



Jeffery Yao, MD
Andre Eu-Jin Cheah, MD, MBA

Alexander W. Hook, MA
Joshua Alan Parry, MD
Sanjeev Kakar, MD

Pat B. Roman, MD
Joshua D. Linnell, MD
John B. Moore, MD

Mihir J. Desai, MD
David M. Brogan, MD
Marc J. Richard, MD
Suhail K. Mithani, MD
Fraser J. Leversedge, MD
David S. Ruch, MD

Joshua Alan Parry, MD*
Sanjeev Kakar, MD*

Ryan D. Endress, MD
Sanjeev Kakar, MD

The CMC Mini TightRope construct is an innovative way to suspend the thumb metacarpal after partial or complete trapezial resection and provides support to maintain the thumb and index metacarpals in the proper relationship. Scientific support for the CMC Mini TightRope construct continues to grow as the advantages of this unique device are put into practice.

New scientific articles highlighting the benefits of the CMC Mini TightRope construct:

Mean 5-year follow-up for suture button suspensionplasty in the treatment of thumb carpometacarpal joint osteoarthritis [published online March 2017].

J Hand Surg Am. doi:10.1016/j.jhsa.2017.03.011.

- “Results show that improvement in strength may also be expected over time when using SBS after trapeziectomy for the treatment of thumb CMC joint OA.”
- “Favorable results (improvement in ROM and pain relief) remain durable over time.”

Mini Tightrope fixation versus ligament reconstruction – tendon interposition for maintenance of post-trapeziectomy space height: a biomechanical study.

J Hand Surg Am. 2016;41(3):399-403. doi:10.1016/j.jhsa.2015.12.007.

- “After cyclic axial loading was applied to stress the trapezial cavity, the space had completely collapsed for the LRTI with tenodesis group but remained at 11 ± 2 and 10 ± 2 mm for the single and dual Mini TightRopes, respectively.”
- “This study demonstrates that patients who undergo suture suspension arthroplasty may be able to move earlier because of the immediate stability the construct affords.”
- “The trapezial space remained present in all single and dual Mini TightRope specimens after the completion of 43,200 cycles in all specimens. There were no cases of Mini TightRope suspension suture breakage.”

Trapeziectomy arthroplasty with suture suspension: short- to medium-term outcomes from a single-surgeon experience.

J Hand Surg Am. 2016;41(1):34-39.e1. doi:10.1016/j.jhsa.2015.10.010.

- 18 patients with average follow-up of 20 months. Patients started ROM exercises at 5 days post-op
- “This technique also provided an increase in grip strength and key pinch with return of range of motion early in the postoperative period.”

Biomechanical comparison of suture-button suspensionplasty and LRTI for basilar thumb arthritis.

Hand (NY). 2016;11(4):438-443. doi:10.1177/1558944716643119.

- “In a cadaveric model, SBS demonstrates greater resistance to metacarpal subsidence with immediate loading compared with LRTI.”
- “Although this is not a study of cost analysis, the SBS does require the purchase and additional cost of an implantable device. However, by not having to harvest the FCR tendon for an LRTI, the overall operating room (OR) time may be shortened, thus decreasing OR costs.”

Dual mini Tightrope suspensionplasty for thumb basilar joint arthritis: a case series.

J Hand Surg Am. 2015;40(2):297-302. doi:10.1016/j.jhsa.2014.10.057.

- “Dual Mini TightRope suspensionplasty resulted in reduced pain levels, increased grip and pinch strength and preserved range of motion.”
- “Radiographs demonstrated maintenance of trapezial space height at an average of 17 months.”
- “No cases of impingement or fracture of the first and second metacarpal bases.”

Double tightrope for basilar thumb arthritis.

J Hand Surg Am. 2014;39(12):2512-2516. doi:10.1016/j.jhsa.2014.09.012.

- Presentation of the dual Mini TightRope technique with imbrication of the flexor carpi radialis and abductor pollicis longus tendons as reinforcement of the construct.

Kristo Kask, PhD
Giorgio Pivato, MD
Alessandro Pozzi, MD
Francesca Susini, MD
Loris Pegoli, MD

Jeffery Yao, MD
Yohan Song, BA

Yohan Song, BA
Christopher A. Cox, MD
Jeffery Yao, MD

David Jones, Jr.
Peter Rhee
Alexander Shin
Sanjeev Kakar, MD

Christopher A. Cox, MD
Dan A. Zlotolow, MD
Jeffery Yao, MD

Jeffery Yao, MD
Dan A. Zlotolow, MD
Ryan Murdock, MD
Matthew Christian, BS

Minimally invasive procedure for the stabilization of the painful “prearthritic” carpometacarpal joint of the thumb.

Tech Hand Up Extrem Surg. 2014;18(4):194-198. doi:10.1097/BTH.0000000000000066.

- “The Mini TightRope technique for CMC laxity without arthritis is a comparatively safer, less invasive and less aggressive procedure.”
- “Minimally-invasive technique has smaller wounds and a minimal amount of scar tissue without a donor site.”
- “The technique does not burn any bridges in undertaking further surgeries in case the clinical situation worsens or fails to show satisfactory improvement.”

Suture-button suspensionplasty for thumb carpometacarpal arthritis: a minimum 2-year follow-up [published online May 3, 2013].

J Hand Surg Am. 2013;38(6):1161-1165. doi:10.1016/j.jhsa.2013.02.040.

- “Subjective and objective outcomes with the Mini TightRope are similar to previous techniques.”
- “The Mini TightRope requires no time to heal, so rehabilitation can begin as early as 10 days postoperatively and patients can return to work and activities faster.”
- “QuickDASH scores show pinch and grip strength reached 90% of the contralateral limb.”

Suture button suspension following trapeziectomy in a cadaver model.

Hand (NY). 2013 Jun;8(2):195-200.

- Proximal or distal trajectory (defined as either less than 60 degrees from the horizontal or more than 60 from the horizontal, respectively) will yield similar results.
- Results were similar for both groups for thumb range of motion, trapeziectomy space height, and distance between the device and nerve to the first dorsal interosseous muscle.

Salvage options for flexor carpi radialis tendon disruption during ligament reconstruction and tendon interposition or suspension arthroplasty of the trapeziometacarpal joint.

J Hand Surg Am. 2013;38(9):1806-1811. doi:10.1016/j.jhsa.2013.06.014.

- “The Mini TightRope is a good salvage or fallback option for stabilizing the base of the thumb metacarpal when the FCR is deficient or injured.”
- “The Mini TightRope can augment an ECRL suspensionplasty when the FCR fails.”

Suture button suspension following trapeziectomy in a cadaver model.

Arthroscopy. 2010;26(10):1395-1403. doi:10.1016/j.arthro.2010.07.006.

- “We describe a novel technique of using a suture button for suspensionplasty of the thumb ray after arthroscopic partial trapeziectomy.”
- “This technique allows for earlier mobilization and may offer a potential improvement on current techniques.”

Suture button compared with K-wire fixation for maintenance of posttrapeziectomy space height in a cadaver model of lateral pinch.

J Hand Surg Am. 2010;35(12):2061-2065. doi:10.1016/j.jhsa.2010.09.007.

- “The Suture button fixation maintains similar posttrapeziectomy space height and prevents subsidence of the thumb metacarpal when compared to K-wire fixation.”
- “The TightRope may allow for earlier range of motion after the hematoma distraction arthroplasty.”

