Upper Limb Anatomy

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Carpal tunnel
Carpal tunnel syndrome

Symptoms

- Pain, numbness, paraesthesia in distribution of median nerve
- Worse at night – “shake out” wrist
- Exacerbated by persistent or frequent flexion or extension of the wrist
Brachial plexus
Median nerve

Coracobrachialis
Musculocutaneous nerve
Biceps brachii
Brachialis
Pronator teres
Flexor pollicis longus
Pronator quadratus
Thenar muscles
Lumbricals to digits 2,3

Spinal nerves
C3 C4 C5 C6 C7 C8 T1

Flexor carpi radialis
Palmaris longus
Flexor digitorum superficialis
Flexor digitorum profundus (lateral half to digits 2,3)
Median nerve - motor functions

Forearm flexors
(except flexor carpi ulnaris and ulnar half of flexor digitorum profundus)
Median nerve – motor function

Thenar muscles
Thenar muscles

Movements of the thumb

Abduction  Adduction  Extension  Flexion  Opposition  Reposition
Thenar muscle wasting
Median nerve – motor function

$1^{st}$ and $2^{nd}$ lumbricals
Median nerve – sensory function
Carpal tunnel syndrome

Examination
- Sensation – lateral three and a half digits, sparing of the palm
- Thumb abduction
- Wasting of thenar muscles
- Tinel sign
- Phalen sign

Investigations
- Nerve conduction studies
Treatment

1. Wrist splinting
Treatment

2. Glucocorticoid injection

- Anterior approach
- Angle of needle inserted at 45° near proximal border of flexor retinaculum (distal wrist skin crease)
- Medial to palmaris longus tendon and median nerve
- Potential damage to median nerve
- Small amount only
Treatment

3. Surgical decompression