Peripheral Nerve Entrapments That Mimic Spinal Pathology: Evaluation And Treatment Both Medical And Surgical

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Disclosure - Nothing
Diagnosis

Cervical Radiculopathy VS Peripheral Entrapment

- C5/6 vs CTS
- C7 vs Suppinator
- C8/T1 vs UNEE or Pronator Teres
- L5 vs Peroneal Entrapment
- L3 vs Meralgia Paresthetica
- L4 vs Femoral Neuropathy
- S1 vs Tarsal Tunnel

C5/6 Radiculopathy VS Suprascapular Neuropathy: Entrapment And Mass

- Shoulder pain, not neck pain, without sensory findings for suprascapular entrapment
- Involvement of supraspinatus and infraspinatus muscles and not biceps for suprascapular entrapment

Suprascapular Nerve: Diagnosis

- Pain in upper shoulder and scapular region
- Weakness in supraspinatus and/or infraspinatus
- EMG/NCV: Muscle denervation in SS and/or SS
- Injection of local anesthetic at suprascapular notch relieves pain
- Entrapment at notch
- Ganglion cyst from spinoglenoid notch can selectively involve branch to infraspinatus
Anterior Exposure of SSN

Posterior Approach To SSN

SSN below ligament  Ligament divided – beware of artery

Suprascapular Nerve
Suprascapular Nerve Intraneural Ganglion Cyst

C5/6 Radiculopathy vs Upper Trunk Mass
- Can be similar.
- Palpable mass
- Family history of neurofibromatosis or Schwannomas.
- Imaging.
R UT Post Div NST MR DTI

No Motor Response: Ant-Sup  + Motor Response: Post-Inf

R UT Post Div NST MR DTI

Left C6 Dumbell Mass

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C5/6 Radiculopathy VS Pronator Teres Syndrome Vs Carpal Tunnel Syndrome

- Sensory symptoms may be similar (C5/6 supplies median nerve)
- Distal median nerve compression may also produce pronator teres weakness and/or pain in forearm and thenar weakness and atrophy in hand (from C8/T1 motor contribution)

Carpal Tunnel Syndrome

Open Decompression

Open Carpal Tunnel Release

C8/T1 VS Ulnar Nerve Entrapment Across The Elbow Within Cubital Tunnel

- Involvement of thenar (median supplied) as well as hypothenar and other hand intrinsic (ulnar supplied) muscles.
- Sensation reduced along medial upper arm and forearm for C8/T1 radiculopathy.
- Sensation usually splits ring finger for ulnar neuropathy.
- Entrapment of distal ulnar nerve in Guyon’s Canal Spares sensation along dorso-ulnar wrist.
Ulnar Decompression

Enlarged And Entrapped Right Ulnar Nerve Across the Elbow

Enlarged And Entrapped Right Ulnar Nerve Across the Elbow

Right Ulnar Nerve On Right

Elbow Flexion Compresses Nerve
Enlarged And Entrapped Right Ulnar Nerve Across the Elbow

Compressive Band

Decompressed Nerve

C8/T1 Radiculopathy VS TOS

- Symptoms exacerbated by certain postures (arm abduction in case of TOS).
- EMG/NCV with involvement of paraspinal muscles in case of C8/T1 radiculopathy.
- Adson’s maneuver non-specific.

R TOS With C7 Rib
C7 Radiculopathy VS Radial Tunnel

- Involvement of Triceps and paraspinal muscles for C7.
- Exacerbated by supination for radial tunnel.

L3 Radiculopathy VS Meralgia Paresthetica

- Classic hands in pocket (anterolateral thigh) distribution of sensory loss and burning dysesthesias with no weakness for MP.
- Tight belts or jeans and protuberant belly for MP.
- Local anesthetic block of lateral femoral cutaneous nerve relieves sensory symptoms.
L5/S1 Radiculopathy VS Pyriformis Or Sciatic Mass

- Paraspinal involvement for proximal L5/S1 radiculopathy.
Left Pyriformis With Ultrasound Guidance

R Prox Sciatic NST (Ultrasound Is Our Stealth)

R Prox Sciatic NST (Cooperative)
Using McEvoy Butt Retractor

R Prox Sciatic NST (Cooperative)
Some NSTs Are Symptomatic, Benign, And Very Resectable Without Causing Functional Deficits

Foot Drop From L5 Radiculopathy VS Peroneal Entrapment Or Mass

- No involvement of short head of the biceps femoris muscle in distal peroneal entrapment at fibular head.
- Weakness in inversion (tibial) as well as eversion for L5 radiculopathy.

Right Peroneal Entrapment W Positive MRN and NCV Findings

+ MRN T2: subtle

MRN T1
Right Peroneal Entrapment
W Positive MRN and NCV Findings

Pre-exposure of nerve
Anatomy

Cutting compressive band

Nerve entrapment
NCV delay

Right Peroneal Entrapment
W Positive MRN and NCV Findings

Pre-exposure of nerve
Proximal exposure/stim of nerve
S1 Radiculopathy VS Tibial Mass Or Tarsal Tunnel

- Paraspinal involvement for S1 radiculopathy.
- No involvement of gluteal or hamstring muscles for tarsal tunnel or distal tibial nerve problem.
Tarsal Tunnel Syndrome