MEDICAL EDUCATION RESOURCE

Clinicoanatomical Problem

? Clinicoanatomical Problems – Joints of Upper Limb

> **1. A young man sustains a fall on his outstretched hand. The wrist shows dorsal displacement of the distal radius with a “dinner-fork” deformity.**

Diagnosis: *Colles’ fracture*
Anatomical Basis:

- Fracture of distal radius ~2.5 cm above wrist joint.
- Fragment displaced **dorsally and radially**.
- Involves **radiocarpal joint** stability.
  Clinical Features:
- Dorsal tilt of distal radius.
- Prominent styloid process of ulna.
- Pain and restricted wrist motion.
  Complications:
- Median nerve compression.
- Stiff wrist or Sudeck’s osteodystrophy.

> **2. A 60-year-old woman complains of shoulder stiffness and severe pain, unable to lift her arm overhead.**

Diagnosis: *Adhesive capsulitis (Frozen Shoulder)*
Anatomical Basis:

- Fibrosis and inflammation of **shoulder capsule** and surrounding bursae.
- Restricted movement in all directions.
  Predisposing Factors: Diabetes, post-injury, prolonged immobilization.
  Treatment: Physiotherapy, steroid injection, capsular release.

> **3. A cricketer experiences pain on attempting abduction of the shoulder between 60°–120°.**

Diagnosis: *Painful Arc Syndrome (Supraspinatus Tendinitis)*
Anatomical Basis:

- Inflammation or tear of **supraspinatus tendon** under coracoacromial arch.
- Compression during mid-abduction.
  Tests: Positive “Empty Can” (Jobe’s) test.

> **4. A driver falls with shoulder abducted and externally rotated. The shoulder appears flattened with a palpable bulge below clavicle.**

Diagnosis: *Anterior Dislocation of Shoulder*
Anatomical Basis:

- Weak **inferior capsule** ? head of humerus displaced anteroinferiorly.

- May injure **axillary nerve**.
  Clinical Features:

- Flattened contour, loss of deltoid tone.

- Loss of sensation over “regimental badge area.”

> **5. A tailor complains of pain on the lateral aspect of elbow aggravated by wrist extension.**

Diagnosis: *Tennis Elbow (Lateral Epicondylitis)*
Anatomical Basis:

- Overuse of **common extensor origin** (ECRB).

- Microtears and inflammation at lateral epicondyle.
  Test: Pain on resisted wrist extension.

> **6. A golfer presents with tenderness over the medial epicondyle worsened by wrist flexion.**

Diagnosis: *Golfer’s Elbow (Medial Epicondylitis)*
Anatomical Basis:

- Strain of **common flexor origin** at medial epicondyle.

- Involves **pronator teres and FCR.**

---

7. A child suddenly lifted by the hand cries and refuses to move the elbow; forearm held pronated.

Diagnosis: *Pulled Elbow (Nursemaid's Elbow)*
Anatomical Basis:

- Subluxation of **head of radius** from **annular ligament** in the superior radioulnar joint.
  Treatment: Supination and flexion of elbow to reposition radial head.

---

8. A tennis player reports pain along radial side of wrist, worsened by thumb movement.

Diagnosis: *De Quervain's Tenosynovitis*
Anatomical Basis:

- Inflammation of synovial sheath of **abductor pollicis longus** and **extensor pollicis brevis** (first dorsal compartment).
  Test: Finkelstein's test positive.

---

9. A carpenter presents with pain and clicking at the base of thumb during gripping.

Diagnosis: *Osteoarthritis of 1st Carpometacarpal Joint*
Anatomical Basis:

- Degeneration of **saddle joint between trapezium and 1st metacarpal**.
- Loss of smooth gliding motion ? pain during opposition.

---

10. A skier falls with thumb forcefully abducted, leading to pain and swelling at its base.

Diagnosis: *Gamekeeper's (Skier's) Thumb*
Anatomical Basis:

- Rupture of **ulnar collateral ligament** of the 1st MCP joint.
- Causes instability and weak pinch grip.

---

11. A student develops swelling over the posterior elbow after prolonged leaning.

Diagnosis: *Olecranon Bursitis (Student's Elbow)*
Anatomical Basis:

- Inflammation of **subcutaneous olecranon bursa** due to frictional trauma.

---

12. A typist develops tingling in thumb, index, and middle fingers, worse at night.

Diagnosis: *Carpal Tunnel Syndrome*
Anatomical Basis:

- Compression of **median nerve** beneath **flexor retinaculum**.
- Affects thenar muscles and lateral 3½ fingers.
  Tests: Phalen's and Tinel's signs.

---

13. A 12-year-old boy with an elbow fracture develops claw-like contracture of fingers.

Diagnosis: *Volkmann's Ischemic Contracture*
Anatomical Basis:

- **Brachial artery injury** in supracondylar fracture ? ischemic necrosis of flexors ? fibrosis and flexion deformity.

---

14. A typist has dorsal wrist swelling with jelly-like consistency.

Diagnosis: *Ganglion Cyst*
Anatomical Basis:

- Herniation of **synovial membrane** of wrist joint or tendon sheath.
- Commonly on **dorsum of wrist** near scapholunate ligament.

---

15. A laborer complains of forearm rotation pain after fracture of ulna.

Diagnosis: *Monteggia Fracture-Dislocation*
Anatomical Basis:

- Fracture of **upper third of ulna** with dislocation of **radial head** at proximal radioulnar joint.

---

16. A person sustains a distal radius fracture with dislocation of distal radioulnar joint.

Diagnosis: *Galeazzi Fracture-Dislocation*
Anatomical Basis:

- Fracture of **radius** in distal third ? disruption of distal radioulnar joint.

---

17. A patient with chronic rheumatoid arthritis develops ulnar deviation of fingers.

Diagnosis: *Rheumatoid Deformity at MCP Joints*
Anatomical Basis:

- Destruction of joint capsule and ligaments ? displacement of extensor tendons to ulnar side.

---

18. A mechanic presents with finger locking during flexion that suddenly “snaps” on extension.

Diagnosis: *Trigger Finger*
Anatomical Basis:

- Thickening of **fibrous flexor sheath (A1 pulley)** at MCP level ? tendon entrapment.

---

19. A boxer develops swelling at 2nd and 3rd MCP joints with pain on movement.

Diagnosis: *Boxer’s Knuckle*
Anatomical Basis:

- Inflammation of **extensor tendon sheath** and **dorsal capsule** of MCP joints due to repetitive trauma.

> **20. A laborer notices flexion deformity of ring and little fingers with thickened palmar skin.**

Diagnosis: *Dupuytren's Contracture*
Anatomical Basis:

- Progressive fibrosis of **palmar aponeurosis** ? flexion of MCP and PIP joints.

? **Summary Insight**

> The joints of the upper limb are commonly affected by **trauma, overuse, and inflammatory conditions**.
> Clinical correlation requires identifying the **joint type, stability factors, and nearby neurovascular structures** for accurate diagnosis.