Pain and Functional Outcomes after Remplissage in Active Duty Servicemembers: Mid- to Long-Term Outcomes

Brandon H Chung, Alexis Sandler, John Philip Scanaliato, Ron Gilat, Hunter Czajkowski, Nata Zwi Parnes

INTRODUCTION: The incidence of shoulder instability is overrepresented among active duty servicemembers (ADSM), and goals of restoring shoulder function and ability to return to duty emerge as important concerns. In patients with shoulder instability found to have a Hill Sachs lesion and subcritical glenoid bone loss, remplissage in combination with arthroscopic Bankart repair has demonstrated a recent increase in popularity. Among civilian populations, rates of failure after Bankart repair with remplissage have been reported in the range of 11 – 15% at five-year follow up; however, there is limited data regarding the success rates of remplissage in ADSM.

METHODS: In this retrospective, single-institution case series, all patients with at least five years of follow up were eligible for inclusion. All patients reported mid-term outcomes data, defined as at least five years of follow-up, and a subset of patients reported long-term outcome data, defined as at least ten years of follow-up. Preoperative and postoperative patient reported outcome measures (PROMs) including the pain Visual Analog Scale (VAS), American Shoulder and Elbow Surgeons Standardized Shoulder Assessment (ASES), Subjective Shoulder Value (SSV), and Rowe scores were collected at preoperative and postoperative visits initially and by phone call at mid and long-term follow up. Shoulder range of motion (ROM) including forward flexion, external rotation, and internal rotation were measured using a goniometer at the patient's last recorded follow-up visit. Return to duty and sporting activity were also collected.

RESULTS:

Of 32 ADSM who underwent Bankart repair with remplissage from JAN 2010 – JUL 2019, five-year outcomes data were available for 26 patients and ten-year outcomes data for 15 patients. At time of surgery, mean patient age was 25 years old (SD: 5.9, range: 19 – 39) and 88.5% were male (n = 23). Half of surgeries involved the dominant extremity (n = 13) and slightly over half involved the right shoulder (n = 14, 53.8%). Average glenoid bone loss was 5.9% (SD: 1.5) and ranged from 4.1 – 9.8%. On average, Hill Sachs lesions measured 12.6 mm in width (SD: 1.3, range: 10.3 – 15.3) and 8.3 mm in depth (SD: 2.0, range: 4.8 – 12.1).

At five-year follow up, all PROMs demonstrated significant improvements, with pain VAS improved from 7.2 (2.4) preoperatively to 1.1 (1.6) postoperatively, ASES from 41.7 (SD: 13.8) preoperatively to 91.3 (SD: 13.3) postoperatively, SSV from 48.5 (SD: 22.9) to 91.6 (SD: 15.0) postoperatively, Rowe 39.4 (SD: 15.3) preoperatively to 89.6 (19.6). There were no significant changes in preoperative to postoperative ROM. One patient was indicated for lysis of adhesions, subacromial decompression, capsular release, and manipulation under anesthesia at seven months postoperatively. One patient reported remnant pain and another remnant stiffness. Two patients underwent medical discharge within the first five years postoperatively.

At ten-year follow up, average pain VAS was 1.7 (SD: 2.4), ASES was 88.1 (SD: 14.7), SSV was 89.3 (SD: 15.8), and Rowe was 84.3 (SD: 21.6). Two additional patients were unable to return to duty by ten years.

DISCUSSION AND CONCLUSION: Bankart repair with remplissage demonstrates overall excellent rates of pain relief, functional improvement, and resolution of dislocation at mid-term follow up that appears sustained with long-term follow up; however, the risk of continued shoulder disability and inability to return to duty remains present.