Common Upper Extremity Neuropathies
(Not Carpal Tunnel Syndrome)
Nerve Compressions

- Common in adults, rare in children
- Frequently cause missed days of work and sleepless nights
  - CDC 2001 – 26,794 cases of CTS with median 25 days missed vs. 6 days for average nonfatal injury or illness
  - CTS may affect 11.8M people in the US (3.75% population) McCabe et al 2007
  - NYT suggests over 500,000 CTRs performed in 2012
Nerve Compressions

- Patient’s history will often tell you most of what you need to know
- Nighttime and workplace symptoms are common
- Physical examination is confirmatory
- Usually NCS +/- EMG will provide factual evidence
Nerve Compressions

• More often than not, symptoms are sensory
• Worst cases may involve motor deficits
• Pain is uncommon complaint
• Typical complaints involve numbness, tingling, and weakness
Cubital Tunnel Syndrome

- Numbness, tingling, weakness
- Second most common upper extremity nerve compression
- Increased symptoms with elbow flexion
- Nighttime symptoms common
Cubital Tunnel Syndrome

- Ring and pinky fingers as well as ulnar margin of forearm
- Nerve may subluxate creating a popping sensation
- May complain of loss of strength with grip
- Worst cases demonstrate first web and interosseous wasting
- Froment’s sign (thumb IP flexion during pincer grasp)
- Wartenberg’s Sign (small finger abduction)
Cubital Tunnel Syndrome

- Cubital Tunnel Syndrome Nonsurgical Management
  - Elbow pads for nighttime use
  - Nerve glides, physical therapy
  - Postural training

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Cubital Tunnel Syndrome

• Cubital Tunnel Syndrome
  – Surgical Management
  – Conservative measures typically don’t cure
  – Requires 2 weeks in an elbow extension splint (this really sucks!)
  – May move elbow after two week appointment
  – Typically require @ 4 weeks of PT
Cubital Tunnel Surgical Management
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Guyon’s Canal Syndrome

• Less common than cubital tunnel syndrome
• Compression of ulnar nerve at the wrist
• Patients complain of:
  – Numbness
  – Burning/tingling
  – Weakness
• Pain unusual
• Similar presentation to cubital tunnel syndrome
Guyon’s Canal Syndrome

- **Relevant anatomy**
  - Contiguous with carpal tunnel
  - Pisiform and hook of hamate are landmarks
  - Tunnel transmits ulnar artery and nerve
  - Ulnar nerve bifurcates around hook of hamate
Guyon’s Canal Syndrome

- Clinical Testing
  - Compression
  - Tinel’s

- Electrodiagnostic testing
  - Can typically differentiate between Guyon’s and Cubital compression
Guyon’s Canal Syndrome

• Treatment
  – Injections
  – Therapy (nerve glides)
  – Surgical release
Radial Tunnel Syndrome

• Relatively uncommon
• Pain and aching are main complaints
• Can be confused with tennis elbow and may occur simultaneously
• VAGUE symptoms with dorsal forearm radiation
• Worst cases present with wrist drop
Radial Tunnel Syndrome

- Relevant Anatomy
- Posterior Interosseous Nerve branch of radial nerve
- Arcade of Frohse
- Entrance to supinator
- Nerve travels between superficial and deep heads of supinator
- Fibrous bands may be present
Radial Tunnel Syndrome

• Clinical Diagnosis
• Pressure over Arcade of Frohse
• Resisted long finger extension or passive long finger flexion during wrist and finger extension
• Resisted supination and full pronation with flexed wrist
• Electrodiagnostic testing
  – NCS unreliable
  – 80% of patients with this problem have negative NCS
Radial Tunnel Syndrome

• Treatment
  – Injections frequently helpful and may be curative
  – Therapy often also beneficial
  – Surgery is performed if conservative measures fail
Pronator Teres Syndrome

- Compression of the median nerve in the proximal forearm
- Symptoms similar to Carpal Tunnel Syndrome (median nerve distribution)
- Weakness of thumb FPL, index FDP and pronator quadratus (AIN)
- Most common cause is compression of the median nerve between the two heads of the pronator teres
- Nerve may also be trapped at the fibrous arch of the FDS
Pronator Teres Syndrome

• If AIN palsy present, will see demonstrable physical signs
• Tenderness over proximal median nerve
• Pain with resisted pronation
• NCS should identify specific compression point
Pronator Teres Syndrome

• Treatment typically conservative
• Antiinflammatories, Ice, PT
• Injections may help
• Surgical decompression for resistant cases
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