Management of the Athlete with a Failed Shoulder Instability Procedure

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KEYWORDS

• Shoulder instability • Recurrence • Athlete • Bankart • Latarjet

KEY POINTS

- The athlete requires a highly functional shoulder, but also routinely exposes his or her shoulder to excessive force and stress.
- High recurrence rates after arthroscopic stabilization have been reported in athletes.
- Risk factors for recurrence include age less than 20, contact/collision sports, higher level of competition, capsular laxity, glenoid bone loss, and engaging Hill-Sachs deformities.
- Fundamental to successful revision surgery is choosing the correct procedure and is based on careful analysis of etiology of failure and risk factors for recurrence.

INTRODUCTION

Athletes with shoulder instability represent a challenge for the shoulder surgeon. Not only do they require a highly functional shoulder in order to perform at a high level, but they also routinely expose their shoulders to demanding and potentially dangerous situations. An elite baseball pitcher's shoulder may exceed 165° of external rotation and generate 70 Nm of torque.[1] A rugby tackle generates forces approaching 2000 N at the shoulder joint.[2]

Conventional open Bankart repair historically was the gold standard for stabilization in athletes because of reported low recurrence rates and high rates of return to play.[3–5] Improving techniques and implants have influenced a paradigm shift toward arthroscopic repair, and now most surgeons recommend arthroscopic Bankart repair for the athlete with instability, citing equivalent results to open repair.[6–9]

However, when critically analyzed, the results of Bankart repair may not be as good as originally thought, especially in high-risk populations such as athletes (**Fig. 1**). Balg

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Fig. 1. Left shoulder anteroposterior (AP) radiograph of a 22-year-old ice hockey player with a recurrent anterior dislocation after 2 prior arthroscopic stabilization attempts. Note multiple metallic anchors placed during prior surgeries.

and Boileau[10] prospectively followed 131 patients after arthroscopic Bankart repair and found recurrence in 14.5%. Voos and colleagues[11] found a recurrence rate of 17.8% in a prospective cohort of 83 patients. In both studies, the rates were significantly higher in younger patients, those with ligamentous laxity, and those who participated in sports, all factors characteristic of athletes. One-third of athletes who returned to contact sports had a recurrence in the study by Balg and Boileau.[10] Such high recurrence rates have led some surgeons to recommend a bony procedure such as the Bristow or Latarjet coracoid transfer for stabilization in high-risk patients.[10,12,13]

Athletes who present with failed stabilization procedures are complicated. They have already endured an initial instability event, potentially multiple recurrences, missed playing time, at least one prior surgery, months of rehabilitation to get back to their sport, and now a recurrence after surgery. Not only must athletes face additional missed playing time and potentially more surgery and rehabilitation, they face an increased risk of another recurrence after revision and a substantial possibility of not returning to their sport.[14–20]

Appropriate management of the athlete after failed instability surgery requires careful analysis of the factors that contributed to recurrence, and successful revision surgery must address those factors to reliably achieve a stable shoulder and allow return to play. This article reviews failed surgical shoulder stabilization in athletes and outlines an algorithm for management.

OUTCOMES OF PRIMARY STABILIZATION

Open Bankart repair has been reported to have low recurrence rates and a reliable return to sport. In 1978, Rowe and colleagues[3] reported a rate of recurrent instability of 3.5% with 97% of athletes returning to sports after the procedure. Twenty-five years later, Pagnani and Dome[5] reported a 3.4% recurrence rate in American