Upper Extremity Nerve Entrapment
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Entrapment or compressive neuropathies are important and widespread debilitating clinical problems, especially in patients with predisposing occupations or with certain medical disorders. They are caused by mechanical dynamic compression of a short segment of a single nerve at a specific site, frequently as it passes through a fibro-osseous tunnel, or an opening in fibrous or muscular tissue.

Lecture Objectives
• Basic Principles
  Pathophysiology
  Diagnosis
  History
  MRI

Pathophysiology
• Systemic conditions may impact, particularly diabetes, thyroid disease, alcohol abuse
• Mechanical Compression
• Traction (strain)
• Ischemia

The Goal of diagnosis and hence early treatment treatment is to prevent irreversible change:

• Segmental demylination
• Global demyelination
• Intrinsic fibrosis
• Altered axonal transport
• Axon loss

Median Nerve Compression
• Commonest upper limb nerve entrapment
  Carpal tunnel syndrome
• Pronator Syndrome
  Supracondylar Process/ligament of Struthers
  Bicipital aponeurosis (lacetus fibrosis)
  Pronator teres fibrous arch
  FDS arch
  Gantzer’s muscle
• Anterior interosseous nerve syndrome

Ulnar Nerve Compression
Ulnar neuropathy at elbow is the second most common entrapment neuropathy after CTS. The ulnar nerve can become compressed primarily in two areas:

  1) Cubital Tunnel Syndrome
2) Ulnar Tunnel Syndrome (Guyons canal)

Radial Neuropathy
1) PIN palsy - Motor weakness
2) Radial tunnel syndrome – pain
3) Wartenberg’s Syndrome - Superficial radial nerve compression, Repetitive activity, Superficial compression, irritation in interval between BR and ECRL
4) Neuroma in the spiral groove – Saturday night palsy

Quadrilateral Space Syndrome
Occlusion of the posterior circumflex humeral artery and compression of the axillary nerve occurring in the abducted, externally rotated position where it courses through the quadrilateral space

Suprascapular nerve palsy
Most commonly compressed in the spinoglenoid notch by cysts but can also occur at the transverse scapular notch

Thoracic outlet syndromes
Neurogenic thoracic outlet syndrome is caused by abnormal bands crossing the brachial plexus, often inserting on a rudimentary cervical rib