CMC APL Suspensionplasty With *Internal*Brace™ Ligament Augmentation

Surgical Technique
CMC *InternalBrace™* Ligament Augmentation With APL Suspensionplasty

Thumb CMC arthritis treated with an APL suspensionplasty in conjunction with *InternalBrace* ligament augmentation supports and maintains the thumb and index metacarpals in the proper relationship, while allowing for capsular healing and hematoma and scar tissue formation in the trapezial space. The APL free graft is combined with SutureTape or LabralTape™ suture to give strength to the suspensionplasty at time zero. The technique is completed through one incision and can be performed with or without the use of tendon graft, depending on surgeon preference.

1. Make an incision approximately 3 cm-4 cm over the dorsal aspect of the CMC joint between the EPL and EBP tendons. Protect the radial artery and radial sensory nerve branches.

2. Subperiosteally dissect around the trapezium sharply while protecting the radial artery and maintaining the capsule for later closure. Remove the trapezium in its entirety. Use the trapeziectomy removal tool or a McGlamry elevator to help facilitate removal. Inspect the space for any remaining loose bone fragments and check the scaphotrapezoid joint. Resect if necessary and continue dissection until the radial corner of the first metacarpal and the base of the second metacarpal are visible.

3. When incorporating tendon with the *InternalBrace* construct, harvest a 2 mm wide by 4 cm long slip of APL tendon. Use 2-0 FiberLoop® suture to whipstitch 1 cm of both ends of the APL tendon. Use the tendon sizer to confirm proper width of the tendon.

Note: Harvesting a graft wider than 2 mm-2.5 mm is not advised and can compromise proper fixation in the blind tunnel.
Place the last 3 mm of the APL tendon graft onto the forked eyelet of the 3.5 DX SwiveLock® SL anchor. Secure both ends of the FiberLoop® suture onto the square tab of the SwiveLock anchor. Place a 1.3 mm SutureTape over the graft on the forked eyelet and secure both limbs of SutureTape onto the square tab of the SwiveLock anchor.

Drill a 1.35 mm (0.054 in) guidewire into the radial corner of the 1st metacarpal, midline between the volar and dorsal edges. Aim the guidewire approximately 45° away from the joint surface. Proper guidewire depth is realized when the black laser line is flush to the bone.

Overdrill the guidewire with the gold, 3.5 mm cannulated drill coupled with the drill guide. The drill guide has a depth stop at 1 cm. Irrigate to remove any bony debris.

Identify the 2nd CMC joint with a Freer elevator. Insert the guidewire into the base of the 2nd metacarpal approximately 5 mm from the joint, leaving enough room for a bone bridge once overdrilled. The guidewire should be midway between the dorsal and volar cortex of the metacarpal and aimed parallel or just slightly away from the joint. Use the gold, cannulated drill as in the previous step. Irrigate and remove any bony debris.
Surgical Technique

Applying slow but firm pressure, insert the 3.5 DX SwiveLock® SL anchor into the 1st metacarpal until the anchor body is against the bone. Hold the square tab steady and turn the pear-shaped knob until the laser line on the driver is flush to the bone.

Have an assistant hold the 1st metacarpal fully adducted against the 2nd metacarpal with just enough traction to visualize the drill hole in the 2nd metacarpal. This ensures optimal length and full range of motion. Twirl the APL graft and 1 limb of SutureTape together and place into the fork of a second SwiveLock anchor near the drill hole. Apply slow, firm pressure to the SwiveLock anchor until the anchor body is seated against the bone and then advance the anchor until fixated. There is no need to hold onto the remaining sutures or SutureTape for tensioning purposes as this method will self-tension itself.

Cut off any remaining SutureTape/FiberLoop® suture. Perform a secure capsular closure and address any pathology to the MCP joint if needed.

Postoperatively, place the patient into a hand-based thumb spica orthoplast splint for 6 weeks, allowing gentle ROM work during this time and removal of the splint for bathing. Hand therapy is started 6 weeks post-op, and full use is encouraged 3 months post-op. Postoperative protocol is patient-and surgeon-dependent.

Alternate Technique

Following the tenets of the hematoma distraction arthroplasty, this modified technique can be performed with suture only. Use the smaller silver cannulated drill for both drill holes (easy way to remember: gold drill is for graft, silver drill is for suture!). After inserting the 1.3 mm SutureTape into the 1st metacarpal, capture both limbs of SutureTape in the forked eyelet and advance into the 2nd metacarpal.
Ordering Information

Hand and Wrist InternalBrace™ Ligament Augmentation Repair Convenience Kit (AR-8978-CP) includes:

- DX SwiveLock SL Anchor, 3.5 mm x 8.5 mm, with forked eyelet, qty.2
- Drill Bit, cannulated, 3.0 mm (for all-suture constructs)
- Drill Bit, cannulated, 3.5 mm (for constructs with graft incorporation)
- Guidewires, 1.35 mm with laser marking, qty.3
- Tendon Sizer, 2.0 mm/2.5 mm
- 2-0 FiberLoop® with tapered needle, qty.2
- SutureTape

Optional Instrumentation:

- McGlamry Elevator AR-8930M
- Trapeziectomy Tool AR-8919-01S
This description of technique is provided as an educational tool and clinical aid to assist properly licensed medical professionals in the usage of specific Arthrex products. As part of this professional usage, the medical professional must use their professional judgment in making any final determinations in product usage and technique. In doing so, the medical professional should rely on their own training and experience and should conduct a thorough review of pertinent medical literature and the product’s Directions For Use. Postoperative management is patient specific and dependent on the treating professional’s assessment. Individual results will vary and not all patients will experience the same postoperative activity level or outcomes.