

Clinicoanatomical Problems – Chapter: Forearm and Hand

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1. A typist complains of pain, tingling, and numbness in thumb, index, and middle fingers, worsening at night.

Diagnosis: Carpal Tunnel Syndrome

Anatomical Basis: Compression of **median nerve** beneath the **flexor retinaculum**.

Key Features:

- Numbness in lateral 3½ fingers.
- Wasting of thenar muscles.
- Loss of thumb opposition.

Tests: *Phalen's* and *Tinel's signs*.

Treatment: Surgical decompression of flexor retinaculum.

2. A carpenter has weakness in gripping and adduction of fingers with sensory loss in medial 1½ digits.

Diagnosis: Ulnar Nerve Palsy (at wrist or Guyon's canal).

Anatomical Basis: Compression of **ulnar nerve** superficial to flexor retinaculum.

Findings:

- Clawing of ring and little fingers.
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- Flattened hypothenar eminence.
 - Froment's sign positive (flexion of thumb IP joint due to adductor pollicis paralysis).
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3. A tennis player develops severe pain over lateral epicondyle on gripping a racket.

Diagnosis: *Tennis Elbow* (Lateral Epicondylitis).

Anatomical Basis: Inflammation of **common extensor origin** (especially *ECRB*).

Findings: Pain on resisted wrist extension and supination.

Treatment: Rest, physiotherapy, corticosteroid injection if severe.

4. A golfer presents with pain and tenderness over medial epicondyle aggravated by wrist flexion.

Diagnosis: *Golfer's Elbow* (Medial Epicondylitis).

Anatomical Basis: Inflammation of **common flexor origin** (mainly *pronator teres* and *FCR*).

Findings: Pain on resisted flexion and pronation.

5. A patient after radial head fracture cannot extend fingers but can extend wrist slightly.

Diagnosis: *Posterior Interosseous Nerve Palsy*.

Anatomical Basis: Compression in the **supinator (arcade of Frohse)**.

Findings:

- Loss of finger extension.
 - Wrist extension preserved (ECRL intact).
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- No sensory loss (purely motor nerve).
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6. A factory worker develops pain on lateral wrist and thumb base; Finkelstein's test positive.

Diagnosis: *De Quervain's Tenosynovitis.*

Anatomical Basis: Inflammation of synovial sheath of **abductor pollicis longus** and **extensor pollicis brevis** (1st dorsal compartment).

Test: Pain on thumb flexion and ulnar deviation of wrist.

7. A tailor has a swollen, painful thumb; infection spreads to forearm causing "hourglass swelling."

Diagnosis: *Acute Tenosynovitis with Spread to Parona's Space.*

Anatomical Basis: Infection of **radial bursa** (FPL sheath) communicating with **space of Parona** in forearm.

Significance: Requires prompt drainage to prevent necrosis.

8. A patient develops infection in little finger followed by swelling of palm and lower forearm.

Diagnosis: *Mid-Palmar Space Abscess with Extension to Parona's Space.*

Anatomical Basis: Infection spreads via **ulnar bursa** from tendons of *FDS & FDP* ? **mid-palmar space** ? forearm.

Symptoms: Pain on finger flexion, swelling of palm, and restricted hand movement.

9. A cricketer presents with wrist pain and limited thumb movement after a fall on outstretched hand.

Diagnosis: *Scaphoid Fracture.*

Anatomical Basis: Fall leads to fracture across **waist of scaphoid** ? **radial artery injury** ? *avascular necrosis* of proximal fragment.

Clinical Sign: Tenderness in **anatomical snuffbox**.

10. A typist's finger tip is swollen, red, and extremely painful; throbbing increases on flexion.

Diagnosis: *Whitlow (Felon).*

Anatomical Basis: Pus collection in **pulp space** of finger, bounded by fibrous septa ? increased tension and severe pain.

Complication: Osteomyelitis of distal phalanx if untreated.

11. A patient presents with palmar skin thickening and flexion deformity of ring and little fingers.

Diagnosis: *Dupuytren's Contracture.*

Anatomical Basis: Progressive fibrosis and shortening of **palmar aponeurosis**.

Risk Groups: Manual laborers, diabetics, chronic alcoholics.

12. A typist cannot extend the distal phalanx of middle finger after minor trauma.

Diagnosis: *Mallet Finger (Baseball Finger).*

Anatomical Basis: Avulsion or rupture of **extensor tendon** at DIP joint ? finger tip droops.

13. A patient with supracondylar fracture of humerus cannot flex thumb and index finger DIP joints.

Diagnosis: *Anterior Interosseous Nerve Lesion.*

Anatomical Basis: Damage to branch of median nerve ? paralysis of *FPL* and lateral half of *FDP*.

Sign: "OK" sign defect (Pinch sign).

14. A housewife complains of tingling in ring and little fingers, aggravated by elbow flexion.

Diagnosis: *Cubital Tunnel Syndrome.*

Anatomical Basis: Compression of **ulnar nerve** between heads of *flexor carpi ulnaris*.

Findings: Numbness in medial 1½ fingers; weakness of intrinsic hand muscles.

15. A trauma patient has complete wrist drop with inability to extend elbow.

Diagnosis: *High Radial Nerve Injury (Spiral Groove or Axilla).*

Anatomical Basis: Lesion proximal to origin of triceps branches ? paralysis of triceps, wrist and finger extensors.

Clinical Sign: Wrist flexed, MCP joints flexed, sensory loss on dorsum of hand.

? Summary Insight

The **forearm and hand** are among the most common regions for **nerve compression syndromes, tendon injuries, and infective spread** due to close fascial compartments and extensive synovial continuity.

Early anatomical localization ensures complete functional recovery.