of the humeral head. However, graft tears and their impact on clinical function outcomes following ASCR is still in contentious.

Methods: From 2013 to 2018, patients with MIRCTs who underwent ASCR were retrospectively evaluated. Among them 64 patients who met the inclusion and exclusion criteria were enrolled in this study. Polypropylene mesh was augmented to the fascia lata graft for 30 patients (group M). While 34 patients were without mesh augmentation to the graft, served as control group. The clinical outcome included range-of-motion (ROM), American Shoulder and Elbow Surgeons (ASES) score and visual analog scale (VAS) were assessed preoperatively and at the final follow-up. The radiological parameters included the AHD (Acromio-humeral distance), rotator cuff arthropathy stage, and fatty infiltration. The graft healing was evaluated using MRI.

Results: Both groups showed improvement of clinical and radiological outcomes at the final follow-up. Group M was with higher ASES score improvement (29.1 ± 15.8) compared to control group (18.1 ± 15.9) (p=0.006). The forward flexion and external rotation were improved for Group M (36% and 41%) and control group (27% and 23%) (p=0.003, p=0.004). The graft healing rate was significantly superior in group M (83.3%) compared to control group (58.8%) (p=0.039). AHD was significantly superior in group M (9.08 ± 2.43 mm) compared to control group (6.36 ± 1.80 mm) at the final follow up. Subgroup analysis revealed that failed graft patients were with progression of fatty infiltration and without improvement of rotator cuff arthropathy stage. Healed graft patients were with higher improvement on functional outcome (ASES and forward flexion).

Conclusions: ASCR with mesh augmentation improves graft healing rate. Patients with healed graft had higher improvement on functional outcome. ASCR with mesh augmentation is with encouraging result as to restore superior stability of the shoulder joint.

#535 THE ROLE OF THE GLENOID VERSION IN GLENOHUMERAL INSTABILITY

Onur Tunali[a], Gokhan Karademir[b], Ali Ersen[c], ***Ata Can Atalar[a],*** *[a] Acibadem Maslak Hospital, Istanbul, Turkey; [b] Istanbul Avcilar Murat Koluk State Hospital, Istanbul, Turkey; [c] Istanbul Faculty of Medicine, Istanbul University, Istanbul, Turkey*

Aim: In this study, it was aimed to evaluate the role of the glenoid version in anterior and posterior glenohumeral instability.

Background: Increased glenoid retroversion is considered to be associated with posterior glenohumeral instability. However, the relationship of the glenoid version with anterior glenohumeral instability is controversial.

Methods: Between April 2011 and January 2020, the glenoid versions of 82 patients (14 Female / 68 Male) who developed anterior or posterior glenohumeral instability and treated surgically were measured by Friedman method using MRI images. A control group was created with patients of similar age group without instability. Anterior glenohumeral instability (50 patients, mean age = 32.61 ± 9.4), posterior glenohumeral instability (32 patients, mean age = 39.47 ± 12.75) and control group (50 patients, mean age = 33.04 ± 8.35). The patients' glenoid version measurements were compared using the Student-t test.

Results: The mean of the glenoid version was -2.63 ± 9.42° in the anterior glenohumeral instability group, it was -4.77 ± 7.29° in the posterior glenohumeral instability group and it was -3.11 ± 0.36° in the control group. There was no significant difference in the glenoid versions measured in the anterior glenohumeral instability group compared to the control group (p = 0.54). However, glenoids were significantly retroverted in patients in the posterior glenohumeral instability group compared to the control group (p = 0.04).

Conclusions: The findings of this study suggest that increased glenoid retroversion is associated with posterior glenohumeral instability. On the other hand, there was no significant relationship between anterior glenohumeral instability and glenoid version.

#538 SURVIVAL ANALYSIS AND CEMENTATION CRITERIA FOR SUCCESS ON TOTAL ELBOW ARTHROPLASTY – A MONO-CENTER ANALYSIS OF 31 CASES

Arnaldo Sousa, *João Rosa, Luis Coutinho, Claudia Rodrigues, Marta Santos-Silva, Alexandre Pereira, Miguel Trigueiros, César Silva, Centro Hospitalar Universitário do Porto, Orthopedics Department, Porto, Portugal*

Aim: The objective of this study was to evaluate the outcome of our series and if specific radiological cementation criteria may predict clinical outcome.

Background: Total elbow arthroplasty (TEA) has gained popularity in recent years, with most surgeons favoring cemented elbow prostheses.

Methods: All patients submitted to cemented TEA by the same surgical team were retrospectively reviewed over a 10-year period in an institution. Demographic and clinical variables were evaluated. All radiographs performed in the immediate postoperative period were blindly evaluated by an experienced surgeon and classified according to specific cementation criteria. The radiographs of the last medical appointment were also blindly evaluated by the same surgeon for possible signs of loosening, with a minimum follow-up of 3 years. The complication rate, revision rate, average prosthesis survival and QuickDASH Score were also evaluated. Statistical analysis was then performed to evaluate whether cementation quality had an influence on clinical and radiological results.

Results: A total of 31 TEA were identified, being rheumatoid arthritis the most common indication. Cubital cementation was adequate in 38% of cases and humeral cementation was adequate in 48% of cases. Patients with an inadequate or marginal ulnar cementation were 9. 2 times more likely of having a cubital loosening (p =0.032; OR = 9.2 [95% CI 1-91]). However, curiously, inadequate or marginal humeral cementation did not have a statistically significant association with the presence of humeral loosening (p = 0.27). In our sample, there were 4 cases of aseptic loosening requiring revision. In all of them there were marginal or inadequate cementations in one of the components. There was no need for revision in the cases with adequate cementation in both components.

Conclusions: This work highlighted the importance of adequate cementation and radiological evaluation. It should be noted that despite the experienced team of elbow surgeons, marginal cementation was found in a large number of cases. From this study, we can conclude that poor ulnar cementation may predict radiological loosening and eventual need for revision. However, this loosening does not correlate with the patient's clinical outcomes, which is why many patients with radiological loosening had no need for revision.

#539 RADIAL HEAD OSTEOSYNTHESIS WITH LOW-PROFILE LOCKING PLATES: A PROSPECTIVE ANALYSIS OF 26 PATIENTS

Sebastien Prigent, *Marianna Patrignani, Ciro Villani, Giuseppe Giannicola, Rome, Italy*

Aim: To evaluate clinical and radiographic results of osteosynthesis (ORIF) with low-profile locking plates (LPLP) in unstable or comminuted radial head fractures (RHF).

Background: Surgical treatment of complex RHF remains controversial. Historically, headless compression screws have been related to secondary displacement, while ORIF with plates has been related to chronic pain and rotational stiffness. Consequently, several surgeons have recommended radial head replacement or resection in RHF with more than 3 fragments. However, mid- and long-term complication rates of these procedures are consistent. In recent years, a new generation of LPLP has been introduced to improve implant stability and reduce hardware impingement, though few studies have investigated this topic.