Sports Meeting

Present by R2 陳柏翰
Supervisor VS 陳昭宇
2010/08/05

Basic Data

- Name：陳 x 和
- Chart number: 21405978
- Admission date：2010/07/29
- Age ：33 years old
- Gender：male
- Marital status: married
- Occupation:服務業

Chief Complaint

- left shoulder pain with weakness noted since traffic accident 5 days ago(7/25)

Present illness

- 7/25 traffic accident
- ER：left shoulder pain and weakness
- x-ray

History

- Past history: none
- Personal history: denied
- Family history: no genetic or systemic

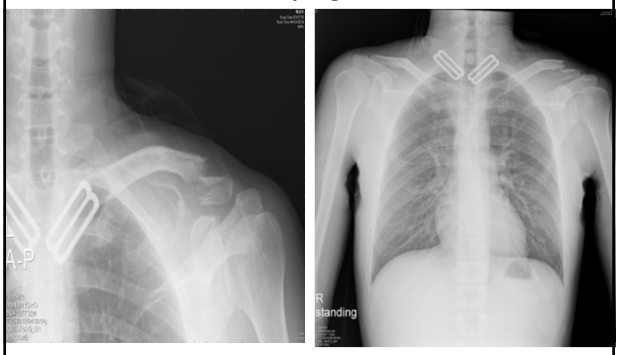
PE

- General appearance: acute ill- looking
- Chest: no dyspnea, breathing sound clear
- Abdomen: no discomfort
- Extremity: left shoulder tenderness, deformity, multiple extremities abrasion wound

Lab

All data normal

7/25



Impression

- 1. left distal end clavicular fracture
- 2. suspect CC ligament injury

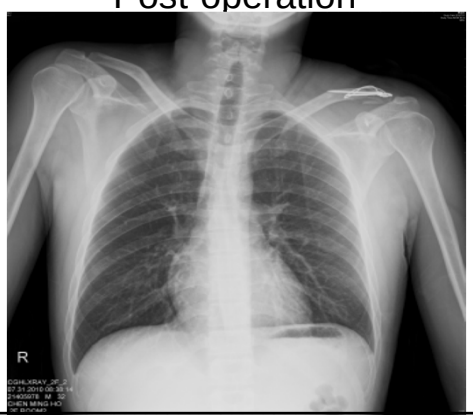
Hospital Course

- 2010/07/29
  Admission
- 2010/07/30

operation:
conoid liagment disruption
→ORIF with tension band wire + k-pin x2
→coracoid-clavicle looping with ethibone

- 2010/08/02 discharge

Post-operation



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JB&JS

Fractures of the Clavicle

L.A. Kashif Khan, Timothy J. Bradnock, Caroline Scott and C. Michael Robinson
J Bone Joint Surg Am. 2009;91:447-460. doi:10.2106/JBJS.H.00034

CURRENT CONCEPTS REVIEW

Fractures of the Clavicle

By L.A. Kashif Khan, BSc(Hons), MRCSEd, Timothy J. Bradnock, BSc(Hons), MRCSEd, Caroline Scott, MBChB, and C. Michael Robinson, BMedSci, FRCSEd(Orth)

Clavicle fracture

Undisplaced fractures ：
- high rate of union
- functional outcomes good after nonoperative treatment

Displaced：
- higher rate of nonunion and functional deficits after nonoperative treatment
- Displaced lateral-end fractures higher risk of nonunion after nonoperative treatment than shaft fractures.

Epidemiology

- Fractures of the shaft 69~82%
- Lateral-end 21~28%
- Medial-end injuries 2% ~ 3%

Classification

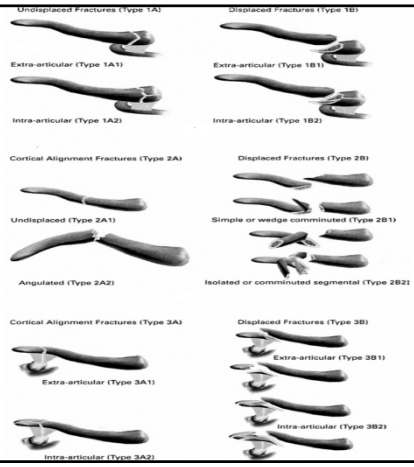
- Allman ：anatomic location of the fracture
- Neer： lateral-end fractures

1. undisplaced (Type I)
2. displaced (Type II)

Type-IIA： ligaments remain intact
Type-IIB：coracoclavicular ligaments are partially or completely detached

3. Type III： fracture of the articular surface of the AC joint without ligament injury

- The Edinburgh classification



Clinical

- often downward displacement of the lateral fragment
- elevation of the medial fragment
- distal fracture ：brachial plexus or vascular injury

Treatment of Shaft Fractures

- undisplaced (Edinburgh Type-2A) fractures should be treated nonoperatively
- displaced：rarely require operative stabilization

1. the rate of nonunion has been <1%
2. Nonunion after ORIF was higher than that after nonoperative treatment
3. high level of patient satisfaction after nonoperative treatment

Nonoperative Treatment

- simple sling
- figure-of-eight bandage

1. Better patient satisfaction with the simple sling
2. functional and cosmetic results of the two treatment methods were identical
3. Neither technique reduces a displaced fracture
4. axillary pressure sores, compression of the neurovascular bundle, and nonunion are higher with the figure-of eight bandage

Operative Treatment

- primary operative treatment demonstrated better functional outcomes, lower rates of malunion and nonunion, and a shorter time to union.

Operative Treatment

- Plate Fixation
- Intramedullary Fixation
- External fixators

open fractures or septic nonunions

- Kirschner wires

wire breakage and migration

Plate Fixation

- Infection
- plate failure
- scars
- implant loosening
- Nonunion
- refracture after plate removal
- intraoperative vascular injury

Intramedullary Fixation

- plate fixation provides a stronger construct than intramedullary fixation
- High rates of implant breakage
- temporary brachial plexus palsy
- skin breakdown

Treatment of Lateral-End Fractures

Undisplaced

- Neer Type I, Edinburgh Type 3A
- Nonoperative management is the treatment of choice

Displaced

- Neer Type II, Edinburgh Type 3B
- high rates of nonunion after nonoperative treatment

Operative Treatment

Indications:

- Early:

1. Compromise of the soft-tissue envelope
2. double disruption of the ipsilateral shoulder suspensory complex
3. requiring a rapid return to full function

- Late:

1. persistent symptomatic malunion or nonunion
2. acromioclavicular osteoarthritis

Operative Treatment

- Coracoclavicular Screw
- Plate and Hook-Plate Fixation
- Kirschner Wire Fixation
- Suture and Sling Techniques

Coracoclavicular Screw

- screw cutout
- Loosening
- limits shoulder movement
- needs to be removed when fracture united

Plate and Hook-Plate Fixation

- distal fragment is large enough to hold a minimum of two, and ideally three, bicortical screws
- shoulder stiffness
- osteoarthritis of the acromioclavicular joint
- skin infection

Kirschner Wire Fixation

- wire breakage
- Migration
- high nonunion
- infection rate

Intra-Articular Lateral-End Fractures

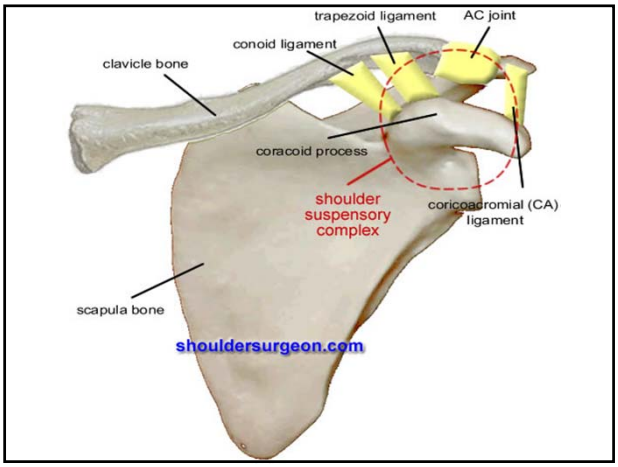
- treated initially in the same manner as extra-articular injuries
- increased risk of later acromioclavicular osteoarthritis

Medial-End Clavicular Fractures

- usually managed nonoperatively
- unless fracture displacement produces superior mediastinal compromise

Complications of Clavicular Fractures

- Nonunion
- Malunion
- Neurological Complications
- Refracture
- Osteoarthritis of the AC Joint
- Complications of Operative Treatment



Thank you !