.
- **Population:**
 - 500 patients.
 - 645 TOD procedures.
 - 145 bilateral.
- **Surgical Approach:**
 - 444 Transaxillary.
 - 102 Supraclavicular.
 - 99 Combined.



METHODS

- **Inclusion Criteria:**

- Confirmed nTOS diagnosis.
 - Clinical examination.
 - Imaging.
 - Provocative testing.
 - Physical therapy for 3 months without symptom improvement.

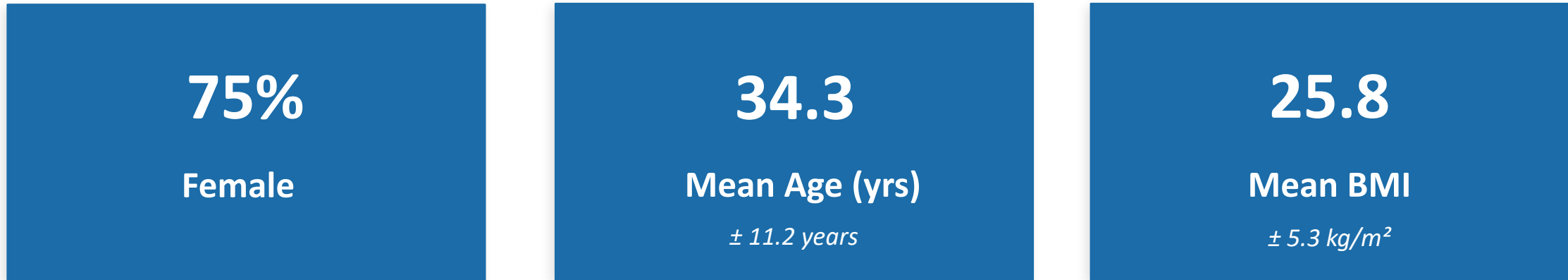
- **Exclusion Criteria:**

- Arterial or venous TOS.
- Incomplete records.

- **Primary Outcome:** Symptom recurrence by surgical approach (persistence or recurrence during follow-up).
- **Statistical Analysis:** Univariable and multivariable logistic regression to identify predictors of recurrence.

RESULTS

Study Cohort



Surgical Approach Breakdown



RESULTS

Recurrence Rates

**OVERALL
RECURRENCE**

11.9%

77 / 645 procedures

**88.1% sustained improvement
at final follow-up**

Transaxillary

n = 56/444

12.6%

Supraclavicular

n = 14/102

13.7%

Combined

n = 7/99

7.1%

RESULTS

Approach Specific Predictors of Recurrence

Transaxillary TOD- Multivariable Analysis

| Predictor | OR | 95% CI | p-value |
|-----------------------|------|-----------|---------|
| Cervical Rib | 2.72 | 1.30-5.44 | <0.01 |
| Prior Shoulder Injury | 2.29 | 1.10-4.53 | 0.02 |

Supraclavicular TOD- Multivariable Analysis

| Predictor | OR | 95% CI | p-value |
|---------------------|------|------------|---------|
| Psychiatric History | 3.58 | 1.05-12.63 | 0.04 |

RESULTS

Predictors of Recurrence – Overall Cohort

Multivariable Logistic Regression

| Predictor | OR | 95% CI | p-value |
|-----------------------|------|-----------|-------------|
| Prior Shoulder Injury | 1.90 | 1.01-3.40 | 0.04 |
| Psychiatric History | 1.86 | 1.11-3.07 | 0.02 |
| Repetitive Arm Sports | 1.90 | 1.02-3.40 | 0.04 |

- → ~2× higher odds of recurrence.

LIMITATIONS

- Retrospective single-institution design.
- Long study period with potential changes in surgical practice over time.

CONCLUSION

- Prior shoulder injury, psychiatric history, and arm sports predicted recurrence.
- Risk factors differed by surgical approach.
- Findings support tailored patient selection and counseling.



Thank you

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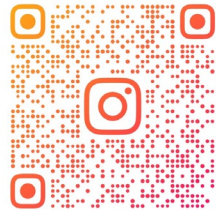
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