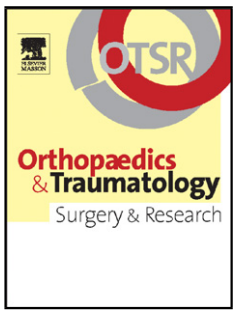

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Original article

Total Shoulder Prosthesis with Humeral Resurfacing: Impact on Lateral Offset and Short-Term Clinical Consequences

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ABSTRACT

Background: Reports of early glenoid wear after humeral resurfacing hemiarthroplasty have prompted the use, in combination with this procedure, of newly developed glenoid implants. This combination can increase global humeral offset. The objectives of this study were to assess changes in overall lateral offset and their potential short-term clinical consequences after combined humeral resurfacing and glenoid replacement.

Hypothesis: Combined humeral resurfacing and glenoid replacement induces a large increase in overall lateral offset, resulting in short-term clinical consequences.

Material and methods: A single-centre prospective study was started in November 2011. Consecutive patients scheduled for total shoulder arthroplasty with humeral resurfacing were included. The primary outcome measure was the change in lateral offset between radiographs obtained pre-operatively and 3 months post-operatively. The functional outcome assessed using the Constant score was compared between the groups with a lateral offset change <10 mm vs. ≥ 10 mm.

Results: From November 2011 to November 2014, 35 total shoulder arthroplasties with humeral resurfacing were performed in 32 patients with a mean age of 72.1 years (range, 55-86 years). Mean follow-up was 20±6 months (range, 12-31 months). Overall lateral offset was significantly greater post-operatively than pre-operatively (14±6 mm vs. 5±7 mm, p<0.0001), the mean difference being 8 mm (range, 2-20 mm). Post-operative range of motion was better in the group with an overall lateral offset ≥ 10 mm (p=0.0016).

Discussion: Combined humeral resurfacing and glenoid replacement markedly increases overall lateral offset. This increase is not associated with adverse effects on short-term function and may improve post-operative motion range. However, greater lateral offset elevates the loads on the glenoid implant, which may increase the risk of glenoid implant loosening and rotator cuff tearing. Close radiological monitoring is therefore imperative.

Level of evidence: IV, prospective cohort study

Key words: Total shoulder arthroplasty. Resurfacing. Lateral offset.