

## WRIST ARTHRITIS

Primary wrist arthritis is rare. Usually secondary arthritis is due to an old scaphoid fracture, carpal instability or intra-articular fracture. It manifests: pain, stiffness and limitation of movement.

### Indications for wrist arthrodesis

1. Rheumatoid arthritis.
2. Posttraumatic osteoarthritis, SLAC and SNAC.
3. A previous unsuccessful more limited arthrodesis.
4. Failed total joint replacement.
5. Brachial plexus palsy or spastic hand.

### SLAC [Scapho-lunate advanced collapse]

Stage I Osteoarthritis between the radial styloid and distal pole of the scaphoid.

Stage II Arthritis of the proximal pole of the scaphoid.

Stage III The capitate migrates proximally. Capito-lunate arthritis

SLAC III



### SNAC [Scaphoid Non-union advance collapse]

Stage I As for SLAC

II Arthritis in capitate and proximal pole of the scaphoid

III Capito-lunate arthritis

SNAC



## Treatment

### 1. Wrist arthrodesis

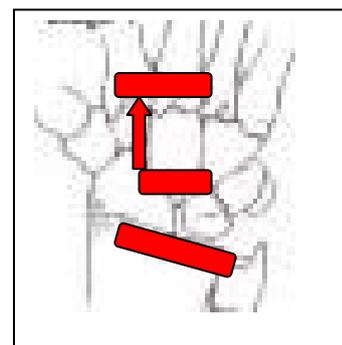
**Position of fusion:** 10° Dorsiflexion; long axis of III metacarpal in line with the radius.

**Important joints included in the arthritis are:**

Carpometacarpal joint of II and III metatarsal,

Capito-lunate ligament,

Scapho-luno-radial joint



## Technique

Tourniquet

Midline incision: from III metacarpal: centered on Lister's tubercle

The approach to the wrist for arthrodesis is dorsally between the third and fourth dorsal compartments.

Identify and protect superficial radial nerve and dorsal carpal ulnar nerve.

Extensor retinaculum are opened sharply close to the bone

The EPL is elevated radially over Lister tubercle, and the tubercle is removed.

Capsule of the joint is opened and lifted as a flap

Elevations or osteophytes are removed.

Cartilage removed: nibbler for small and curettage of important joints

Plate: first fix to the III metacarpal: 2 mm; 2.5mm screw for the metacarpal and 3.5mm for the radius.

Make sure there is no distraction at capitolunate or radiocapitate joints

Cancellous bone graft can be obtained from the distal radius, just radial to Lister's tubercle.

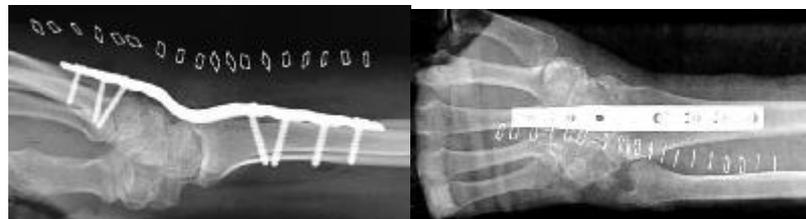
The dorsal capsule and extensor retinaculum are closed, and then the overlying skin is closed

### 3 types of plates:

short carpal bend,

long carpal bend,

straight plate.



## Complications

1. Nonunion
2. Plate tenderness
3. Extensor/flexor tendon adhesions requiring tenolysis
4. Carpal tunnel syndrome
5. Iliac crest donor complications
6. Distal radio-ulnar joint pain or dysfunction
7. Reflex sympathetic dystrophy
8. Wound-healing problems
9. Persistent unexplained pain

## 2.PRC [Proximal row carpectomy]

Pre requisite: preservation of capito-lunate joint

Dorsal longitudinal incision between the III and IV compartment and elevate flaps as for arthrodesis.

Lunate is excised first, then scaphoid and triquetrum by sharp dissection [joystick technique].

Try to preserve radio-carpal ligaments

Routine styloidectomy is not needed

Dorsal capsule is repaired

K wires not recommended

Cast below elbow for 3 weeks

X ray: to make sure that the capitate is located in the lunate facet

## 3.Corner arthrodesis

Indicated in the presence of capito-lunate joint arthritis.

Incision like PRC

Scaphoid is excised first

The opposing surfaces of capitate, hamate, lunate and triquetrum decorticated

Volar capsule attachment of these carpal bones retained

Lunate is reduced on to capitate and stabilized with staples, K wire or screws Or fixed with a special plate. Screws are preferred.

Iliac bone graft



## 4.STT fusion

### Current indications for STT

STT arthrosis

Kienbock's disease,

Carpal instability

**Contraindication:** radio-carpal arthritis

### Technique

Make a dorsal vertical incision

Open the III compartment .

Make a vertical dorsal capsular incision.



Expose the capsule between ECRB and ECRL

Expose the radial styloid and scaphoid junction.

Remove the distal 5 mm of the styloid with a rongeur. It is critical in an STT fusion to have normal articular cartilage between the distal radius and the proximal scaphoid. If abnormal, wrist arthrodesis is indicated.

Drive one or two K-wires from the trapezium and trapezoid into the scaphoid, avoiding impingement of the radio-scaphoid joint. [when possible use Acutrak screws for fixation]

Densely pack cancellous bone into the spaces between the trapezium, the trapezoid, and the scaphoid.

Outcome of STT fusion:

70% of the dorsiflexion–palmar flexion motion was preserved.

30% had major surgical complications.: development of postoperative arthrosis, damage to superficial radial nerve, non-union, 15% were dissatisfied

STT fusion is still controversial.

### **5. Neurectomy**

Limited neurectomy (Berger technique)

70% of patients have 70% pain relief 7 years after surgery

### **6. Arthroplasty**

Indicated for low demand patients (rheumatoid arthritis) with good bone stock.

Loosening is seen in 15% over 10 years

Small dislocation rate