Clinical Comparison of Arthroscopic versus Open Repair of Triangular Fibrocartilage Complex Tears

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Introduction: To determine if traumatic triangular fibrocartilage complex (TFCC) tears treated by arthroscopic repair will have improved functional outcome scores, range of motion, grip strength, and pain relief compared to those repaired using an open technique.

Materials and Methods: From 1997-2006, a cohort study of 75 patients who underwent repair of traumatic TFCC tears was conducted. Thirty-six patients underwent arthroscopic TFCC repair and 39 patients underwent open repair. One patient was lost to follow-up. Evaluation included range of motion, grip strength, pre- and post-operative Mayo Modified Wrist Score (MMWS), and patient-reported Disability of the Arm Shoulder Hand (DASH) and Visual Analog score (VAS). Data was analyzed using Chi-square or two-sided t-test, significance set at p < 0.05. Power analysis was set at 80%.

Results: Mean follow-up was 42.9 ± 10.8 months. Mean MMWS improved 6.5 points ± 19.9 following surgery. Fifty-seven percent of patients improved at least one level in the pain score. No statistical difference was found between open and arthroscopic repair in the improvement of MMWS or VAS pain scores (p=0.612, p=0.467 respectively). There was increased post-operative nerve pain (ulnar nerve superficial branch) in the open group (35.8%) compared to the arthroscopic group (22.2%) but this was not found to be statistically significant (p=0.17). Re-operation for distal radioulnar joint instability was performed in 17.3% of patients. No statistical association with surgery type and re-operation rate for instability (p=0.418). A statistically significant association between female gender and higher rate of total re-operation was found (p=0.003).

Discussion: (1) No statistical difference in clinical outcomes following open versus arthroscopic TFCC repair. (2) There was an increase incidence nerve damage with open repair compared to the open group (p=0.170). (3) Following TFCC repair, 17.3% of patients required re-operation for distal radioulnar joint instability in this sample population. (4) A statistically significant association was found between total re-operation rate with female gender (p=0.003).