

## **Elbow Stiffness**

**Morrey**: Extrinsic and Intrinsic causes for stiffness

### **Key**:

- I Soft tissue contracture
- II Soft tissue contracture with Heterotopic Ossificans
- III Undisplaced Articular # with Soft tissue contracture
- IV Displace Intra-articular fracture
- V Post-traumatic bony bar

Traumatic: Extrinsic [extra-articular], intrinsic and mixed

### **Pathogenesis for contracture**

Skin

Fat and Fascia

Injury to the Brachialis, biceps and triceps

Osteophytes, incongruity, loss of cartilage, intra-articular adhesions

Filling of the fossa with heterotopic ossificans

### **Diagnosis**

Age; handedness and occupation; career

History of Trauma

Details of previous surgery and cast treatment

Range of movement

Is stiffness associated with pain

Disability

Ulnar nerve examination

X ray: AP, Lateral

Stress views for instability

CT : loose bodies

### **Treatment**

1. Prevention: early active motion
2. Non-steroidal Anti inflammatory
3. Heat and cold

4. Ultrasound
5. Dynamic hinged elbow splints with spring or Static progressive turnbuckle
6. Close MUA may worsen elbow
7. Surgery

Indicated: Limitation of ROM less than functional range

Quite rewarding and 90% satisfaction recently with Outerbridge-Kashiwagi

## Options

### 1. When there congruency of the joint.

The **Outerbridge procedure**, as popularized by Kashiwagi  
 A posterior midline incision; Triceps is split in the centre; The posterior capsule is opened and the tip of the olecranon excised. The olecranon fossa is fenestrated with a dental burr creating a hole. Through this hole, anterior loose bodies removed and debridement of radial head and coronoid are carried out

**Morrey's modification:** Elevation of triceps instead of split of triceps  
 Use of trephine than burr to prevent bone dust  
 Improvement is about 20°  
 85% patient satisfaction

### 2. When there is incongruency

The **Interposition arthroplasty** and distraction arthroplasty

Through an extensile posterior approach, released the tight structures and the head of the radius is excised as well as all osteophytes. Ligaments were preserved and the articular adhesions were excised. The fascia lata is covered over the distal end of the humerus. The distraction Dynamic External fixator

### 3. Old people with incongruent joint: **Total elbow replacement**

Chances of loosening of prosthesis and failure is high in young active patient.  
 Conrad Morrey prosthesis: 64% satisfactory rate at 6 yrs with arc improved 94 °  
 Complications: 20% loosening and 7.5% periprosthetic fracture and 5% infection

4. When after release, stability is problem: **Hinged brace** is when stability is the problem

5. **Arthrodesis** of elbow is not a good procedure for elbow and is rarely done.

## **Surgical approaches**

1. Lateral Kocher Approach : Radio-capitallar joint, Anterior and posterior aspect of the joint
2. Medial approach for ulnar nerve
3. Both medial and lateral than posterior incision
4. Direct posterior triceps muscle splitting approach [Morrey]

Triceps sparing approach of Morrey = Provides extensive posterior approach

Triceps mobilised from the medial side

Excellent visualization