Short-Term Outcomes Following Minimal Humeral Preparation Using a Self-Broaching, Stemless Anatomic Total Shoulder Arthroplasty

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INTRODUCTION: As innovation in anatomic total shoulder arthroplasty continues, many surgeons have been concerned with poor bone quality resulting in component failure when employing stemless humeral implants. To address these concerns, our center implemented a zero-humeral preparation technique with a novel self-broaching humeral implant for patients undergoing anatomic TSA (Figure 1). This retrospective, single-center study evaluates short-term clinical outcomes using this technique.

METHODS: All patients underwent anatomic TSA using a minimal humeral prep technique allowing a novel implant design to be directly inserted without broaching the proximal humerus. Since its introduction, this implant and technique have been used in all patients indicated for anatomic shoulder arthroplasty independent of bone quality. Thirty-nine included patients who underwent stemless TSA by one senior surgeon between 2020 and 2021 with a minimum 1-year follow-up were reviewed. Scores for satisfaction, ASES, Constant, and SANE were collected.

RESULTS SECTION: Results: Following TSA with a self-broaching stemless implant, patients experienced significant improvements in health. SANE scores increased from 30.41 preoperatively to 85.33 after 1-2 years postoperatively ($P < .001$), ASES scores improved from 33.50 to 84.91 ($P < .001$), EQ-5D scores improved from 0.52 to 0.80 ($P < .001$), and patients rated their overall satisfaction at 4.64/5. Constant scores increased from 45.36 to 70.05 ($P < .001$). No implants had radiographic signs of loosening.

DISCUSSION: A zero-preparation technique combined with a novel self-broaching stemless humeral component demonstrates good early clinical outcomes with no instances of humeral component loosening. Concerns regarding bone quality and early fixation may be mitigated with this approach.

SIGNIFICANCE/CLINICAL RELEVANCE: Surgeons can anticipate good clinical outcomes following this novel, self-broaching stemless component for anatomic total shoulder arthroplasty.

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IMAGES AND TABLES:

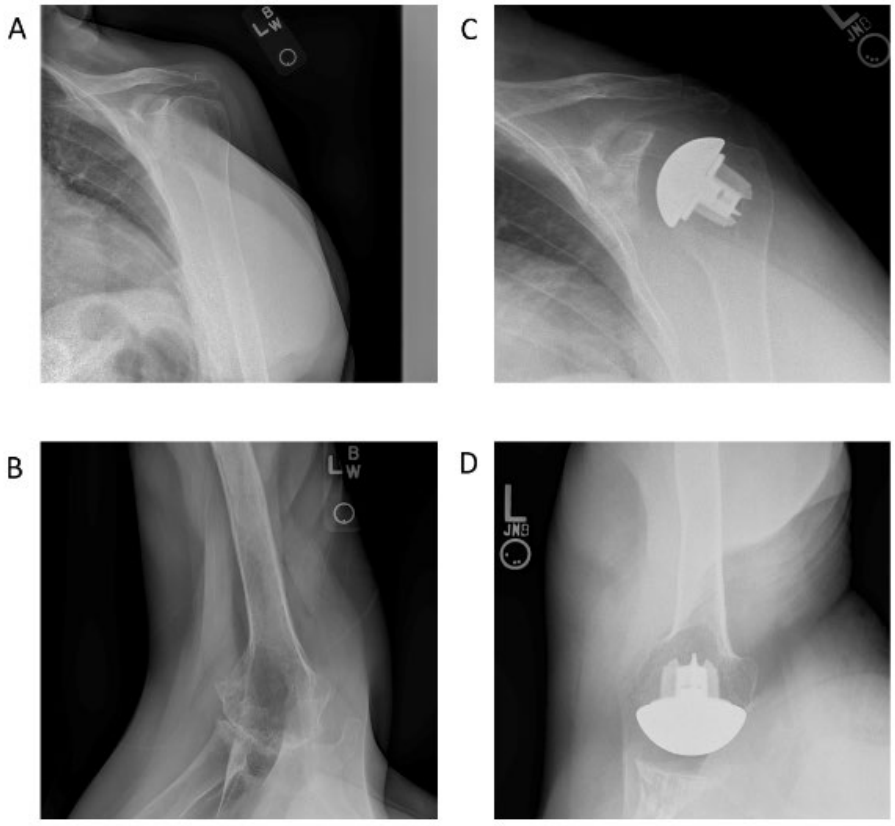

Figure 1. Images are before and after radiographs of a patient included in this study. (A, B) demonstrate pre-op AP and axillary views, respectively. (C) is the post-op AP view and (D) is the post-op axillary view.