

Durability of Partial Humeral Head Resurfacing

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Background: Partial humeral head resurfacing arthroplasty utilizes a stemless device, which conserves bone and restores normal anatomy. We hypothesized that this does not offer a reasonable alternative to full resurfacing or total shoulder arthroplasty.

Methods: This is a retrospective study of 39 shoulders with focal chondral defects of the humeral head treated with partial resurfacing arthroplasty. Minimum 2-year follow-up is reported, unless failure and operative intervention superceded this duration. Mean follow-up was 51.3 months. Mean age was 45.6 years (range 27–76). Pre and post-operative evaluation included history, physical examination, radiographs, and clinical scoring using ASES Shoulder Score Index (SSI) and Subjective Shoulder Value (SSV).

Results: Twenty-five of 39 shoulders (64.1%) demonstrated functional improvement and decreased pain. Significant mean improvements were observed in forward flexion (121.3o to 151.6o; p = 0.002), external rotation (37.1o to 58.3o; p = 0.0003), mean SSV (30.75% to 73.6%; p < 0.0001), and ASES score (29.35 to 70; p < 0.0001). However, at an average of 26.6 months follow up, the failure group included 6 patients (15.3%) who underwent revision and another four (10.2%) who were recommended revision. Patients with no prior or concomitant procedure were rare (n=5) but had the most reliable outcomes with partial resurfacing, with no failures in that group. Of the 24 patients with prior procedures, 5 had been revised, and the clinical outcome scores for the remaining patients were consistently lower than those seen in patients without prior procedures.

Conclusion: Concomitant pathology and prior or concomitant surgical procedures potentially impair the outcome of the resurfacing procedure and could be a contraindication. Long-term success remains guarded with this treatment modality, especially in patients whose chondral injury is not an isolated finding.

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