Partial trapeziectomy preserving ulnar osteoligamentous complex versus total trapeziectomy: a biomechanical study of thumb collapse.

Trapézectomie partielle avec préservation du carrefour ostéo-ligamentaire médial versus trapézectomy totale: étude biomécanique du collapsus trapézien.

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The authors declare no conflict of interest related to this study.
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CONTEXT

1\textsuperscript{st} CMC osteoarthritis surgical treatments
Prosthesis
Partial trapeziectomy
Total trapeziectomy +/- interposition +/- ligamentoplasty:
  - International Gold Standard
  - Pantrapezial osteoarthritis

TRAPEZIAL SPACE COLLAPSE:
  - Controversies on clinical relevance but explains some failures
  - Not modified by ligamentoplasty

INTRODUCTION

METHODS

DISCUSSION

CONCLUSION & CASE

RESULTS

Logli et al 2017

Mouvement of Trapezium.
Ladd et al 2012

Trapeziectomy with tendon interposition (A) associated with ligament reconstruction (B). Toma et al 2018.

Post-trapeziectomy instability.
Logli et al 2017
Partial Trapeziectomy with preservation of the ulnar tubercle along with the insertions of the *Ulnar osteoligamentous Complex (PTUC)* would reduce thumb collapse compared to total trapeziectomy (TT).
HYPOTHESIS

Partial Trapeziectomy with preservation of the ulnar tubercle along with the insertions of the *Ulnar osteoligamentous Complex (PTUC)* would reduce thumb collapse compared to total trapeziectomy (TT).

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**HYPOTHESIS**

Partial Trapeziectomy with preservation of the ulnar tubercle along with the insertions of the *Ulnar osteoligamentous Complex (PTUC)* would reduce thumb collapse compared to total trapeziectomy (TT).

**LIGAMENTOUS INSERTIONS ON THE ULNAR TUBERCLE**

1. Ulnar collateral ligament *
2. First to second Intermetacarpal ligaments
3. Dorsal part *
4. Volar part *
5. Trapezio-2nd metacarpal ligament *
6. Trapezio-3rd metacarpal ligament *
7. Volar and dorsal trapeziotrapezoid ligament *
8. 1st dorsal trapeziometacarpal ligament*

**RESULTS**

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**METHODS**

**DISCUSSION**

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1\textsuperscript{st} and 2\textsuperscript{nd} metacarpus dissection with preservation of \textit{Ulnar osteoligamentous Complex}
A) Thumb in resting position: the thumb was placed below a bar in adduction

B) Thumb under loading

Loading on 4 groups of muscles
1 - adductor pollicis
2 - flexor pollicis brevis + abductor pollicis brevis + opponens pollicis
3 - flexor pollicis longus
4 - abductor pollicis longus
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**STRENGTH**

Simple technic: No tendon harvesting nor implant
Possibility of totalization
Decrease of shortening (10-20% of trapezial height)

**LIMITS**

Level of evidence: IV - Cadaveric study
2D evaluation of shortening
CONCLUSION

Partial Trapeziectomy with preservation of the Ulnar Tubercle along with the insertions of the Ulnar osteoligamentous Complex (PTUC) significantly reduce thumb collapse compared to total trapeziectomy.

Stabilizing Role of the ligaments inserted on the ulnar tubercle of the trapezium
- Intermetacarpal volar and dorsal
- Ulnar collateral ligament
- 1s dorsal trapeziometacarpal ligament

RESULTS

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MAIN INDICATIONS

- Peritrapezial osteoarthritis (OA)
- Young patients with isolated trapeziometacarpal OA

Preliminary Clinical Experience

Preoperative  12M Follow-up

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Thank you for your attention