X-ray quiz: a lady with shoulder injury

X 光照片猜謎：一名肩部受傷的女子

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Case

A 25-year-old female cyclist was knocked down by another bicycle and fell on her right shoulder. She was seen at a local emergency department one hour after the injury. She complained of pain around both the anterior and posterior aspects of her right shoulder. The range of shoulder abduction was limited to 0-50°. There was no brachial plexus or peripheral nerve injuries. Radiograph of the right shoulder was taken (Figure 1).

She was treated conservatively with an arm sling and oral analgesic. On follow up one week after the injury, her right shoulder pain had improved slightly and the passive range of motion was full. Another radiograph of the right shoulder was taken (Figure 2).

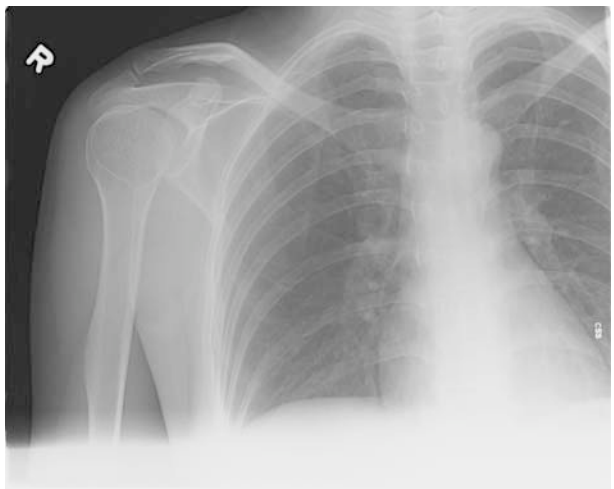

Figure 1. Initial antero-posterior film of the right shoulder.

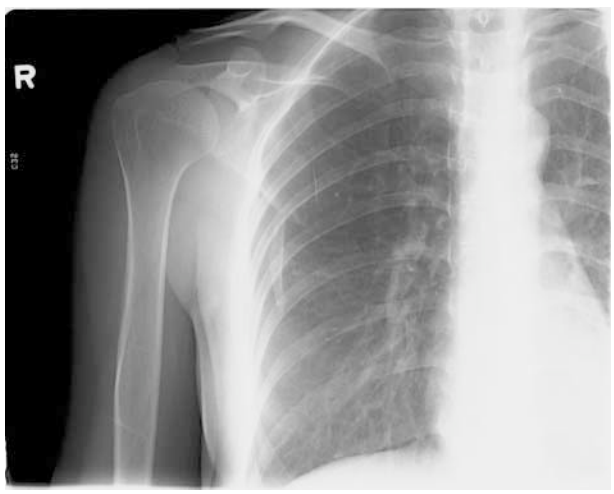

Figure 2. Follow up antero-posterior film of the right shoulder.

Questions

1. What is the abnormality and diagnosis?
2. What other radiographic view might be helpful?
3. What are the common associated injuries?
4. What is the treatment for this patient?

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Answers

1. There is a spindle-shaped radiopaque bony density seen at the lateral border of the right scapula. The follow-up radiograph demonstrates the bony opacity better. The diagnosis is avulsion fracture of the body of the right scapula.
2. The Y-view of the scapula may be helpful to confirm the diagnosis. Figure 3 clearly delineates the fractured fragment of the infero-lateral scapula body.
3. Rib fractures, pneumothorax, haemopneumothorax, clavicular fracture and other major chest injuries are commonly associated.
4. Conservative treatment: initial immobilisation and pain relief with gradual mobilisation as tolerated and strengthening of the shoulder muscles.

Discussion

The scapula is protected by layers of muscles attached to it, and together with its mobility, isolated scapula fracture is uncommon. Instead, it usually occurs in the setting of high-energy trauma as in cases of road traffic accident and fall from height. The estimated frequency is from 3% to 6.8% in patients with multiple trauma.[1-3] Therefore, once a scapula fracture is detected on the initial chest radiograph, one needs to thoroughly search for associated injuries especially the life-threatening ones such as intra-abdominal injury, tension haemopneumothorax or spinal fracture.

Multiple classification systems exist for scapula fracture such as Zdravkovic, Ideberg, Mayo and Thompson.[1-4] For the emergency physician, an easier approach is to identify whether the fracture originates from the body of the scapula. Scapula body fractures, whether displaced or not, do well on conservative treatment (as in our patient). Fractures of other parts of the scapula (including scapula neck, glenoid fossa, acromion, coracoid process, scapula spine) may need open reduction and internal fixation if they are displaced. A CT scan is usually needed to visualize the extent of the injury and urgent referral to the orthopaedic surgeon is necessary when the fracture involves sites other than the body of scapula.[1,5,6]

Figure 3. Follow up lateral film of the right shoulder.

References

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