Twenty-nine players (mean age, 14 [range, 11-16] years) underwent arthroscopic debridement: 5 were pitchers, 6 were catchers, 13 were infielders, and 5 were outfielders. Mean follow-up duration was 26 (range, 24-66) months. Timmerman-Andrews score at the latest follow-up was 188 (range, 165-200) points. Mean defect size was 44.6±8% (range, 22.6%-86.21%). Mean superior angle was 91.82° (range, 69.80-110.90) degrees, mean inferior angle was 22.41° (range, 32.53-55.33) degrees, and mean defect angle was 69.41° (range, 47.40-135.04) degrees. Timmerman-Andrews score was positively correlated with the inferior angle (r=0.494, p<0.01) and negatively correlated with the defect angle (r=-0.431, p=0.020). For each sub-score considered, pain and sagittal arc of motion were positively correlated with the inferior angle (r=0.467, p=0.011, r=0.387, p=0.038), and flexion contracture was negatively correlated with the defect angle (r=-0.398, p=0.033). Conclusion: Posterior or large osteochondral defects of the humeral capitellum on preoperative reconstructed CT sagittal images were associated with poor outcomes of arthroscopic debridement for capitellar OCD in adolescent baseball players.

Category: Elbow/Wrist/Hand

Anconeus Sparing Minimally Invasive Approach For Lateral Ulnar-Collateral Ligament Reconstruction In Posterolateral Rotatory Instability Elbow Instability Shows Excellent Clinical Results

Abstract ID# 21946

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Summary: The anconeus sparing minimally invasive technique for posterolateral stabilization of the elbow using a triceps tendon autograft is an effective and safe treatment for chronic posterolateral instability of the elbow.

Data: Introduction: Surgical treatment helps restore stability to the elbow in patients with posterolateral rotatory instability (PLRI). The anconeus muscle is one of the most important active stabilizers against PLRI. A minimally invasive anconeus sparing approach for lateral ulnar collateral ligament (LUCL) reconstruction using a triceps tendon autograft has been previously described. The purpose of this study was to evaluate the outcome of this intervention and identify risk factors that influenced the clinical and patient reported outcomes. The hypothesis is that the LUCL reconstruction will lead to a significant more stable elbow. Methods: 61 patients with chronic PLRI and no previous elbow surgery that underwent surgical reconstruction of the LUCL using a triceps tendon autograft in a minimally invasive anconeus sparing approach during 2012 and 2018 were assessed. Outcome measures included a clinical examination and the Oxford Elbow Score (OES), the Mayo Elbow Performance Score (MEPS), the Disability of the Arm and Shoulder and Hand (DASH) questionnaires and the Visual analogue scale (VAS) for pain. Patient satisfaction was assessed with the Subjective Elbow Value (SEV) and school grade. Clinical stability of the elbow was evaluated with the Push-up Test, the Pivot-shift test, Stand-up test and the pincer grip. Integrity of the common extensor tendons and centering of the radial head were assessed on standardized MRIs. Results: The average age of the patients was 52 years with a mean follow up of 53 months (range 27-86). Clinical examination after surgery showed no clinical signs of instability (P<0.001) and a non-significant improvement in range of motion (P>0.05). OES, MEPS, DASH and VAS averaged 40 out of 48 points (SD: 10), 92 out of 100 (SD:12), 9 out of 100 (SD: 14) and 1 (SD:2), respectively; all corresponding with good or excellent outcomes. Only one patient had to undergo revision surgery due to pain and there were no postoperative complications in this cohort. Superior functional results were observed in patients without radius subluxation on the MRI with a confirmed rupture of the LUCL. Conclusion: The anconeus sparing minimally invasive technique for posterolateral stabilization of the elbow using a triceps tendon autograft is an effective and safe treatment for chronic posterolateral instability of the elbow with substantial improvements in elbow function and pain relief.

Category: Elbow/Wrist/Hand

Relationship Between The Content Of Autologous Platelet-Rich Plasma And Clinical Efficacy Of Tennis Elbow Treatment Six Months After Injection

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Summary: Evaluation of the relationship between cellular content, growth factors, inflammatory cytokines in autologous platelet-rich plasma and clinical efficacy 6 months after its injection into the lateral epicondyle region of patients with Tennis Elbow.

Data: Background Tennis Elbow (TE) is a commonly used term to describe tendinopathy of proximal attachment of extensor muscles to the lateral humeral epicondyle. In cases where severe pain limits daily functioning for a longer period, patients desperately seek for effective solutions. Many treatments have been developed, the effectiveness of which is highly controversial. One of such methods is the injection of autologous platelet-rich plasma (PRP). Its action is based on the local administration of high concentrations of platelet-derived growth factors, which are supposed to stimulate healing and regeneration of tissues. The aim of the study was to assess the relationship between the cellular composition and cytokine content in PRP and the clinical effectiveness of injection therapy in patients with TE. Material and Methods Thirty patients diagnosed with TE were recruited for the study and received one injection of 2 ml of leukocyte-rich PRP to the lateral epicondyle region. All PRP samples were analyzed for cellular content and the content of several inflammatory cytokines and selected growth factors including Transforming growth factor-β1, Epidermal growth factor (EGF), Fibroblast growth factor-basic, Vascular endothelial growth factor, Hepatocyte growth factor, Platelet-derived growth factor. The clinical efficacy of the treatment, before the injection and after 6 months was assessed in terms of the mean daily pain intensity measured by Visual Analog Scale (VAS), pain intensity during provocation tests, the pressure pain threshold (PPT), Subjected Elbow Value (SEV), strength of the grip and the muscle groups during wrist extension and supination, and by the Disability of Arm, Shoulder and Hand (DASH) questionnaire. A statistical analysis of the correlations between biologically active components in PRP and the size of improvement in each parameter, was performed. Results After six months all measured outcomes significantly improved. Twenty-five (83%) patients reached a minimal clinically important difference in decrease in pain intensity, and 23 (76%) in functional improvement measured by DASH. At the final end point symptoms completely disappeared in 10 patients. One patient resigned from the study after 3 months, due to dissatisfaction with the results of the treatment. The positive low significant Pearson’s correlation was found between PLT concentration in PRP and the size of improvement measured by SEV (r=–0.40). Significant low positive Spearman’s correlation between EGF concentration and pain decrease (r=0.42) was found. Significant low negative Spearman’s correlations between functional improvement measured by DASH and several inflammatory cytokines were found: Interferon-a2 (r=–0.39), Interferon-7 (r=–0.46), Monocyte Chemoattractant Protein-1 (r=–0.39), Interleukin-17A (r=0.46), and Interleukin-33 (r=–0.43). Conclusion The study showed significant correlations between the content of biologically active components in PRP and the clinical outcomes of TE treatment after 6 months. The obtained results suggest the need for further research aimed at reducing the content of inflammatory cytokines and increasing the growth factors in PRP.

Category: Elbow/Wrist/Hand

Visualization of the Dorsolateral Ulnohumeral Joint Space Is Reliable to Indicate Overlengthening in Radial Head Arthroplasty

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Summary: Overlengthening in radial head arthroplasty can reliably be avoided by