

Correction of glenoid deformity and erosion with BIO-RSA.

Early report from a prospective study.

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Aim: Glenoid bone deficiency and erosion must be corrected during reverse shoulder arthroplasty (RSA) to avoid complications, improve function and longevity of the arthroplasty. We aim to evaluate our experience with glenoid bony increased offset and augmentation of RSA (BIO-RSA).

Methods: Patients scheduled for primary RSA presenting glenoid bone deficiency and erosion were included prospectively. Bony augmentation was planned based on preoperative CT-scans. Autologous bone graft was preferred and harvested from the humeral head or the iliac crest (ICBG). Allogeneous bone graft was used if autograft was not available. Bony incorporation and deformity correction were evaluated on CT scans at 1 year follow up (FU). Functional outcome was assessed according to the Constant Murley score (CMS) and WOOS (The Western Ontario Osteoarthritis of the Shoulder) preoperatively and at 1 year FU. Complications were registered.

Results: We included 33 patients (21 men) with median age 69 (52-84) years and median BMI 28 (21-42). BIO-RSA was performed for correction of version in 19/33 and in 14/33 for lateralisation only. The autologous humeral head was used for grafting in 31/33, ICBG was used in one patient, and one received an allograft. 28/33 underwent CT scan at 1 year FU. Average correction of version was 21.2 degrees (14-35 degrees). Median preoperative CMS was 10 (range 3-31) and improved at 1 year FU to a median of 57.5 (range 11-86). Preoperative WOOS was median 20.6% (range 5-77%), at 1 year FU median WOOS was 78.5% (range 15-100%). Neural complications occurred in 3 patients of which 2 lesions were not fully recovered at 1 year FU. 2 patients demonstrated fractures of the scapular spine at 8 and 12 months. No intervention was indicated. 2/33 bone grafts did not heal and the glenoid implant loosened. One was diagnosed at 4 months; the other was diagnosed with CT scan at 1 year FU. Both patients were revised to hemiarthroplasty with CTA head.

Conclusions:

BIO-RSA results in good bony incorporation and predictable correction of deformity. The majority of patients experience improved functional outcome. Care should be taken to avoid neural complications.