

# Differences in Thirty-Day Morbidity and Mortality in Open and Arthroscopic Surgery of the Triangular Fibrocartilage Complex

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## INTRODUCTION

- TFCC injuries are the most common ligamentous injuries in the wrist and often occur in combination with distal radius fractures
- Typically caused by forced axial loading, ulnar deviation, or rotational forces
- Central tears in the TFCC can cause pain, but peripheral tears are more likely to cause instability
- Open techniques have been described for many years, while arthroscopic repairs are a more novel approach
- A paucity of literature comparing the two techniques exists, and to date, no technique can be recommended over the alternative regarding outcomes

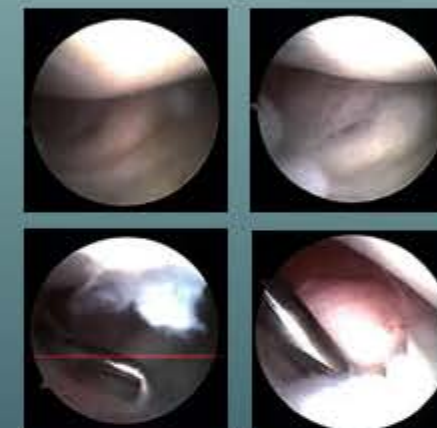
## METHODS

- A NSQIP database query was performed to include surgeries from 2015-2018
- Patients were included in the study if their procedure matched either the CPT code 25107 or 29846
- 25107 - Arthrotomy, Distal radioulnar joint for repair of triangular cartilage complex
- 29846 - Arthroscopy, Wrist, Surgical; excision and/or repair of triangular fibrocartilage and/or joint debridement
- The query returned 1006 arthroscopic procedures and 113 open procedures which were included in the study
- Standard 2-tailed t-test was used to assess each group for statistical difference using a threshold of  $p < .05$

## RESULTS

- Average operative time was significantly less in the arthroscopic group 63.4 vs. 82.64 minutes for arthroscopic and open, respectively ( $p < .001$ )
- No significant difference in length of stay
- Overall morbidity slightly higher in open cohort (0.56%)
- No significant difference in incidence of infection between the two groups
  - Total of 4 superficial infections in the arthroscopic group, 0 deep infections
  - No reported infections in the open cohort
- No episodes of PE, stroke, cardiac arrest, MI, transfusion, or death within 30 days in either cohort.
- One episode of post operative pneumonia in the open group ( $p < 0.001$ )
- One instance of post operative UTI, two instances of post operative sepsis, two readmissions, and 2 reoperations in the arthroscopic group which were not significant ( $p > 0.05$ )

	LEVENE'S TEST FOR EQUALITY OF VARIANCES		T-TEST FOR EQUALITY OF MEANS						
	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
								Lower	Upper
WORK RELATIVE VALUE UNIT			0.000	1117	0	-0.81	0	-0.81	-0.81
ESTIMATED PROBABILITY OF MORTALITY	0.003	0.956	-0.152	1117	0.879	-0.00004	0.00027	-0.00057	0.00049
ESTIMATED PROBABILITY OF MORBIDITY	75.470	0.000	-17.363	1117	0.000	-0.00561	0.00032	-0.00624	-0.00497
TOTAL OPERATION TIME	15.146	0.000	-5.106	1117	0.000	-19.255	3.771	-26.655	-11.856
LENGTH OF TOTAL HOSPITAL STAY	0.649	0.421	0.374	1117	0.708	0.054	0.143	-0.228	0.335
NUMBER OF SUPERFICIAL INCISIONAL SSI OCCURRENCES	1.816	0.178	0.671	1117	0.502	0.004	0.006	-0.008	0.016



## CONCLUSIONS

- Open and arthroscopic approaches for debridement and repair of the TFCC are both very safe with few short-term complications
- Slightly higher morbidity within the open group is statistically significant but likely not clinically relevant, with a difference in incidence of only 0.56%
- Our cohort population was skewed towards arthroscopic treatment, further underscoring its utility as the gold-standard for treatment of TFCC pathology
- On average, arthroscopic surgery is significantly faster which should be taken into consideration in the context of patient suitability for the OR as well as resource utilization and cost
- Ultimately, surgeon preference and comfort with an approach should dictate the surgical plan, as both modalities show a good safety profile and outcomes