

Unit 27:

Upper limb 3 (forearm and hand)

GENERAL OBJECTIVES:

- general considerations of the organization of the forearm and hand
- irrigation and innervation of the forearm and hand

SPECIFIC OBJECTIVES:

1. Extensor Compartment of the Forearm

Superficial layer	Brachioradialis Ext. Carpi Radialis Longus Ext. Carpi Radialis Brevis Extensor Digitorum Ext. Digiti Minimi Extensor Carpi Ulnaris Anconeus
Deep layer	Abductor Pollicis Longus Extensor Pollicis Brevis Extensor Pollicis Longus Extensor Indicis Supinator

2. Fascia of the Hand

Flexor Retinaculum (--> Roof of Carpal Tunnel)

Extensor Retinaculum (Septa --> 6 tunnels for Extensor tendons)

Septa & Creases which bind skin of palm to deep fascia

Palmar Aponeurosis

(3) Septa -> (4) Fascial Spaces of Palm

Superficial Transverse Metacarpal Ligament

Deep Transverse Metacarpal Ligament

Fibrous Flexor Sheaths of Digits (-> tunnels for Long Tendons)

Long Tendons (from 'extrinsic' muscles and synovial sheaths)

Flexor Tendons

Synovial Sheaths: (of long flexors of fingers & thumb)

(2) Carpal Synovial Sheaths

(5) Digital Synovial Sheaths

Vincula (Mesotendon remnants --> blood supply of tendons)

Extensor Tendons

Synovial Sheaths

Extensor (Dorsal Digital) Expansions of fingers

3. Muscles of Hand (intrinsic muscles of palm)

Superficial Fascia --> Palmaris Brevis

1st Layer Abductor Pollicis Brevis & Flexor Pollicis Brevis

Flexor Digiti Minimi (Brevis) & Abductor Digiti Minimi

2nd Layer 4 Lumbricals (from long tendons)

3rd Layer Opponens Pollicis

Adductor Pollicis

Opponens Digiti Minimi

4th Layer 3 Palmar Interossei & 4 Dorsal Interossei

4. Supply of the forearm and hand

Radial Artery

Branches

Ulnar Artery

Branches -> Anterior Interosseus Artery

Median Nerve

-> Anterior Interosseus Nerve

Ulnar Nerve

-> Dorsal (Cutaneous) Branch

Carpal Tunnel

Boundaries:

Roof ie. *Flexor Retinaculum* (with *Ulnar Nerve & Artery* over it)

Floor (Carpal Bones)

Proximal, Distal, Lateral & Medial Borders

Contents:

Median Nerve

Long Flexor Tendons

Synovial Sheaths

Palm of Hand

Superficial & Deep Palmar Arches (from Ulnar & Radial arteries)

Branches

Recurrent Thenar (Motor) Branch of Median Nerve

Lateral & Medial Terminal Branches of Median Nerve

Superficial (Terminal) Branch of Ulnar Nerve

Common Palmar Digital Branches of Median & Ulnar Nerves

Deep (Terminal) Branch of Ulnar Nerve

Palmar Aspect of Digits

Palmar Digital Nerves (from Median & Ulnar Nerves)

Palmar Digital Arteries