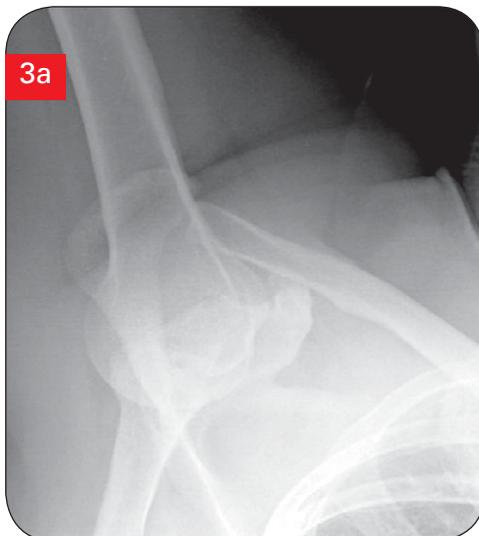


PROBLEM

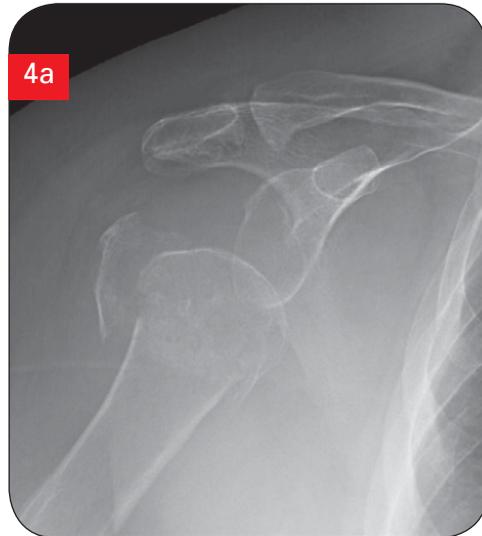
Patient 1



Patient 2



Patient 3

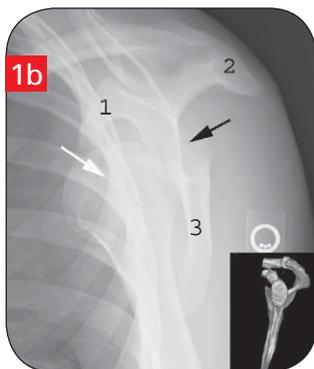


Patient 4

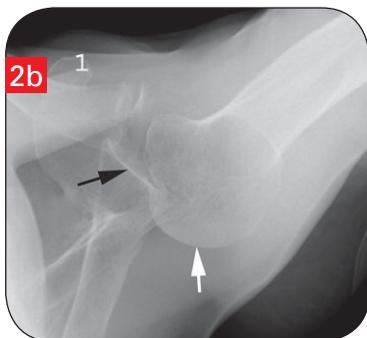
>>> The radiographs on this page are from four different cases of acute shoulder injury. As you examine them, do you see any evidence of shoulder dislocation?

Turn page for answers **>>>**

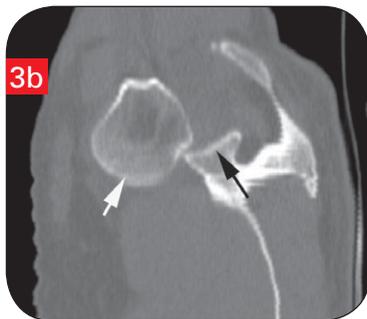
ANSWER



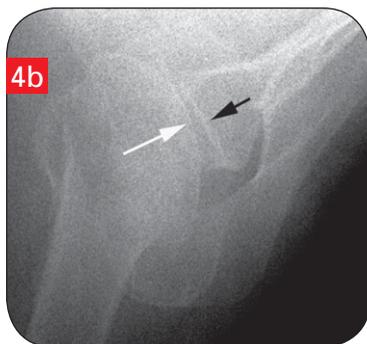
Patient 1 has an anterior shoulder dislocation. On a frontal radiograph (Figure 1a) this injury appears as an abnormally anterior and inferior positioning of the humeral head. In cases of suspected shoulder dislocation an axillary view is best, but a trans-scapular Y view is acceptable. This patient's trans-scapular Y view (Figure 1b) shows the abnormal anterior location of the humeral head (white arrow) relative to the glenoid (black arrow). The glenoid is found at the intersection of the coracoid process (1), which is anterior; the acromion (2), which is posterior; and the body of the scapula (3), which is inferior.



Patient 2 has a posterior shoulder dislocation, which will always show up in any radiographic view as a humeral head held in internal rotation. These dislocations are less common than the anterior variety. On the frontal view (Figure 2a), an increased overlap of the humeral head and the glenoid is visible, along with a flattening of the medial cortex of the humeral head due to impaction with the glenoid (trough sign). Posterior shoulder dislocations may be subtle on anteroposterior radiographs. If one is suspected, an axillary view should be obtained. The axillary view of this patient's injury (Figure 2b) shows the abnormal posterior location of the articular surface of the humeral head (white arrow) relative to the articular surface of the glenoid (black arrow). Once again, the anterior direction can be determined by looking for the coracoid process (1).



Patient 3 has luxatio erecta, an uncommon inferior dislocation. These patients will typically present after a fall, with the affected arm fixed above the head. All frontal radiographs of luxatio erecta will be similar in appearance to this patient's (Figure 3a), and as with any shoulder dislocation, this one can be confirmed with an axillary view. If an adequate axillary view cannot be obtained, a CT scan is a viable alternative for determining the location of the humeral head. Figure 3b, a sagittal reconstruction from a CT scan of the shoulder, demonstrates the abnormal inferior location of the articular surface of the humeral head (white arrow) relative to the articular surface of the glenoid (black arrow). The physician should be alert to the possibility of severe capsular and other soft-tissue injuries with this dislocation.



Patient 4 has a fracture of the proximal humerus, of which the frontal view (Figure 4a) is somewhat misleading. It gives the appearance of an inferiorly positioned humeral head when in fact the patient's fracture caused a large hemorrhagic joint effusion resulting in a "pseudodislocation." An axillary view (Figure 4b) can help identify or exclude a true dislocation, and in this case it demonstrates proper alignment of the articular surface of the humeral head (white arrow) with the articular surface of the glenoid (black arrow).

SUGGESTED READING

Goud A, Segal D, Hedayati P, et al. Radiographic evaluation of the shoulder. *Eur J Radiol.* 2008;68(1):2-15.

Dr. Hentel, editor of "Emergency Imaging," is an assistant professor of radiology at the Weill Cornell Medical College and chief of emergency/musculoskeletal imaging and vice chairman for clinical operations in the department of radiology at New York-Presbyterian Hospital in New York City. He is also a member of the EMERGENCY MEDICINE editorial board.