"I can't move my shoulder!"

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A 43-year-old patient presents to the emergency department (ED) complaining of left shoulder pain. He states that he fell attempting to open a window, after consuming "a lot" of alcohol the night before. The pain in his shoulder is localized to his anterior chest region and has been constant since the fall. He describes the pain as severe when he moves the arm, but denies any arm discomfort, parethesia, or weakness. An X-ray of the shoulder is taken (Figure 1).

Questions:

1. *What is the differential diagnosis of traumatic shoulder pain?*
2. *What is the approach to traumatic shoulder pain in the ED?*
3. *How are clavicular fractures classified?*
4. *Are there any potential complications of clavicular fractures?*
5. *What is the ED management of clavicular fractures?*

Answers:

1. What is the differential diagnosis of traumatic shoulder pain?

The differential diagnoses of a traumatic shoulder injury include:

- shoulder dislocation,
- acromioclavicular joint dislocation,
- sternoclavicular dislocation,
- clavicular fracture,
- rotator cuff tendonitis,
- subacromial bursitis,
- cervical spine injury, or
- other injury resulting in referred pain (*e.g.*, lung, myocardium, diaphragmatic irritation).

Figure 1. X-ray of fractured clavicle.

2. What is the approach to traumatic shoulder pain in the ED?

In the ED, it is important to enquire about the mechanism of injury, as well as a precise description of the pain, including the exact location, intensity, quality, radiation, and any aggravating or relieving factors. As pain may also be referred to the shoulder region, it is wise to enquire about other sources of pain and other symptoms.

Physical exam of the injured shoulder and arm should include a comparison to the contralateral shoulder. The shoulder should be examined from anterior, posterior, and lateral views to look for any asymmetry, atrophy, deformities, ecchymosis, laceration, swelling, or hematoma. Palpation should be performed, noting any crepitus, deformity, swelling, or point tenderness, and range of motion should be checked. A neurovascular exam should also be done for the arm, by checking pulses, strength, and sensation.

3. How are clavicular fractures classified?

Clavicular fractures are generally closed fractures, but open fractures do occur. Extreme fracture displacement can lead to tenting of the skin or an open fracture which may require surgical reduction and internal fixation (Table 1).

Table 1

Classification of clavicular fractures

Location	Frequency	Mechanism
Medial third	5%	Direct blow to the anterior chest
Middle third	80%	Direct force on the lateral aspect of the shoulder (usually due to a fall, sporting injury, or motor vehicle accident)
Lateral third	15%	Direct blow to the top of the shoulder: • *Type I*: Lateral to coracoclavicular ligaments; stable • *Type II*: Medial to coracoclavicular ligaments; tend to displace • *Type III*: Involve the articular surface; commonly missed

Table 2

Complications of clavicular fractures

Closed clavicular fracture	Open clavicular fracture
• Malunion	• Infection
• Brachial plexus injury	• Nonunion
• Vascular injury (arterial or venous)	• Scar or skin deformity
• Pneumothorax	• High incidence of all close clavicular fracture complications
• Hemothorax	

Radiographic imaging has generally been advocated for the diagnosis of clavicular fractures. However, because radiographs rarely influence management decisions of most clavicular injuries, this practice has come under question.

If radiographs are deemed necessary, a simple posterior-anterior chest X-ray is adequate to visualize any fracture and to evaluate any potential complications. Radiographic imaging is necessary if the history and physical exam indicate the possibility of associated injury.

4. *Are there any potential complications of clavicular fractures?*

Complications of closed clavicular fractures are uncommon and are generally related to the degree of displacement. Open fracture complications may be found in up to 20% of patients (Table 2).

5. *What is the ED management of clavicular fractures?*

After the identification of high-risk fractures in need of orthopedic referral (open fractures or those with complications), the most important factors in management are pain control, immobilization, and followup. Supportive measures are generally adequate for closed clavicular fractures and include a sling, a sling with a swath, and a Velpeau bandage. The supportive immobilization should be continued for four to eight weeks (two to four weeks in young children) and vigorous competitive sports should be avoided until the bone healing is solid (four to six months). Orthopedic followup is done on an "as needed" basis. Dx

This department covers selected points to avoid pitfalls and improve patient care by family physicians in the ED. Submissions and feedback can be sent to diagnosis@sta.ca.

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