**CARPO-METACARPAL [CMC] ARTHRITIS**

CMC joint is a saddle-shaped joint; commonly involved in primary osteoarthritis of the hand.

Volar or beak ligament is an important stabilising ligament from trapezium to the base of the first metatarsal bone

**Clinical**

Female : male = 10:1

Pain: aggravated by forceful pinch grip, such as turning door key; dropping things

Decreased grip strength

**Signs**

Heberden’s node is common [osteophytes at DIP joint]

Attitude: carpometacarpal joint is adducted and flexed.

Shoulder sign: radial prominence at base of thumb from dorsal subluxation [Step sign]

Range of movement of the thumb; MP joint and IP joint

**Provocative tests:**

Crank test: axial loading and passive flexion and extension of 1st metacarpal

Grind test: axial loading and rotation of 1st metacarpal on trapezium

**Differential diagnoses**

- Decurvain’s tenosynovitis
- Scaphoid non-union
- Cervical spondylosis
- Ganglion communicating with CMC joint
X ray

AP, oblique and lateral views
Robert’s pronated view [fully pronate forearm and internally rotate shoulder]
Shows arthritis of MCP
Subluxation of the metacarpal

Eaton & Glickel Classification

Stage   I  Widening of joint space
        II  Sclerosis; joint space narrowing, osteophytes
        III Marked sclerosis, extensive joint space narrowing
        IV  Scaphotrapezial osteoarthritis in addition to above findings.

Surgery

Non-operative

NSAID, Splint, Rest. Local steroid are quite effective. When refractory to 6 months of non-operative treatment, surgery may be required.

Operative

1. Osteotomy

Abduction-extension osteotomy of the base of the first metacarpal to off-load the palmar surface of CMC the joint.
May be useful for high demand young adults with early disease.

2. CMC Arthrodesis

For young high demand patients’
20% failure rate
3. **Excision Arthroplasty**

   Trapeziectomy alone
   
   Good operation.

4. **Excision arthroplasty and ligament reconstruction and soft tissue interposition**

   Trapeziectomy + Split FCR used as spacer to reconstruct bleak ligament
   
   Trapeziectomy alone, achieved much the same result as trapeziectomy plus reconstruction.

5. **Total joint arthroplasty**

   Constrained ball and socket design
   
   Wear rates of 34% at 5 years.
   
   Less constrained designs in development.

6. **Interpositional arthroplasty**

   Silicone Swanson prosthesis, silicon synovitis
   
   Not done these days

7. **Distraction arthroplasty**

   Recently more popular
   
   Curvilinear incision
   
   Go towards ulnar border of the metacarpal
Identify the branches of Radial nerve
Abductor pollicis longus tendon is identified and retracted ulnarswards
Open the capsule subperiosteally
Excise trapezium in one piece or in piecemeal
Do not damage FCR seen in the floor
Maintain the volar oblique ligaments so that the base of the thumb - metacarpal retains its attachments to the index finger metacarpal
Distract the thumb to the level of II metacarpal and a transverse K wire
Insert Gelfoam into the space left by the trapeziectomy.
Hold the thumb and index metacarpals in a rotated, abducted position while wiring
Removal of wire in 6 weeks