What lies behind the pain after shoulder dislocation?

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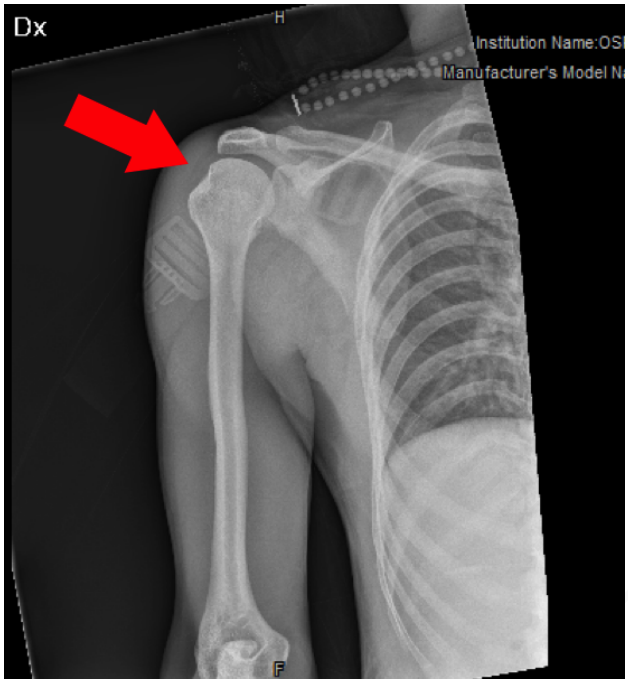

A 38-year-old man presented to our emergency room with severe pain and inability to mobilize his right shoulder joint after a violent blunt trauma during his work. The humeral head was palpable anteriorly, with the loss of normal contour of the deltoid and acromion prominent posteriorly and laterally, as it occurs in the anterior shoulder dislocation. The shoulder was easily reduced on 1st attempt using 1.5 mg/kg intravenous fentanyl and 0.5 mg/Kg intravenous midazolam sedation in the emergency room. After the procedure, he complained of pain at the right humeral head, so we performed an X-Ray.

Question

Given the patient's history and the X-Ray imaging, what is the most likely diagnosis?

1. Septic arthritis
2. Hill-Sachs fracture
3. Hydroxyapatite deposition disease (calcific tendinitis)
4. Subcortical cyst of the humeral head

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Answer

The X-Ray demonstrated a successful reduction of the anterior shoulder dislocation but revealed a Hill-Sachs lesion. Hill-Sachs lesions are traumatic impaction fractures of the humeral head, often observed in patients with anterior shoulder dislocation[1] or after seizures,[2] firstly described in 1940 by two radiologists, Harold Arthur Hill and Maurice David Sachs. The mechanism for Hill-Sachs lesions is blunt trauma: the dislocated humeral head is displaced in an anterior-inferior-medial direction relative to the scapular glenoid fossa; subsequent strong muscular contractions lead to a violent bony collision between the anteroinferior region of the scapular glenoid rim and the posterosuperior-lateral aspect of the humeral head.[3,4] Hill-Sachs lesions vary in length, width, depth, and orientation, and they can occur anywhere along the superior aspect of the humeral head, bare area, and greater tuberosity. Clinical presentation includes shoulder pain, weakness, and limited range of motion; a potential long-term complication is shoulder instability.[5] Hill-Sachs fractures are common in the clinical practise, but often not recognized on post-reduction radiographs. Diagnosis can be significantly increased if radiologists are aware that the internal rotation view may fail to show the injury, and if all 4 views of a shoulder series are scrutinized.[6] Ultrasonography is a valuable imaging technique in the diagnosis of Hill-Sachs lesion and a useful method to quantify small or medium size (up to 6 mm deep) lesions.[7] Non-surgical management, including focused rehabilitation, is indicated in patients with small bony defects and non-engaging lesions in which the glenohumeral joint remains stable during desired activities. Surgical options include arthroscopic and open techniques.[1]

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