

# Increased Risk of Complications in Trapeziectomy with Ligament Reconstruction and Tendon Interposition Compared with Trapeziectomy Alone

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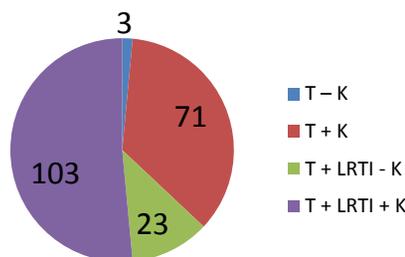
## Objectives

- In the treatment of basal joint arthritis of the thumb, recent studies suggest long term outcomes are equivalent with regard to long term pain, mobility, and strength, in patients either undergoing trapeziectomy alone or trapeziectomy with ligament reconstruction and tendon interposition (LRTI)<sup>1,2</sup>.
- The goal of this study was to investigate risk factors for complications in carpometacarpal (CMC) arthroplasty.
- These risk factors include type of operation performed, age, smoking, diabetes, and the use of Kirschner wire (k-wire) intraoperatively.

Table 1. Patient and case demographics.

Patient Characteristics	Number of Patients
Male	40
Female	139
Age, Mean	59.37
Right Thumb	102
Left Thumb	98

Figure 1. Distribution of operative techniques.



T = trapeziectomy; K = use of kirschner wire; LRTI = ligament reconstruction with tendon interposition.

## Results

- Seventy hands had a post-operative complication.
- Ten complications considered major requiring antibiotics, reoperation, or complex regional pain syndrome.
- Sixty complications considered minor complications included pain, swelling, stiffness, paresthesias, symptomatic subsidence, and symptomatic tendonitis.
- Of patients receiving LRTI, 52 (41%) developed complications, LRTI is associated with an increased risk for total complications (RR=1.69, P=0.02).
- Increased risk for minor complications (RR=1.76, P=0.03),
- No statistically significant increase in risk for major complications.
- No statistically significant association was found with regard to smoking, diabetes, age, or use of k-wire as risk factors for complications.

## Methods

- Retrospective chart review of five surgeons at a single institution who had performed CMC arthroplasties from 2006-2012.
- 200 thumbs in 179 patients underwent either simple trapeziectomy with or without k-wire stabilization, or trapeziectomy and LRTI with or without k-wire stabilization.
- Data collection included patient demographics, operation type, medical history, and outcomes involving any adverse events, paying attention to those necessitating reoperation, antibiotics, or those who developed complex regional pain syndrome.

Table 2. Risk factors complications. \*Statistical significance reached associating LRTI with minor complications and total complications.

Risk Factor	Total Number (n=)	Major complications	Minor complications	Total complications	P value
K-wire	174	8	53	61	0.96
Concomitant surgeries on same hand	64	2	20	22	0.89
Diabetes	31	1	11	12	0.63
Smoking	84	4	23	27	0.47
LRTI*	126	7	45*	52*	0.02*
Age>65	52	1	20	21	0.33
Male sex	45	4	9	13	0.35

## Conclusions

Patients undergoing trapeziectomy with LRTI have an increased incidence of overall complications when compared with trapeziectomy alone. These results suggest an advantage of simple trapeziectomy in providing equivalent long term outcomes with fewer complications.

## References

- Gangopadhyay S, McKenna H, Burke FD, Davis TR. Five- to 18-year follow-up for treatment of trapeziometacarpal osteoarthritis: a prospective comparison of excision, tendon interposition, and ligament reconstruction and tendon interposition. *J Hand Surg Am.* Mar 2012;37(3):411-417.
- Nilsson A, Wiig M, Alnehill H, et al. The Artelon CMC spacer compared with tendon interposition arthroplasty. *Acta Orthop.* Apr 2010;81(2):237-244.