

**Prospective Study: Functional Results of the Reverse Shoulder Fracture Prosthesis Versus Conservative Treatment and Plate Osteosynthesis in Displaced Multipart Proximal Humerus Fractures**

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**Purpose:** Despite the PROFHER (PROximal Fracture of the Humerus: Evaluation by Randomisation) trial that proposes conservative treatment for all proximal humerus fractures (PHFs), the optimal treatment for displaced PHFs remains controversial, especially complex fractures with 3 or 4 displaced parts. PROFHER did not distinguish complex PHFs from mildly displaced fractures, and furthermore complex 3- and 4-part fractures were underrepresented. Sound evidence guiding us in the treatment of complex displaced multipart PHFs is therefore still required. Our hypothesis is that the reverse shoulder arthroplasty (RSA) reduces pain and increases functional results in comparison to conservative treatment in displaced multipart PHFs.

**Methods:** In this case-control study, patients were included with a multipart PHF that were treated with an RSA. At 1-year follow-up, three questionnaires were administered: Constant Shoulder Score (CSS), the Oxford Shoulder Score (OSS), and the Disabilities of the Arm, Shoulder and Hand (DASH) score. Pain was assessed through the visual analog scale (VAS). Patients were matched to patients treated conservatively for morphologically similar fractures (based on the Neer classification) and matched for age and comorbidities.

**Results:** 131 patients were treated with an RSA. Until now, 62 patients had a 1-year follow-up and were included. The median pain score was 2 (interquartile range [IQR] 4), median forward flexion 108° (IQR 53), external rotation 16° (IQR 26), and abduction 96° (IQR 43). The median score of CSS was 27 (IQR 21.75), the DASH score was mean 26.7 (IQR 23.3), and the OSS 39 (12.75).

**Conclusion:** Initial results of the study of the optimal treatment of complex, displaced PHFs are promising. To put results in perspective, the above-mentioned patient cohort will be matched to patients treated conservatively in this ongoing study.