

Thoracic Outlet Syndrome

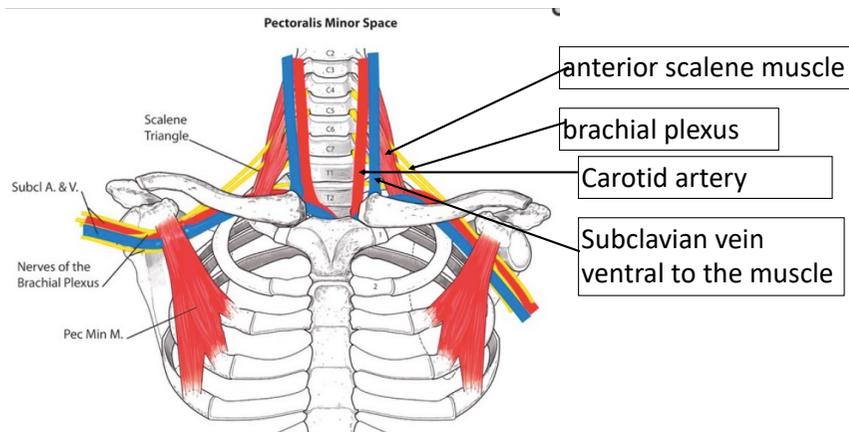
Robert Gerwin MD, FAAN
Associate Professor of Neurology
Johns Hopkins University
Baltimore, MD, USA

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Thoracic Outlet Syndrome

- Clinical Diagnosis
 - Non-specific symptoms: pain in shoulder, arm, hand
 - Neurologic symptoms: paresthesias, raynaud's phenomenon (sympathetic irritation), weakness

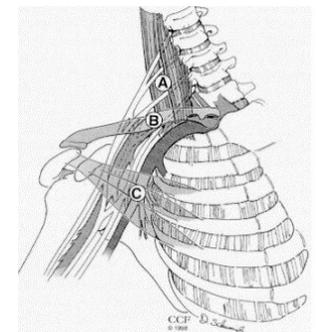
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Thoracic Outlet Syndrome

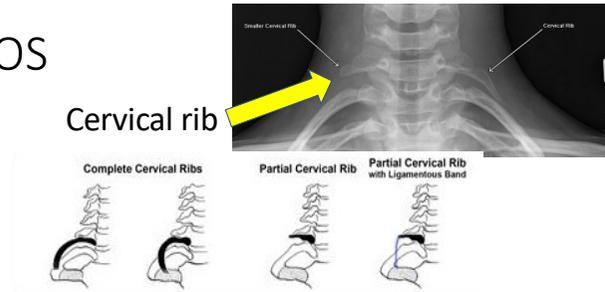
- Thoracic Outlet Syndrome
 - True Neurogenic
 - True Vascular
 - (arterial, venous or both)
 - Traumatic
 - Disputed



A: interscalene compartment
B. Costoclavicular space (thoracic inlet)
C. pectoralis minor hyperabduction syn

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True Neurogenic TOS



- Rare, unilateral
- Women >Men
- bony abnormality (cervical rib, ligamentous band: tip of cervical rib to 1st rib)
- Lower trunk to T1 anterior primary ramus: stretched over rib or taut band

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Neurogenic/Myogenic Thoracic Outlet Syndrome: 4 sites of compression

1. interscalene compartment: trigger points in scalene muscles causing nerve entrapment
2. costoclavicular space: first rib elevated by scalene muscles
3. retro-pectoralis minor space (hyperabduction syndrome): entrapment by pectoralis minor*
4. humeral head

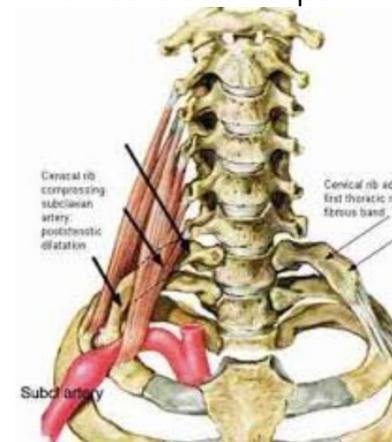
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Myogenic Thoracic Outlet Syndrome

1. Cause of Neurovascular compression
2. Mimicry of TOS

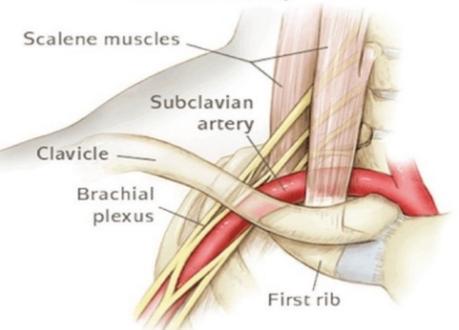
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Interscalene compartment



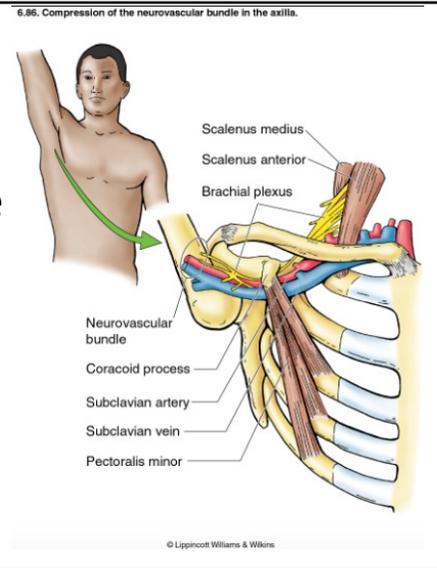
Costoclavicular Syndrome

Normal Anatomy



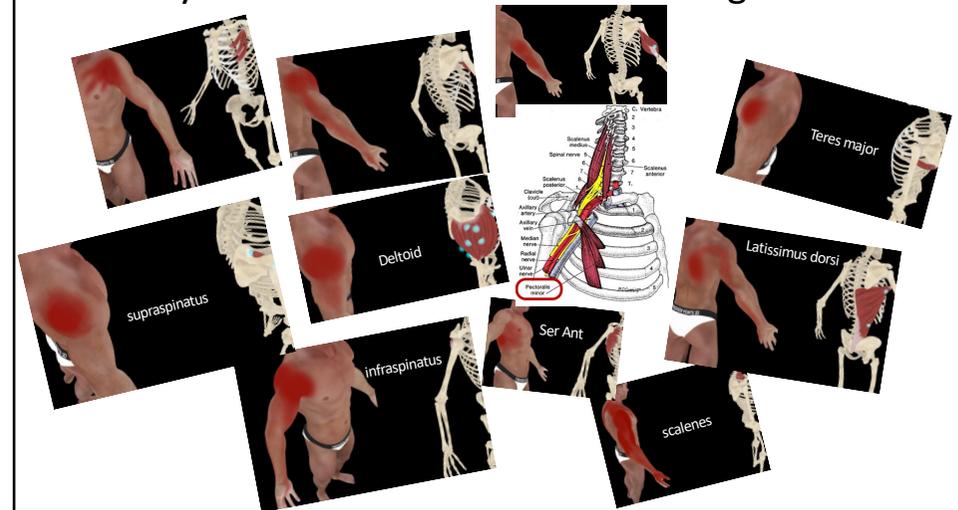
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Hyperabduction Syndrome



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Myofascial Referred Pain Mimicking TOS Pain



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Conclusion I

- True Thoracic Outlet Syndrome:
 - Rare
 - neurologic signs;
 - objective lab abnormalities;
 - anatomic variations:
 - cervical ribs or trauma

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Conclusion II

- Myogenic thoracic outlet:
 - common
 - trigger points;
 - no neurologic abnormalities;
 - normal lab tests

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