Open Reduction of Chronic Elbow Dislocations

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Chronic Elbow Dislocations

- Very difficult to treat when late
- Post-operative immobilization should be minimized or eliminated completely to increase the ROM at the end of healing, internal fixation should be avoided
- The elbow should be stable on the table to allow early motion
- The triceps should NOT be cut to allow early ROM
- Ideally the operation should be straightforward
**Historical perspective**

- Speed’s procedure of cutting the triceps in a V-y to open the elbow has been the preferred method of opening and reducing chronic elbow dislocations.
- It however does NOT allow the elbow to be moved immediately postoperatively and also internal fixation has been used to keep the elbow reduced, you actually make the elbow more unstable if you lengthen the triceps or cut it.
- Other surgeries have been proposed to reduce the elbow.
Treatment of old unreduced dislocation of the elbow

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Summary
Twenty-six patients with old unreduced dislocation of the elbow treated by open reduction were reviewed. All patients improved after surgery. It is felt that any patient with an elbow dislocation which is less than 3 months old should be treated by open reduction. The operative technique using a medial and lateral approach and keeping the dissection extraperiosteal is described.

All patients had been treated initially by medically unqualified bone-setters. The time interval between the injury and the operation is shown in Table II. This varied from 2 weeks to 8 months, the average being about 7 weeks.

OPERATIVE TECHNIQUES
The patients in this series were operated on by different surgeons using the same basic technique.
For years we have used a posterior approach to reduce chronic dislocations.

Between 2009-2010 we used a triceps reflecting off the olecranon (Mayo approach).

2011-2012 we have used a medial and lateral approach with NO reflection or cutting of the triceps.

This is our preferred approach and is the one we are advocating and presenting today.

Concurrently Dr. Christopher of Canada and Burundi has been using the same approach to this problem, he presented a poster at the SIGN conference in Washington 2012.
Treatment of Neglected Elbow Dislocation

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1. Introduction
Neglected elbow dislocation is common in poor but rare in developed countries. Dislocations older than two weeks require open reduction. Although they present late, patients request surgical treatment because they cannot flex elbow to 90 degrees which is inconvenient for activities of daily living (ADL’S). Existing literature describes either section and lengthening of the triceps tendon with pins across the joint (Speed’s technique) or else preservation of triceps and hinged external fixation.

2. The Problem
Section of triceps and trans-articular pins may cause adherences with permanent loss of motion and strength. Hinged external fixators are usually unavailable in poor countries and are poorly tolerated. Physiotherapy is often not available.

3. Objective
To describe a surgical technique that does not require division of the triceps, trans-articular pins or external fixation and which allows early active motion.
Chronic Elbow Dislocations

• Electronic records, anesthesia records, handwritten logs were used to find all chronic elbow dislocations treated at SCH and Black Lion

• Fx/dislocations were excluded, unless the fractures were not operatively treated

• Pt’s returned for f/u with exam, Mayo elbow score and x-ray, and Summary Outcome Determination

• Pts were excluded that did not have deep medial and lateral approach to the elbow
Chronic Dislocations

- **Video showing the operation**
- Pt cases
- Results
- Mayo elbow score: Pain, ROM, Stability and Function, Maximal score is 100
- Summary Outcome Determination is a subjective post operative score: 10 = normal elbow, 0 = surgery not of benefit, – 9 wish I were dead, surgery made me worse!
Chronic Dislocations

- FK 40 yr old male with one month old dislocation
Chronic Dislocations

• FK 40 yr old male with one month old dislocation

• 15 month f/u, Mayo score 100, ROM 25-135
Chronic Dislocations

- KS out for two months
Chronic Dislocations

No IF, splint or cast after surgery, only sling
Chronic Dislocations

- KS out for two months
- ROM 2 days post op
Chronic Dislocations

- KS out for two months
- 2 months F /U ROM 30-120
Chronic Dislocations

- AG 20 yr old male, dislocated 13 months, ROM 25 degrees
Chronic Dislocations

- AG 20 yr old male, dislocated 13 months, ROM 25 degrees
- 8 month f/u, Mayo score 95, ROM 35-150 Full Supination and Pronation
Chronic Dislocations

- AG 20 yr old male, dislocated 13 months, ROM 25 degrees
- 8 month f/u, Mayo score 95, ROM 35-150, Full Supination and Pronation
Chronic Dislocations

• MH 21 yrs old right handed male, dislocated 2 yrs and 10 months, pre op ROM 15 degrees
• 4 month F/U, mayo score 86, ROM 20-100 and full pronation and supination
• Pre op x ray
Chronic Dislocations

- MH 21 yr old right handed male, dislocated 2 yrs and 10 months, pre op ROM 15 degrees
- 4 month F/U, mayo score 86, ROM 20-100 and full pronation and supination
Chronic Dislocations

- MH 21 yrs old right handed male, dislocated 2 yrs and 10 months, pre op ROM 15 degrees
- 4 month F/U, mayo score 86, ROM 20-100 and full pronation and supination
Chronic Dislocations

DG 9/M, 5mo out, 15° ROM
Chronic Dislocations

DG 6 ½ mo f/u, 10-135 ROM, 100 Mayo score
Chronic Dislocations

MM 7/F, 14mo out, 50° ROM
Chronic Dislocations

- MM 2wks f/u, no pain, 55-110°
Chronic Dislocations

• AH, 25/F, 2 mo out, no ROM, ulnar nerve not transposed
Chronic Dislocations

AH 4mo f/u, 55-135° ROM, Full forearm rotation, Mayo Elbow score-80. Ulnar nerve palsy
## Chronic Dislocations

<table>
<thead>
<tr>
<th>ID</th>
<th>AGE/SEX</th>
<th>#OF MO.OUT</th>
<th>PRE OP ROM</th>
<th>POST OP ROM</th>
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</table>

All results are good or excellent
Chronic Dislocations

- The triceps is shortened because of lack of flexion and proximal displacement, use this tightness to increase stability after surgery
- The ulnar nerve is also similarly shortened, protect it by anterior transposition
- The ligaments have been disrupted that give stability
- There is excessive scar and capsular thickening
- Don’t excise the scar, use it to improve stability
- Remove obstructions to allow full and complete reduction, recreate the normal bony architecture
- Create a soft tissue envelope that when it is closed creates its own stability, this is the key point of the operation, only for bony defects such as radial head loss or coronoid loss should there be any need for plaster after surgery
- Prospective study proposed