A 53-year-old man with type 2 diabetes mellitus and hypertension presented to the emergency department with pain in his left upper chest and back, neck, and shoulder. The pain increased with passive and active range of motion testing and decreased at rest. His physical examination was unremarkable except for restricted left shoulder movement and generalized tenderness in the left shoulder area.

The patient was admitted with a diagnosis of acute atypical chest pain suggestive of angina. This was the patient’s third hospital admission for recurrent pain in the left side of the upper chest and back and adjacent extremity. Cardiac enzyme levels and other diagnostic criteria—including levels of troponin I, creatine kinase (CK), and CK-MB, and ECG results—consistently failed to support the admitting diagnoses of angina. A portable anteroposterior supine film of the left shoulder was performed at bedside to rule out musculoskeletal pathology. Compared with a study from the previous month, the shoulder appeared to be held in an internal rotation in the new film; there was also evidence of compression of the anteromedial humeral head, or a “trough sign” (A, arrows). A close-up view of the scapula revealed posterior displacement of the humeral head, which lay inferior to the acromion (B). The anterior view showed a small ossific density (C, red arrow), which may have been representative of an avulsed fracture fragment; a questionable avulsed fragment at the inferior aspect of the humeral head also was noted (C, black arrow). The soft tissues were moderately prominent. These radiographic findings pointed to a posterior shoulder dislocation. Neil J. Berger, MD, Scott C. Hollander, DO, and Naishadh A. Shah, BS, MBA, of St Joseph’s Hospital in Philadelphia write that posterior dislocation of the shoulder is rare; it represents only 1% to 4% of all shoulder dislocations. This type of dislocation usually results from direct trauma to the shoulder or a fall on an outstretched arm during internal rotation or adduction. (This patient’s dislocation was most likely the result of a minor trauma or fall; however, he could not recall such an incident.) A history of electric shock or epileptic seizures also raises the suspicion of posterior dislocation of the shoulder. Other causes include complications during surgery for multidirectional shoulder instability. Because of its rarity and nonspecific signs and symptoms, posterior dislocation of the shoulder is one of the most elusive diagnoses in clinical medicine. Even orthopedic surgeons initially misdiagnose 60% of posterior shoulder dislocations, and the correct diagnosis is often delayed for months or years. A careful physical examination should include comparison with the unaffected arm, shoulder, and chest. The patient’s shoulder may reveal loss of the normal rounded contour anteriorly. Pay special attention to a finding of posterior fullness with anterior flatness of the affected shoulder. The shoulder is often held in internal rotation and adduction. In general, the plain film findings of a posterior shoulder dislocation are the reverse of those found in anterior instability. Loss of the humeral head and glenoid rim and bony parallelism (crescent sign) may be observed. Fractures of the glenoid rim and sclerosis are often key findings. A reverse Hill-Sachs lesion, or trough sign, (A and C) may be seen as compression of the anteromedial humeral head. It can also be seen as one of two parallel lines of cortical bone on the medial aspect of the humerus (the other line is the medial cortex of the humeral head). Some films may also display...
a lack of continuity of the Maloney arc (the curve from the lateral border of the scapula to the medial humerus). A closed reduction of the posterior dislocation was performed. A single spot film with fluoroscopic guidance by means of a C-arm apparatus demonstrated satisfactory alignment of the glenohumeral joint (D, black lines). No further evidence of the dislocation was noted.


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