including shoulder function by the Constant-Murley Score (CMS); Subjective pain by visual analogue scale (VAS score=0[none]-100[intolerable]), and QOL by SF-12, were collected before the surgery (Baseline) and at follow-ups 1-3-and-6 months’ post-RCAS (FU1, FU3M, FU6M). The %patients achieving minimal clinical important difference ([MCID] =15) and patient acceptable symptom state ([PASS] =17) was calculated. Groups were compared by superiority 2-sample t-test and chi-square. Results: Baseline scores were not significantly different between groups. As expected, post-RCAS, the CMS improved over time and was similar for both groups. However, compared to sham, PBM significantly accelerated the reduction in subjective pain at 3 and 6 months (Change over baseline in VAS score, mean±SD, PB vs sham: FU3 32±33 vs 16±27, p=0.040; FU6 41±36 vs 23±26, p=0.038), with a significantly higher proportion of patients achieving MCID at 3 months (76%vs 48%, p=0.027) and PASS at 6 months (48%vs 23%, p=0.044). PBM also significantly improved the reported QOL at 6 months (physical component 6.8±1.25 vs 4.8±0.6, p=0.031; Mental component 8.5±9.1 vs 6.2±1.2, p=0.032). Discussion; Self-applied photobiomodulation was found to significantly accelerate reduction in pain and improvement in quality of life following rotator cuff arthroscopic surgery. These findings may indicate the usefulness of photobiomodulation for rehabilitation in other orthopedic surgeries. Sponsored by Erica Carmel Ltd.

Category: Shoulder - Rotator Cuff

Short-term Outcomes of an “All-in-One” Interpositional Scaffold Anchor Implant for Rotator Cuff Tendon Repair: A Prospective Multicenter Study

Abstract ID# 21626
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Summary:
The “all in one” interpositional scaffold anchor implant displayed good clinical efficacy, high MRI-confirmed rotator cuff tendon repair healing, excellent patient outcomes, and good survivorship.

Data:
Purpose Historically, most rotator cuff tendon repair interventions have focused on “time zero” biomechanical repair strength characteristics. The primary study objective was to evaluate the survivorship of arthroscopic rotator cuff tendon repair using a novel “all in one” interpositional scaffold anchor implant designed to vent biological fluids to the repair site. A previous ovine study revealed superior biological healing and biomechanical load to failure results using this device compared to control conditions. The secondary study objective was to determine device clinical efficacy based on postoperative shoulder range of motion (ROM), shoulder muscle strength, clinical outcomes scores, and overall device safety. Methods A prospective multicenter clinical trial was performed at 7 different sites enrolling consecutive patients with 1.5 cm to 4 cm moderate-to-large size full thickness rotator cuff tendon tears that met study inclusion criteria. Seventy-one patients (64.8% men) were enrolled for surgical repair using the implant. Average subject age was 60.5 years (range = 40 to 76 years) and 11.3% were smokers. Clinical shoulder evaluations were performed using the American Shoulder and Elbow Society (ASES) score, the Veterans Rand-12 (VR-12) physical and mental health scores, and visual analog scale (VAS) shoulder pain and instability questions at 3 month, 6 month, and 1 year follow-up. At the 6 month follow-up, repeat MRI was also performed and reviewed by a fellowship-trained, independent radiologist. The median duration during which subjects were unable to perform daily activities because of their injured shoulder was 60 days (range = 0 to 365 days). Median symptom duration was 15 months (range = 0.5 to 120 months). Thirteen subjects had a normal biceps tendon at time of rotator cuff repair while 44 underwent tenodesis, and 14 underwent tenotomy. Results By the 1 year follow up, two device failures (97.0% device survival rate) had occurred, 10 subjects had been lost to follow up, and 1 death occurred (unrelated to the study). Patient self-reported outcome scores displayed continual improvement from study entry at each follow up period. The median preoperative ASES score of 44.2 improved to 92.5 at 1 year. Similar findings were observed with the median preoperative VAS pain score of 5.5 improving to 0.5 at 1 year, and the median preoperative VR-12 physical health score improving from 35.3 to 49.2 at 1 year. The median VR-12 mental health score did not display significant changes between the preoperative and 1 year follow up (53.7 and 57.0), respectively. The shoulder instability VAS score improved from the preoperative median score of 3.2 to 0.9 at 1 year. Shoulder ROM displayed a median active forward elevation improvement (from 116.1’ to 162.1’), and median adduction external rotation improvement (from 39.1’ to 57.3’). Between preoperative and 1 year follow up evaluations. At 6 months post-surgery, 52 subjects underwent repeat MRI. Sixteen subjects had experienced a rotator cuff tendon re-tear (31%). However, only 3 re-tears occurred at the footprint repair site (19% of all re-tears), with the rest occurring in tendon medial to the footprint. This observation confirmed that the previously torn tendon at the repair site had healed to the bone. One device failure was associated with an infection requiring implant removal, irrigation and intravenous antibiotic administration. No other major device related complications were observed. Conclusion Findings confirm the clinical efficacy, high healing rate, and safety of this “all in one” interpositional scaffold anchor implant for moderate-to-large size rotator cuff tendon tear repair. Significant shoulder function and symptom improvements were observed at each follow up relative to the preoperative state with good survivorship and minimal implant related complications.

Category: Shoulder - Rotator Cuff

The Arthroscopic Assisted Lower Trapezius Transfer For Non-Repairable Postero-Superior Rotatorcuff Lesions. Clinical Comparison With Latissimus Dorsi Transfer

Abstract ID# 21942
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Summary:
The LTT showed significant improvement in active ROM and SSV and outperformed the LDT in these categories.

Data:
Introduction: The aim of this study is the analysis of a cohort of patients who have been treated due to a non-repairable postero-superior rotator cuff (RC) tear with an arthroscopic assisted lower trapezius transfer (LTT). This cohort will be compared to a cohort of patients having been treated for the same pathology with Latissimus dorsi Transfer (LDT). Biomechanical studies have shown a better abuction and external rotation moment arm for the LTT in comparison to the LDT. Therefore, the hypothesis of this study was that the LTT would provide better functional results in comparison to the LDT.

Methods: Between 2013 and 2020 50 patients were treated with LDT and between 2018 and 2020 21 with LTT. For better comparability of the patient groups, a matched pairs analysis was carried out, in which 17 statistical pairs (34 patients: 30 males, 4 females; age (LDT): 55-6 years, age (aLTT): 55-7 years) could be included. Matching criteria were same sex, age + -3 years, tear size according to Bankart +1, and retraction size according to Patte +1. The LDT was performed in a double incision technique and the LTT was performed arthroscopically assisted using an autologous semitendinosus interposition transplant. Clinical evaluation was included passive and active ROM and Constant-Score (CS), DASH, WORK, SSV, ADLEIR, OSS. Results: At final follow up of 43-18 months (LDT) vs 18-7 months (LTT) the CS improved in the LDT from 42 to 57 points (p<.01) and in the LTT group from 48 to 63 points (p<.01). Mean Flexion improved in the LDT group from 112° to 134° (n.s.) and in the LTT group from 112° to 122° (n.s.). In the LTT group Flexion improved from 59° (p<.001) and abduction from 112° to 156° (p<.001). Mean external rotation improved in the LDT group from 19° to 29° (n.s.) and in the LTT group from 29° to 44° for the LTT (p<.05). Score results were: CS: 64 (LDT) vs 70 (LTT) (n.s.); DASH 19 (LDT) vs 12 (LTT) (n.s.); WORK 77 (LDT) vs 77 (LTT) (n.s.); SSV 75% (LDT) vs 77% (LTT) (n.s.); ADLEIR 33 (LDT) vs 33 (LTT) (n.s.), and OSS 23 (LDT) vs 19 (LTT) (n.s.). Conclusion: Improved score results and functional improvement was seen in both groups. The LTT showed significant improvement in active ROM and SSV and outperformed the LDT in these categories.

Category: Shoulder - Rotator Cuff

Leukocyte-Poor Platelet Rich Plasma As An Adjuvant Of Arthroscopic Rotator Cuff Repairs Reduces Retears Rates But Does Not Improve Functional Outcomes A Double-Blind Randomized Controlled Trial

Abstract:
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