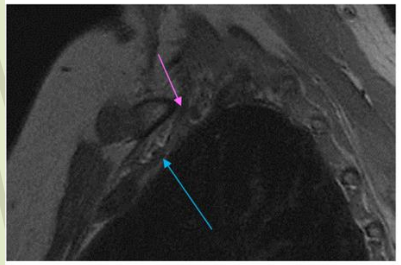
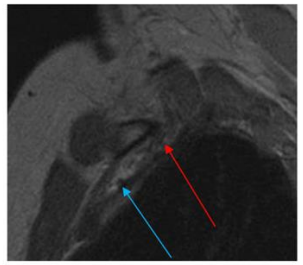
Definitive Diagnosis For Thoracic Outlet Syndrome

BACKGROUND: Thoracic Outlet Syndrome (TOS) represents a constellation of signs and symptoms related to compression of the neurovascular bundle at the interscalene triangle, the costoclavicular, and retro-pectoralis minor spaces. There is considerable debate on diagnosis and clinical management. Most agree TOS is due to impingement of the brachial plexus (Neurogenic TOS) and/or the subclavian vessels (Arterial/Venous TOS) in the narrow passageways described. Practitioners must consider the pathology of TOS in their differential diagnosis for varying shoulder and upper extremity pain symptoms. Definitive diagnosis of thoracic outlet syndrome is complex, and often times vague.
METHODS: We present imaging protocols including dynamic contrast enhanced MRI/MRA sequences, and case images showing how this novel approach confirms the clinical diagnosis of TOS.
RESULTS: We demonstrate that this protocol identifies etiologies which may be neural and/or vascular in origin. These findings guide treatment, as it precisely indicates the involved anatomical region. It allows for definitive diagnosis, and disease severity as well. We present a case series that outlines the utility of the imaging protocol, and our multidisciplinary care approach that ultimately necessitated first rib resection.
CONCLUSIONS: We have developed a unique multidisciplinary, diagnostic and treatment approach, ranging from manual and physical therapy, to ultrasound guided nerve blocks, to surgical first rib resection. We detail a case with a successful outcome of TOS, and our patient specific approach that mitigates much of the ambiguity involved with the diagnosis and efficacious treatment of thoracic outlet syndrome.





Arm hyperabduction
Compression of subclavian
artery and vein

Prominent anterior scalene muscle
contributing to CC narrowing

