

Case conference



R2吳俊良
VS詹益聖

Basic Information

- Name:陳XX
- Age: 66 y/o
- Gender: male
- ID:2133658
- Admission Date: 2010/11/16

Chief complaint

- Right shoulder pain 4 weeks prior to admission

Present Illness

- Suffered from T.A 6 months ago
- Right shoulder pain and AC dislocation was diagnosed, and received CC fixation with screw
- Falling right arm and pain 3 months ago and received ORIF with hook plate
- However, right shoulder pain and limited ROM since 4 weeks ago
- No trauma history recently

Past history

- No DM
- HTN with medication control
- Gastric cancer s/p tumor excision

Personal history

- No Smoking
- No Drinking

Physical Examination

RT shoulder

- Mild ROM limited due to pain
- Right AC joint pain and tenderness
- No erythem, no swelling and no heat

Lab

- CBC/DC
- BCS
- U/A

-- All within normal level

Image 0727



Rockwood: type V

Operation Note 8/6

• **Pre-Op:**

RT AC chronic dislocation with CC screw and washer fixation, failed

• **Post-Op:**

RT AC chronic dislocation with CC screw and washer fixation, failed

• **OP method:**

1. Remove screw and washer
2. ORIF with hook plate
3. CC ligament repair with auto-semitendinosus tendon graft

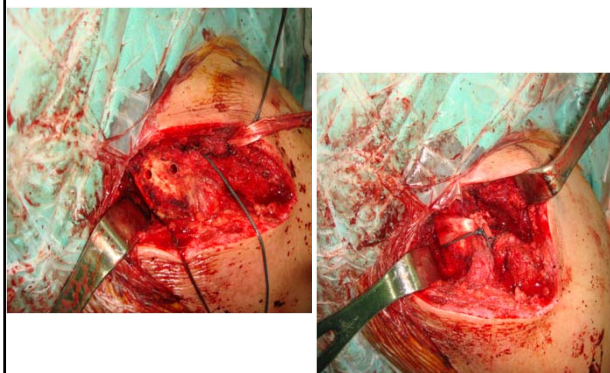
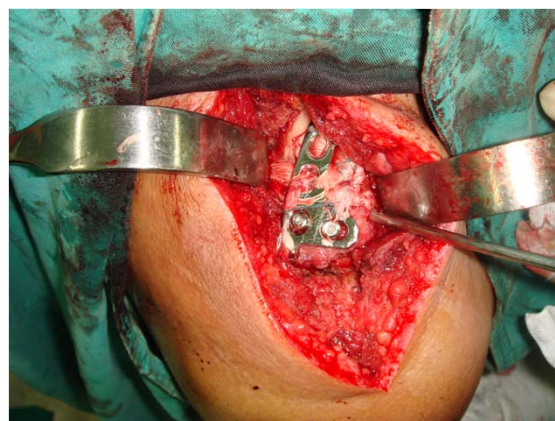


Image 0807

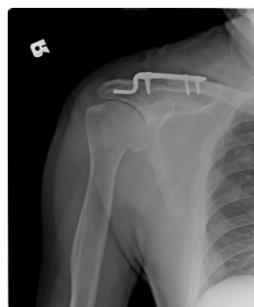


Image 0914

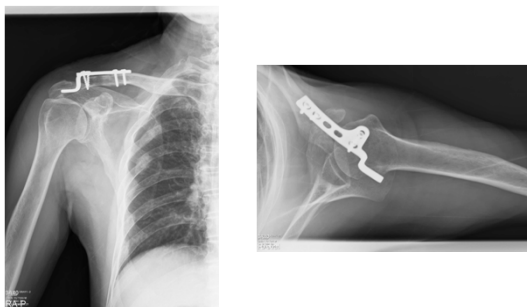


Image 1005

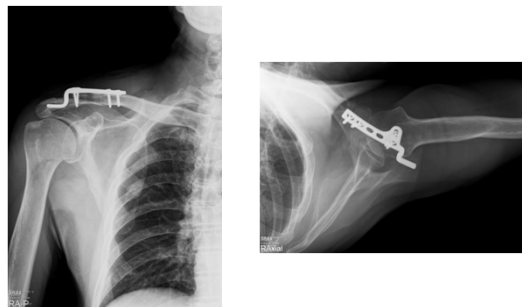
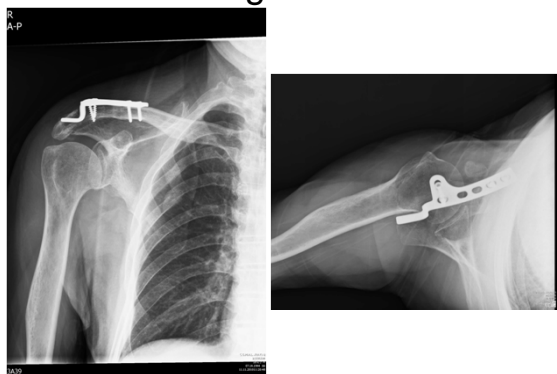


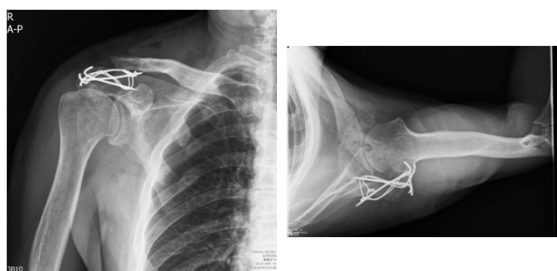
Image 1111



Operation Note 11/17

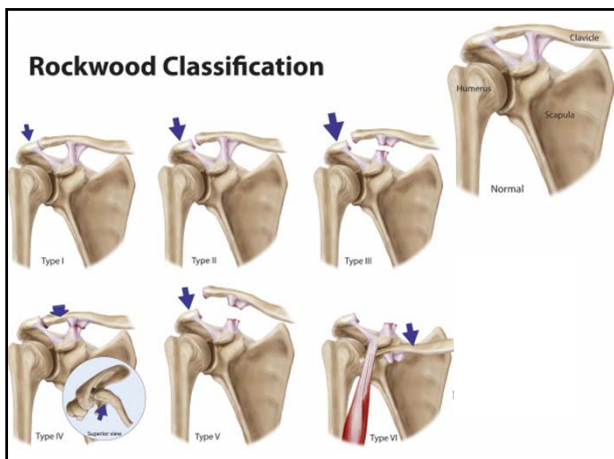
- **Pre-Op:**
 - a.) S/P RT AC chronic dislocation with hook plate fixation
 - b.) RT acromial fracture
- **Post-Op:**
 - a.) S/P RT AC chronic dislocation with hook plate fixation
 - b.) RT acromial fracture
- **OP method:**
 1. ORIF with tension band wire fixation x II loop
 2. Remove hook plate

Image 1118



Diagnosis

- Right acromial fracture
- Right AC chronic dislocation s/p hook plate fixation



Treatment of AC dislocation

- acromioclavicular reduction and fixation
- acromioclavicular reduction, coracoclavicular ligament repair, and coracoclavicular fixation
- a combination of the first two categories
- distal clavicle excision
- muscle transfers.

Campell, 11th edition

- Acute AC dislocation: reduction and fixation and repair ligament - *Phemister, modified*
- Chronic AC dislocation: **tendon graft reconstruction**
 - *Weaver-Dunn, modified*
 - *Biceps transfer*
 - *Copland and Kessel*

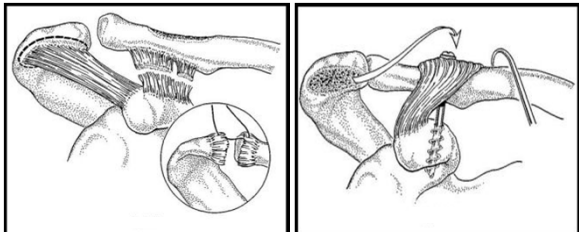
Modified Phemister

Bosworth

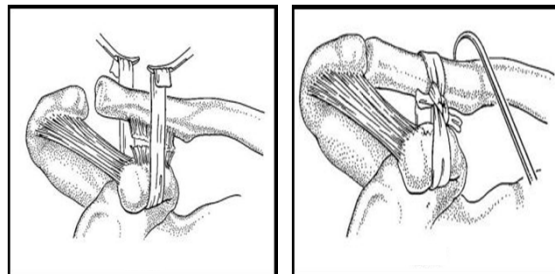
Biceps transfer

FIG. 1
The normal anatomy, anatomical landmarks, pathology and technique of transfer of the tip of the coracoid process to the under-surface of the clavicle.

Copland and Kessel

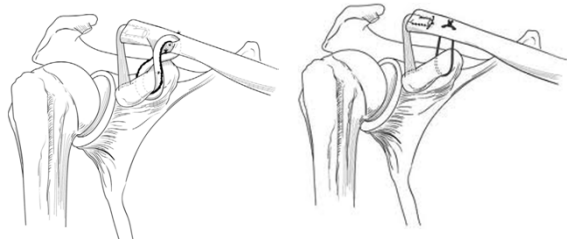


Dacron graft method

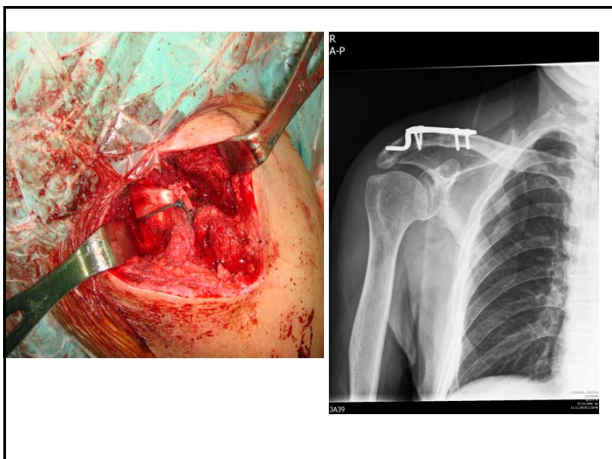
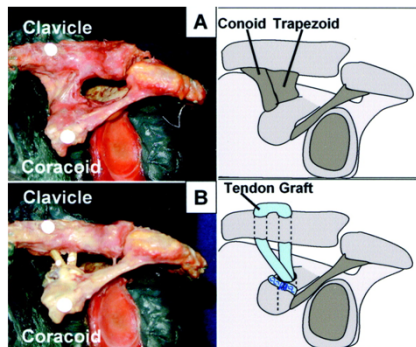


Modified Weaver-Dunn method

Double bundle



Tendon graft Technique



Hook Plate indications

Indications:

- Lateral clavicular fractures
- Acromioclavicular dislocation (Tossy III) / Rockwood type III~VI
- Very active patients
- Failure of other methods



Tossy Classification

- **Type I:**
a partial lesion of the AC ligaments with the CC ligaments intact.
- **Type II:**
a rupture of the AC ligament and partial lesions of CC ligament
- **Type III:**
complete rupture of the AC and CC ligaments

Advantage

- easy implant insertion
- accurate maintenance of reduction
- low risk of metalwork migration
- non-rigid fixation, low nonunion rate

Disadvantage

- money cost
- impingement symptoms
- secondary operation for removal

- When humerus forward flexion and abduction
 - rotation between clavicle and scapula
 - cause migration of K wire
 - loosening of coracoclavicular screw
- Hook plate allows acromio-clavicular joint motion
 - allow early ROM of shoulder

Prasad V.K. Meda, etc. Injury 2006 37; 277-83

Excessive rotation of acromio-clavicular joint with hook plate

- medial end of hook plate as a stress riser
- clavicle may fracture in minor trauma
- stress shielding and osteolysis around AC joint
- erosion of acromion by hook



R. Nadarajah, etc. Injury 2005;36:681-83
RM Charity, etc. J ortho surg 2006;14(3):333-5

J Shoulder Elbow Surg (2010) 19, e13-e15



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Acromion osteolysis and fracture after hook plate fixation for acromioclavicular joint dislocation: A case report

Chia-Ling Chiang, MD^a, Shan-Wei Yang, MD^b, Meng-Yuan Tsai, MD^a,
Clement Kuen-Huang Chen, MD^{a,c,d,*}

^aDepartment of Radiology
^bOrthopaedics, Kaohsiung Veterans General Hospital, Kaohsiung, Taiwan
^cNational Yang-Ming University School of Medicine, Taipei, Taiwan
^dYuh-Jing Junior College of Health Care and Management, Kaohsiung, Taiwan

- 54 y/o male, acromion fracture 8months after surgery
- long-term retention of the hook plate is not recommended

AC dislocation treatment goal

- AC joint must be exposed and débrided
- CC and AC ligaments must be repaired
- stable reduction of the AC joint must be obtained.

Campell, 11th edition

Thanks!