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Total Shoulder Arthroplasty in a Patient with Neglected Dislocation, Hill-Sachs Lesion, and Bankart Lesion

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Abstract

Introduction: Neglected shoulder dislocations, defined as the loss of the glenohumeral joint relationship for more than three weeks without treatment, can lead to complex lesions, such as Hill-Sachs and Bankart fractures. Surgical management in elderly patients is challenging due to bone loss and soft tissue contractures. Case Presentation: We present the case of a 74-year-old male with a four-month history of a neglected anterior shoulder dislocation, a Hill-Sachs lesion, and a Bankart lesion. The patient underwent reverse total shoulder arthroplasty (RSA) with glenoid reconstruction using an autologous humeral head bone graft. The postoperative course was complicated by a retained intraoperative screwdriver tip fragment. At the 40-day follow-up, the patient reported no pain and showed improved functional scores (ASES 73, UCLA 21) despite the lack of formal physical therapy. Conclusion: RSA with bone grafting can provide satisfactory initial pain relief and functional improvement in complex chronic dislocations. However, this report highlights the critical need for longer-term follow-up to assess graft union and the potential implications of the retained intraoperative foreign body.

Keywords

Neglected Shoulder Dislocation, Reverse Shoulder Arthroplasty, Glenohumeral Joint, Hill-Sachs Lesion, Bankart Lesion

1. Introduction

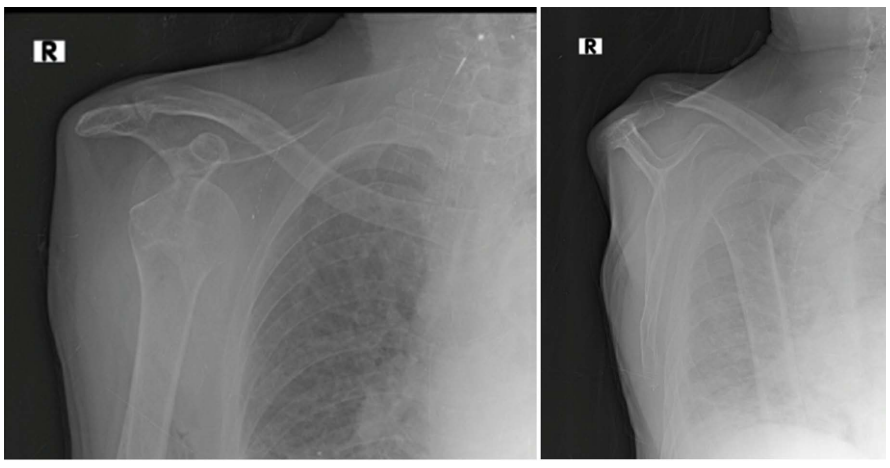
Neglected shoulder dislocations are defined as the loss of the glenohumeral joint relationship for more than three weeks without treatment [1]. In Colombia, this

condition is often underdiagnosed and tends to occur in patients with low socioeconomic status who do not seek timely hospital care, frequently resorting instead to empirically trained individuals known as "sobanderos" [1]. Such delays may result in complications, such as the Hill-Sachs lesion, characterized by a depression in the posterior humeral head surface due to its impact against the anterior glenoid rim during an anterior dislocation [2] [3]. This contact can also cause detachment of the anteroinferior labrum and glenoid rim fracture (Bankart lesion) [4]. When instability leads to discomfort, surgical stabilization of the glenohumeral joint is indicated to improve function and reduce pain [5]. This report presents the case of a patient with a chronic shoulder dislocation, Hill-Sachs lesion, and Bankart lesion treated surgically with reverse total shoulder arthroplasty (RSA) and glenoid remodeling using an autologous bone graft, suggesting RSA as a viable therapeutic option in the short term, while also discussing the challenges and limitations encountered.

2. Case Presentation

A 74-year-old male patient presented with right shoulder trauma four months prior, reporting pain, deformity, and limited active range of motion. On physical examination, shoulder flattening with anterior prominence, loss of deltoid contour (epaulette sign), elbow flexion, subacromial depression (axe-blow sign), and slight adduction with internal rotation of the arm supported by the contralateral limb were observed. Palpable acromial prominence and humeral head in the deltopectoral groove were noted. Active range of motion was limited to external rotation 10˚, internal rotation 60˚, posterior extension 15˚, and restricted passive movement.

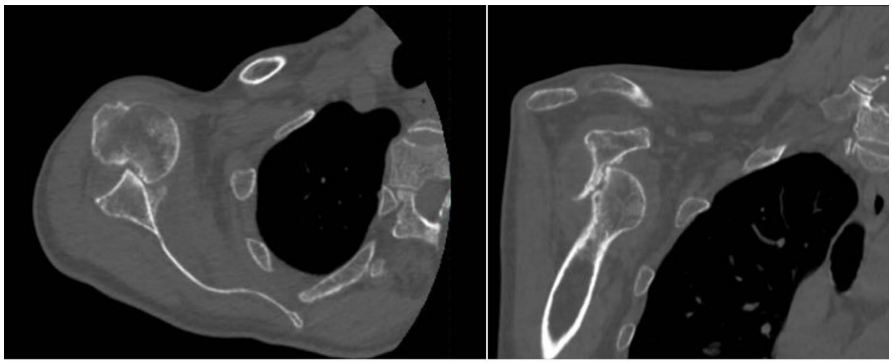
Radiographs showed anterior dislocation of the right shoulder with cortical discontinuity of the posterior humeral head and osteophyte formation at the acromioclavicular margin (**Figure 1**).



(a) (b)

Figure 1. (a) Anteroposterior radiograph of the right shoulder; (b) Y radiograph of the right shoulder demonstrating chronic anterior dislocation with a hill Sachs Lesion and an acromioclavicular osteophyte.

CT scan confirmed a chronic anterior dislocation with Hill-Sachs and Bankart lesions (Figure 2).



(a) (b)

Figure 2. (a) Axial view Computed tomography; (b) Coronal view Computed tomography of the right shoulder confirming a chronic anterior glenohumeral dislocation with Hill-Sachs and Bankart lesions.

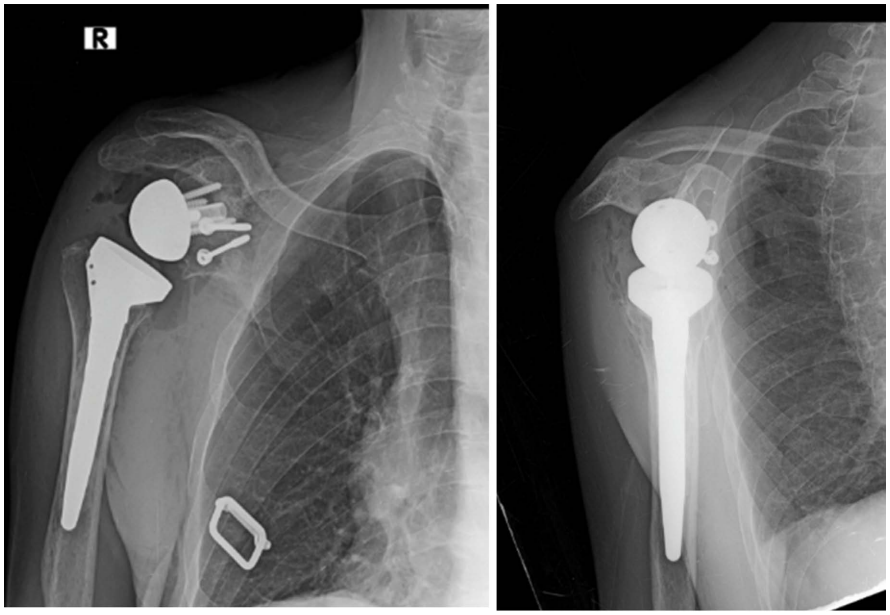
3. Surgical Description

Under general anesthesia and beach chair positioning, a deltopectoral approach was performed. The cephalic vein was identified and ligated, and the conjoint tendon was released with proximal tenotomy. Subdeltoid and subacromial fibrosis were dissected, and scar tissue was released to expose the humeral head. After subscapularis tenotomy and capsulotomy, a guidewire was inserted through the humeral head center, and a bone graft was harvested from it. The metaphysis was cut at a 153˚ angle, and canal reaming was performed progressively. Trial stem positioning was verified.

The glenoid was exposed, and an injury to the circumflex humeral artery was identified and ligated by the vascular surgery team. An anterior glenoid defect was reconstructed using an autologous bone graft fixed with two cancellous screws (40 × 40 mm). A 29 mm metaglenoid was implanted and fixed with four screws, followed by placement of a 36 mm glenosphere. During final tightening of the glenosphere screw, the tip of the screwdriver fractured and a small metallic fragment was retained within the joint. Despite multiple attempts at retrieval, the fragment could not be safely extracted without risk of further soft tissue damage. Its presence was documented in the surgical record. A cemented 12 mm humeral stem with matching insert was then positioned, achieving stable articulation without dislocation (Figure 3). Subscapularis repair and layered closure were performed.

4. Postoperative Course

Postoperatively, the patient was prescribed analgesics and instructed to begin pendulum exercises for one week, followed by passive motion from weeks 2 to 4, and then active mobilization with progressive strengthening. Due to logistical and socioeconomic factors, the patient did not attend formal physical therapy sessions but performed a prescribed home exercise program consisting of passive Codman



(a) (b)

Figure 3. (a) Anteroposterior radiograph; (b) Y radiograph of the shoulder postoperative X-ray: Post reverse total shoulder arthroplasty with glenoid bone graft reconstruction.

pendulum exercises, passive external rotation with a stick, and supine passive forward flexion.

At 40 days, the patient reported no pain despite not having started physical therapy. Examination revealed external rotation of 25˚, internal rotation to the gluteus, posterior extension 40˚, and anterior flexion 60˚. The American Shoulder and Elbow Surgeons (ASES) score was 73, and the UCLA Shoulder Score was 21. Postoperative radiographs confirmed appropriate implant positioning; however, the retained screw tip fragment was not clearly visible on plain films, and a CT scan was recommended for future follow-up to assess its exact location. The bone graft appeared mechanically stable, though osseous integration could not be confirmed at this early stage.

5. Discussion

Most authors agree that chronic or neglected shoulder dislocation refers to loss of the glenohumeral relationship with diagnostic delay exceeding three weeks [6]-[10]. It occurs more frequently in elderly patients with poor bone quality. While early diagnosis enables closed reduction [7], delayed consultation—common in Colombia due to socioeconomic factors, leads to chronicity-associated pathologies such as humeral head defects, articular surface changes, bone loss, and glenoid wear [11]. These prevent closed reduction and stable articulation.

RSA has been shown to provide superior pain relief, improved motion range, better stability, and fewer complications compared to hemiarthroplasty (HA) and anatomic total shoulder arthroplasty (TSA) in the context of cuff arthropathy and complex fractures with associated bone loss [12]-[15]. Glenoid bone grafting is a

well-established technique to correct bone defects, stabilize baseplate fixation, and maintain humeral length [16]. In this case, using the humeral head autograft fixed with screws achieved solid mechanical fixation of the metaglenoid. The choice of a biological autograft over a metal-augmented baseplate was made to maximize bone stock in this patient and to provide a biological surface for potential long-term integration, which may be advantageous for any future revision surgery. Metal augments, while useful for severe asymmetric defects, can be associated with stress shielding and are less forgiving in terms of contouring to the specific defect shape [17]. This case demonstrates that autograft is a viable, low-cost alternative.

However, several points warrant further discussion. First, the retained screwdriver tip presents a potential complication. While it is a small metallic fragment, its intra-articular location poses theoretical risks of third-body wear (which could accelerate polyethylene liner degradation and potentially lead to glenosphere scratching), impingement, or migration to a neurovascular structure. At the 40-day follow-up, the patient was asymptomatic, but long-term surveillance with serial imaging is mandatory to monitor for any signs of migration or adverse local tissue reaction. The lack of visualization of the fragment on plain radiographs is a limitation; a postoperative CT scan would be the ideal modality for future follow-up.

Second, the short follow-up period of 40 days is a significant limitation. While the patient's initial functional recovery is promising, we cannot claim a favorable long-term prognosis. The stability of the autograft was assessed only clinically and by the lack of migration on the 40-day radiograph, which is insufficient to confirm osseointegration. Radiographic union of a structural bone graft typically takes 6 - 12 months. Therefore, the results presented here should be interpreted as very short-term outcomes. The lack of confirmed graft incorporation is a key limitation that will be addressed with continued follow-up.

Third, the absence of formal physical therapy, while a real-world reflection of socioeconomic challenges, limits the generalizability of the functional recovery. The patient's improvement (ASES 73) was achieved through a simple home program. It is plausible that a structured, supervised rehabilitation protocol could have resulted in even greater range of motion and strength gains. This factor should be considered when comparing these results to cohorts with standardized postoperative care.

6. Conclusion

This case report demonstrates that surgical management using reverse shoulder arthroplasty (RSA) with autologous bone grafting can be an effective therapeutic option for patients with neglected shoulder dislocation, Hill-Sachs, and Bankart lesions in the immediate postoperative period. The procedure provided initial pain relief and improved function, even in the absence of formal rehabilitation. However, this report is constrained by its very short-term follow-up and the presence

of a retained intraoperative foreign body. These factors underscore the importance of meticulous surgical technique and highlight the necessity for long-term follow-up, including advanced imaging, to fully assess graft union, implant durability, and the potential consequences of retained hardware fragments. The favorable short-term outcomes suggest RSA is a viable option, but they must be viewed within the context of these significant limitations.

Ethical Considerations

The patient provided written informed consent for publication of this case report, and all information was explained to the patient prior to submission.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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