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Capsular Release Following Total Shoulder Arthroplasty: An Analysis of Early Outcomes

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Summary:

In patients with shoulder stiffness after arthroplasty surgeons should have a high suspicion for underlying pathology, such as glenoid loosening or subscapularis injury.

Abstract:

Background

Although persistent shoulder stiffness after total shoulder arthroplasty is likely an underreported complication, there is a paucity of studies analyzing the treatment of this complication. The purpose of this study is to analyze the outcomes of capsular release (open or arthroscopic) for the treatment of refractory stiffness following total shoulder arthroplasty.

Methods

A retrospective institutional review from 2002 to 2017 identified 19 patients who experienced persistent shoulder stiffness after anatomic total shoulder arthroplasty refractory to nonoperative treatment, requiring either open (n=5) or arthroscopic (n=14) capsular release. The mean age of the patients was 53 years. There were 7 (39%) patients who had a prior diagnosis adhesive capsulitis requiring capsular release prior to primary total shoulder replacement. The mean time from primary arthroplasty to capsular release was 0.8 years.

Results

At a follow-up of 2.3 years (1-5.5), the patients mean preoperative to postoperative motion improved overall, including forward flexion, abduction, external rotation, internal rotation at 0o, and pain scores ($p<0.01$). However, there were 3 (16%) that required revision surgery for glenoid loosening, and 1 additional patient who was scheduled to undergo revision surgery for a subscapularis rupture. Of the remaining 15 patients, 7 had refractory stiffness and/or pain, with 4 requiring a repeat intervention, including repeat capsular release (n=3) or arthroscopic debridement (n=1). Of the 3 that required repeat capsular release, 2 had a prior history of adhesive capsulitis. The survival-free of reoperation at 2 and 5 years was 76% and 53%, respectively, while the survival-free of revision surgery at 2 and 5 years was 83%. Of the patients with workman's compensation (n=5), 3 had poor outcomes. There was no difference between open or arthroscopic capsular release. In the remaining patients (n=8), the mean postoperative forward flexion was (89o to 143o), abduction was (49o to 121o), external rotation was (11o to 41o) and internal rotation at

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Oo was (L5 to T12).

Conclusions

Shoulder stiffness after total shoulder arthroplasty is a rare complication and difficult pathology to treat. Surgeons should have a high suspicion for underlying pathology, such as glenoid loosening or subscapularis injury. Once those pathologies are ruled out, ~50% demonstrate minimal improvement with capsular release, while the others markedly improve in shoulder both motion and pain. There was no difference when performed open or arthroscopic.