Mid-term Outcomes Following Fresh-Frozen Humeral Head Osteochondral Allograft Reconstruction for Reverse Hill-Sachs Lesion: A Case Series

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Introduction

Locked posterior glenohumeral dislocations with a reverse Hill-Sachs impaction fracture involving less than 30% of the humeral head most frequently are managed via lesser tuberosity transfer into the defect, whereas those involving more than 50% of the humeral head are managed via humeral head arthroplasty. Reconstruction of the defect with the use of segmental femoral osteochondral allografts has been proposed to treat patients between these two ranges; however, the midterm/long-term outcomes of this joint-preserving procedure are controversial.

Methods

Between 2001 and 2018, 12 consecutive patients with a unilateral locked posterior shoulder dislocation and an impaction fracture involving 30% to 50% (mean, 31% ± 1.32%) of the humeral head were treated via segmental reconstruction of the defect with the use of fresh-frozen humeral head osteochondral allografts. Patients were assessed clinically, radiographically, and via CT scans at a midterm follow-up of 66 months ± 50.25 months (range, 24 to 225 months).

Results

All twelve shoulders had a slight limitation in anterior elevation (mean, 166.6° ± 22.76). Mean active external rotation with the shoulder in 90° of abduction was 82.5° ± 6.61°, and mean active external rotation with the arm held in stable adduction was 79.16° ± 18.80°. Mean abduction was 156.25° ± 25.09°. The mean Constant-Murley score was 82 ± 15.09 (range, 40 to 97), and the mean American Shoulder and Elbow Surgeons score was 94 ± 8.49. The mean preoperative and postoperative Western Ontario Shoulder Instability index score was 236.5 ± 227.9 and 11.20 ± 10.85, respectively. Development of osteoarthritis was minimal. The mean allograft resorption rate was 4% ± 2.4%. No case of failure (revision surgery for any reason) was reported in this series.

Discussion and Conclusion

Segmental humeral head reconstruction with humeral head fresh-frozen osteochondral allografts provides good to excellent clinical results with low-grade osteoarthritis and low allograft resorption in patients with a locked posterior shoulder dislocation.