2017 proved to be another exciting year for the hand and wrist team with continued innovation in soft-tissue treatments and expanded fracture and fusion options.

The 3.5 mm DX SwiveLock® SL anchor with InternalBrace™ ligament augmentation has shown remarkable growth, offering ground-breaking solutions for scapholunate, UCL, and CMC pathologies. Fragment-specific plating options were added to our wrist-plating set to create one of the most comprehensive wrist-plating systems on the market today. This combination of soft-tissue implants and comprehensive plating options gives Arthrex the unique ability to tailor solutions to treat some of the most difficult pathologies seen in hand and wrist orthopedics today.

Our hand and wrist medical education programs continue to expand. Multiple hands-on lab opportunities for learning cutting-edge techniques have allowed Arthrex to train more hand and upper extremity surgeons than ever before. With continued focus and expansion, our hand and wrist portfolio is growing rapidly and will continue to do so for many years to come. We look forward to continuous innovation and growth in this exciting market, and we hope you will join us to learn more about what is happening at Arthrex. Stay tuned for more updates or visit us on our website at www.Arthrex.com.

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Senior Director, Product Management
Arthrex, Inc.
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**Thumb UCL Repair**


- Surgical technique description of thumb UCL repair with *InternalBrace™* ligament augmentation on a professional basketball player. The surgeon used a 2.5 mm PushLock® anchor in the proximal phalanx and a 3.5 mm DX SwiveLock® SL anchor in the metacarpal. SutureTape suture was used to create the *InternalBrace* ligament augmentation construct.
- This construct allowed the patient to begin gentle range of motion at day 3 post-op and begin ball-handling exercises at 8 days post-op. At 5 weeks post-op, the patient was cleared to return to full play, and he played his first game at day 37.

Figure 1. Illustration displaying primary repair of collateral ligament with suture anchor (A), primary repair with SutureTape augmentation secured proximally with second anchor (B).

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**CMC Suspensionplasty**


- This article reports on the intermediate outcomes of suture button suspensionplasty using the Mini TightRope® implant. The mean follow-up was 64 months.
- “Mean palmar and radial abduction were 105% and 97%, respectively, of the nonsurgical thumb. Kapandji scores for all operated thumbs were either 9 or 10. Pinch and grip strength were 107% and 102%, respectively, of the nonsurgical side. Mean trapezial space height was 71%.”
- “Favorable outcomes (improvement in range of motion and pain relief) of SBS remain durable over time. Our 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.”

- The biomechanical properties of the native dorsal portion of the scapholunate (SL) ligament were compared to the properties all-dorsal scapholunate InternalBrace ligament augmentation repair technique.
- The load to failure of native dorsal ligaments and repair constructs were 137±43 N and 90±42 N, respectively with no statistically significant difference between the 2 groups (P=.1). The force to 3 mm gap formation was not significantly different (P=.6).


- The purpose of this study was to compare the maximum load and load at clinical failure of an ulnar collateral ligament (UCL) suture anchor repair using 1 SwiveLock anchor vs 2 SwiveLock anchors with InternalBrace ligament augmentation.
- The UCL repair performed with SwiveLock anchors and an InternalBrace ligament augmentation significantly increased the maximum load as well as load observed at clinical failure compared to the repair with only a SwiveLock suture anchor. Additionally, repairs that included the InternalBrace ligament augmentation demonstrated superior maximum loads compared to previously studied repairs involving either a figure-of-8 tendon weave or Bio-Tenodesis™ screw construct (23.5 N and 24.3 N, respectively).1

Test Group Summary

<table>
<thead>
<tr>
<th>Parameter</th>
<th>A. SwiveLock Anchor</th>
<th>B. SwiveLock Anchors With InternalBrace Ligament Augmentation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Load at Clinical Failure (N)</td>
<td>6.0 ± 2.39</td>
<td>25.31 ± 18.34</td>
</tr>
<tr>
<td>Mean ± SD</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maximum Load (N)</td>
<td>8.02 ± 2.24</td>
<td>46.56 ± 25.56</td>
</tr>
<tr>
<td>Mean ± SD</td>
<td></td>
<td></td>
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</tbody>
</table>

Biomechanical Properties of a Novel Scapholunate Repair

![Biomechanical Properties of a Novel Scapholunate Repair](image)
Gibbs D, DeGiacomo A, Shin SS. Return to play in high level athletes after thumb ulnar collateral ligament repair with suture tape augmentation. To be presented at: FESSH 2018 Congress; June 13-16, 2018; Copenhagen, Denmark.

- This retrospective chart reviews 9 high-level high school, collegiate, and professional athletes who underwent operative treatment of thumb UCL tears. Six (6) patients were professional baseball and basketball players, 1 was a collegiate baseball player, and 1 was a high-level high school basketball player.
- All patients received a thumb UCL repair with Internal Brace™ ligament augmentation. The author used a 2.5 mm PushLock® anchor loaded with SutureTape and 3-0 FiberWire® sutures. Occupational therapy was initiated within a week of surgery.
- Athletes who sustained an in-season injury returned to play at any level at 30 days (SD ± 8.23) and at the same level at 32.1 days (SD ± 9.84).


- This abstract presents the novel all-dorsal scapholunate reconstruction with InternalBrace ligament augmentation technique and compares early clinical and radiographic outcomes to the 3-ligament tenodesis.
- The authors identified 6 patients who underwent InternalBrace ligament augmentation. The early radiographic and clinical outcomes for these patients were evaluated and compared to 3-ligament tenodesis reconstructions performed at the same institution. A comparison of radiographic and clinical parameters between and within groups was performed using the Mann Whitney U Test and Wilcoxon Signed-Rank Test. Average follow-up for final radiographs was 9.9 months in the 3-ligament tenodesis group and 6.9 months in the all-dorsal reconstruction group.
- The group comparison demonstrated that in the dorsal reconstruction group, there was significant correction of scapholunate and radioscaphoid angle from preoperative (76.2° and 65.5°, respectively) to immediate postoperative radiographs (52.5° and 47.8°, \( P = 0.04 \) and \( 0.029 \), respectively).
- “Early follow-up of dorsal reconstruction of the scapholunate ligament with interference screws and tendon graft augmented by an internal brace compares favorably to the three ligament tenodesis procedure and has a low incidence of complications.”

Lee SJ, Coyle R, Porter DA, Kremenic I. Poster No. P0218: Biomechanical testing of scapholunate reconstruction with internal brace versus scapholunate repair. Presented at: AAOS 2018 Annual Meeting; March 6-10, 2018; New Orleans, LA.

- This abstract presents the novel all-dorsal scapholunate reconstruction with the InternalBrace ligament augmentation technique. The biomechanical properties of this new technique were compared to a simple scapholunate repair with 2 anchors.
- Five (5) matched pairs of hands/wrists were split into 2 groups. Load to failure, or ultimate strength, was calculated by using an Instron® machine where a distractive force was applied across the repair at a constant rate of 20 mm/min. Failure was defined as a sudden drop in force or a sudden gapping observed across the SLL.
- The ultimate strength of the augmented ligament reconstruction averaged 82.0 N, while the ultimate strength of the ligament repair averaged 41.7 N. This study demonstrated that the method of SLL reconstruction with internal bracing had higher load to failure in vitro than direct ligament repair with suture anchor fixation.
Hand & Wrist Anchors

Innovation in strength, suture, and knotless technology

- Higher pullout strength compared to competitors\(^1\)
- Loaded with 4-0 or 2-0 FiberWire\(^®\) suture
- Knotless repair with the Mini PushLock\(^®\) or SwiveLock\(^®\) SL anchors
- Titanium, PEEK, or biocomposite material

*Quickanchor, Ethibond, MicroFix, and MiniLok are trademarks and registered trademarks of Johnson and Johnson Corporation.
WHAT’S IN MY BAG?
Thumb UCL InternalBrace™ Ligament Augmentation Repair

Q. You have been on the forefront of the thumb UCL InternalBrace ligament augmentation movement this year. What has working with professional athletes taught you about the limits of these repairs?

A. Working with professional athletes has taught me that we need to do everything we can to maximize the strength of these repairs at time zero. The traditional UCL repair that is not augmented with internal bracing has only a suture knot to keep the ligament approximated to the bone; I wouldn’t want to risk this repair coming apart with early motion or inadvertent radial stress by the therapist or patient in the professional athlete. Because our biomechanical study demonstrated a 4-5 times stronger repair at time zero compared to the traditional repair, I have no reservation allowing my professional athletes to move their thumb early as well as start earlier strengthening.

Q. Are you performing InternalBrace ligament augmentations on your nonathlete patient population as well?

A. I now perform InternalBrace ligament augmentations on all of my thumb UCL and RCL repairs, acute or chronic, unless the tissue quality is so poor that a reconstruction with tendon graft is necessary. My reconstructions also incorporate the InternalBrace ligament augmentation. My nonathlete patients are often even happier than my athlete patients, because they do not have to be in a cast, can start moving sooner and return to their work and daily activities sooner.

Q. Many surgeons point out the fact that their thumb UCL repairs generally do well. Why incorporate SutureTape if traditional repairs do well?

A. The thumb UCL repair has traditionally had good results, but requires postoperative immobilization for anywhere from 3 to 6 weeks, depending on surgeon preference. In the grand scheme of things, this may not seem like a very long time to the surgeon, but to the patient, it can be an eternity. As surgeons, we need to put ourselves in the patient’s shoes and treat them as if we were them. The InternalBrace ligament augmentation technique for thumb UCL repairs is easy and requires only 1 extra anchor and SutureTape; however, it is a world of difference for the patient.

Q. You have recently published a case review with biomechanical data. Do you have any other papers?

A. We have completed a manuscript on high-level athletes and time to return to play after thumb UCL repair with InternalBrace ligament augmentation and hope to submit it in the near future. Additionally, we have started to research the kinematics and pinch strength of the internally braced thumb UCL repair.

Q. Thumb UCL repair and reconstruction cases have created a lot of hype for InternalBrace ligament augmentation as a concept. Where do you think this will lead in the future? Any exciting new frontiers?

A. Although thumb UCL repair and reconstruction cases have gotten a lot of the attention, I’ve had success using the InternalBrace ligament augmentation concept for acute nonthumb CMC dislocations, dorsal midcarpal instability, and thumb MCP joint hyperextension (secondary to basal joint OA). I’ve spoken to many surgeons who are experimenting with the InternalBrace ligament augmentation concept for other hand and wrist conditions; once they grasp the concept, it’s exciting to see their mind’s wheels spinning! With the release of smaller SwiveLock® anchors on the horizon, I foresee expanding InternalBrace ligament augmentation indications to PIP joint collateral ligament repairs and swan-neck deformities of the fingers. I am very excited to see what’s in store for 2018.
WHAT’S IN MY BAG?
Intramedullary Screw Fixation for Metacarpal Fractures

Q. We have seen a trend towards performing metacarpal fracture fixation with intramedullary screws. How long have you been doing this?

A. I have been using intramedullary screw fixation for metacarpal fractures for the past 7 years. It has changed the way I manage these injuries. Previously, I would pin or plate difficult metacarpal fractures with varying results. I came upon intramedullary fixation by using it for very distal fractures that would be difficult to pin or plate due to the short, distal metaphyseal segment. The intramedullary approach afforded me the ability to obtain distal fixation in these short segments due to the “bite” of the screw head. This maintains length and rotational stability to allow early motion, expediting the recovery for the patient. I have found my patients are recovering faster through this minimally invasive technique.

Q. You have expanded your applications for screw fixation past the generally accepted transverse neck fracture. How have your results been?

A. Through experience in treating these fractures I have expanded my applications to any fracture pattern which has axial stability. Transverse shaft fractures and more proximal fractures are readily treated using this technique. With intramedullary fixation with a headless screw, the hardware complications are minimized allowing for less scar formation and more anatomic tendon gliding. When I used to plate or pin these fractures, tendon adhesions were a real problem. By changing my technique, I have noticed a dramatic decrease in the need for hardware removal or tenolysis. Without pins, I have also been able to rapidly mobilize these patients with a removable splint, allowing them to return to function much more quickly.

Q. Are you worried about malrotation when using a screw?

A. I have not found malrotation or loss of reduction to be a problem. Modern screw design and the anatomy of the metacarpal provide a stable construct to allow for early motion. The technique also allows for real-time adjustment of the rotation in the operating room while placing the screw.

Q. How has your post-op protocol changed from plates and screws to an intramedullary screw?

A. I have become very aggressive in my rehab protocol for these patients. As my treatment plan has evolved, I have begun to allow immediate active and active-assisted range of motion with the supervision of a hand therapist. A surfer with a metacarpal fracture showed me the intrinsic stability of the technique. He returned for suture removal after surgery with full range of motion and proceeded to do 20 pushups in the exam to show me “how good he felt!” After that, I realized I could advance patients to allow range of motion immediately without significant fear of loss of reduction. I use a hand-based thermoplastic splint for comfort and immediate range of motion.

Q. How has the literature on this evolved throughout the years? Do you see this as a more mainstream procedure?

A. I feel that this technique is becoming more and more mainstream. Its presence in the literature is certainly increasing. We have published our outcomes in the past several years. There is literature to support using this technique in most of the hand bones including the proximal and middle phalanx. It is exciting to see a technique we have embraced early on in its evolution become more and more commonplace.
Q. It seems like we have so many viable solutions for CMC arthritis. How did you come up with the idea of InternalBrace ligament augmentation for CMC?

Lee: We all know that there are many different ways to treat CMC arthritis that seem to work well. I was always intrigued how so many different hand surgeons are passionate about the way they do their technique. I wanted to come up with a technique that is simpler, stronger, and quicker to do and one that would appeal to any type of surgeon whether they believe in a tendon graft technique or a hematoma distraction model. I also was interested in minimizing the number of incisions, decreasing potential complications, and accelerating the postoperative rehabilitation.

Q. Dr. Goldfarb, please tell us about your CMC arthritis technique evolution.

Goldfarb: During residency and fellowship, I learned the classic LRTI technique, as described by Burton and Pelligrini, using the entire FCR tendon to suspend the thumb and create an interpositional spacer. While I have been happy with the technique, the primary complaint is the length of recovery. Patients are frustrated with an initial 5 weeks of immobilization and the fact that it can take 4 months, and sometimes even longer, to get back to full activities. While I used the other techniques, the InternalBrace ligament augmentation is the first that makes sense to me on every level: straightforward surgery, quick recovery, and high patient satisfaction.

Q. Any tips and pearls?

Goldfarb: The surgical technique is straightforward allowing for a quick operating room experience. I use 2 SwiveLock anchors and SutureTape alone. The first anchor is midradial on the first metacarpal, halfway from dorsal to volar. The second is distal to the articular surface of the second metacarpal, midradial also. The second metacarpal anchor placement determines the degree of suspension. If too proximal, the thumb metacarpal may seem too proximal, therefore, I tend to place it 1 cm distal to the articular surface. Finally, tensioning with the thumb fully adducted allows better postoperative range of motion.

Lee: My most important tips are to use the scalpel to take down as much of the ligaments between the scaphotrapezial, trapeziometacarpal joint, and trapezial-trapezoid joints first, then use the McGlamry elevator to detach the rest of the ligaments. It is perfectly shaped and sharp enough to get around the trapezium but safe enough to prevent injury the FCR tendon. Then, use a rongeur that opens wide enough to get around the trapezium and twist the trapezium out like an alligator roll. I insert the SwiveLock anchor into the first metacarpal first, then have my assistant put the thumb metacarpal into full adduction against the second metacarpal and pull enough traction so that I can see the drill hole I made in the base of the second metacarpal. By doing this, you do not need to worry about making them too tight, and it will always preserve the trapezial height.

Q. You have performed the technique with APL graft and suture and just suture alone. How are you performing these today?

Lee: I started doing all of them with APL graft with SutureTape InternalBrace ligament augmentation, but then many people have asked why not just do InternalBrace ligament augmentation. So I changed over to pure LabralTape™ suture InternalBrace ligament augmentation, which has turned this operation into a sub-15-minute operation.

McGlamry Elevator
Q. Some surgeons ask why you go from first to second and not second to first. What are your thoughts?

Lee. I think you can go either way. I think that if you go from first to second, you don't have to worry as much about how much traction to pull because you wouldn't be able to insert the second SwiveLock® anchor until you can see the hole. If you go from second to first, you just have to make sure you are pulling the first MC enough.

Q. How does this compare strength-wise to traditional techniques?

Lee. We have tested this construct against a traditional LRTI, and the InternalBrace™ ligament augmentation procedure was significantly stronger. The LRTI failed at 38±22 N (P=.043) and the InternalBrace ligament augmentation failed at 115±66 N. The InternalBrace ligament augmentation failed because of loss of trapezial space rather than catastrophic failure.3

Q. Any papers/presentations in the works?

Lee: Yes. The biomechanical MTS data I spoke about has been completed and is being submitted for publication. The clinical follow-up is in progress. I know that there are also separate clinical and biomechanical studies being performed at other institutions that will bolster the InternalBrace ligament augmentation procedure.

Q. Has your post-op protocol changed from when you started doing InternalBrace ligament augmentation to today? Have you noticed any change in how your patients are feeling/how quickly they are back to activities after this surgery?

Goldfarb: Patients are placed in a forearm-based thumb spica plaster splint in the OR. At 7 days, they are seen by therapy for a custom, hand-based thumb spica splint with the IP joint free. They are allowed active motion of the thumb at that time. Sutures are removed at 2 weeks, the splint is weaned at 6 weeks with an initiation of strengthening and passive motion. Full activities are allowed at 8 weeks. I have recently performed my first bilateral CMC arthritis treatment with the InternalBrace ligament augmentation — something that never would be considered with the traditional techniques. While I do not advocate bilateral intervention, it is reasonable for those who are highly motivated for a rapid recovery.

Lee: Yes. After taking out the sutures 7-10 days post-op, I only put them in a hand-based thumb spica splint, the same one that I put them into pre-op, so they are comforted in knowing that they are going back into a splint they are already used to. They are weaned off of this splint after 6 weeks. During the splint time, I do have them touch each of their fingers in the shower.
Q. Spanning plates have been a popular discussion point at hand meetings lately. Why do you think that people are gravitating towards this established procedure?

A. I think the idea of using spanning internal fixation is being embraced for severely comminuted and distal fractures. It is much more preferable to use spanning internal fixation over traditional external fixation methods as pin care and infection issues are mitigated using the internal fixation. In the past, patients have been overwhelmed at times with the care of external fixators.

Q. Spanning plates have been described as being placed to the second or the third ray. What works better in your hands?

A. I would say that I most frequently secure the internal spanning plate to the long metacarpal. However, I do not hesitate to fix the plate to the index metacarpal if I feel that more ulnar deviation is necessary to improve alignment.

Q. What types of fracture patterns/applications do you typically use the spanning plate for?

A. I generally use the spanning internal plate for comminuted fractures and fractures that are extremely distal. The distal fractures are often times very difficult to stabilize with traditional volar or dorsal plating techniques. Additionally, I tend to use spanning internal fixation when dealing with a comminuted distal fracture in a patient with poor bone quality as often times the bone fragments will collapse around volar plates.

Q. What are some of the key technique pearls you use to get good reduction and avoid complications?

A. I generally try to obtain a preliminary reduction of the fracture prior to any incisions being placed on the wrist. This allows for taking maximal advantage of ligamentotaxis. Occasionally (especially if there is radial translation) I will place provisional K-wires to hold the reduction prior to placing the dorsal spanning plate.

Q. What is your typical post-op protocol?

A. My typical post-op protocol involves immediate and aggressive finger ROM. Just as it is possible to overdistract the wrist joint with external fixation, it is possible to do so with internal fixation. I make sure that the patient understands that the single most important factor for a successful outcome is full range of motion of the fingers. I generally leave the plate in for 8 to 12 weeks and then remove the hardware. At the time of removal, and under general/regional anesthesia, I manipulate the fingers and wrist carefully to help the patient with their stiffness.
Q. Performing procedures in the office has become increasingly popular, and we see more and more applications being addressed there. What was your motivation to move your endoscopic carpal tunnel cases to in-office?

A. In-office procedures have long been championed by our colleagues across the globe who struggle to have adequate access to the operating room. We are all aware of the concept of wide awake local anesthesia no tourniquet (WALANT). This concept has steadily gained acceptance and application in our ever-evolving realm of quality health care. Particularly as deductibles rise and hospitals monopolize reimbursements for procedural health care, the necessity to relieve the monetary strain is higher than ever. With this in mind, I began to schedule in-office procedure days to provide an outlet for patients’ access to care. I started with trigger and DeQuervain’s releases and progressed to mass and ganglion excisions. Open carpal tunnel release in an office setting has long been accepted but as the 2014 Cochrane review indicated, quality of care was superior with endoscopic release. Therefore, I wanted to figure out the logistics for in-office endoscopic releases to give my patients the best option.

Q. Do you perform all of your carpal tunnels in clinic or are you patient selective?

A. During the trial period, I have been moderately selective in regards to endoscopic carpal tunnel release. Interestingly enough, many of the patients I have performed this on have the worst medical comorbidities and usually would not meet criteria for general anesthetic or monitored anesthesia care (MAC). Fortunately, these patients are often the most grateful since they are often denied surgical care.

Q. What kind of sedation do you use? What kind of block do you perform?

A. Anesthesia consists of a 50/50 solution of 1% lidocaine and 0.25% Marcaine®, both with epinephrine. The injection is delivered with 2 cc subcutaneously at the incision site and 8 cm proximal to the wrist flexion crease ulnar to the palmaris longus tendon with the remaining solution. Approximately 20 minutes is required for a dense median nerve block.

Out of the 30 patients who have undergone the procedures, only 2 have asked for sedation. This was accomplished with 10 mg of Valium® 30 minutes prior to arrival.

Q. How long does the procedure take from start to finish?

A. Generally, after the block is completed and has taken effect, the patient is walked to the procedure room. After laying supine on the examination table, a tourniquet is applied to insure a bloodless surgical field if the block fails. The patient is then prepped with ChloraPrep™ and an extremity drape is placed over the arm. Time out is completed and incision is made in the proximal wrist flexion crease approximately 1 cm in length. After the surgical release, closure with Prolene® is completed with application of soft dressing. Typically, this lasts 3-5 minutes and the patient is given a postoperative instruction worksheet.

Q. Where do you see office-based procedures going in the future?

A. I think that future applications are unbounded. The market forces will cause us to apply our knowledge in the best way to provide quality care for our patients. It is my hope to transition more procedures over time to include tendon repairs, tenolysis, and percutaneous pinning of finger fractures under digital block. With the advent of the Synergy ultrasound, the accuracy of the anesthetic blocks improves and allows more rapid diagnosis of benign tumors. Synergy also provides real-time feedback of tendon and nerve continuity for the laceration patient referred from emergent care. As mentioned before, as technology and opportunities increase, the number of in-office procedures will as well.

* Marcaine is a trademark of Hospira, Inc.
† Valium is a registered trademark of Roche Products Inc.
‡ ChloraPrep is a trademark of CareFusion 2200, Inc.
§ Prolene is a registered trademark of Ethicon, Inc.
NEW PRODUCT HIGHLIGHT

Hand and Wrist Internal/Brace™ Ligament Augmentation Repair

The hand and wrist Internal/Brace ligament augmentation repair system provides surgeons with a means to perform an Internal/Brace augmented procedure with the ease of one all-inclusive kit.

The forked eyelet PEEK SwiveLock® anchors allow for repairs comprised of various suture materials, biologic grafts, or a combination of both. The blind tunnel technique allows for a completely knotless repair. When suture is used in addition to the soft tissue repair, the construct permits early motion and limited postoperative immobilization.4

Hand and Wrist Internal/Brace Ligament Augmentation Repair System (AR-8978-CP)

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

Multimedia

All-Dorsal Scapholunate Reconstruction with Internal/Brace Ligament Augmentation Repair
DX SwiveLock Thumb UCL Repair with Internal/Brace Augmentation

Nano Corkscrew® FT Suture Anchor

Designed specifically for the small bones of the hand, the 1.7 mm × 5 mm Nano Corkscrew FT suture anchor is loaded with 3-0 FiberWire® suture and ½ circle tapered needle. It offers superior pullout compared to competitive anchors (see chart on page 4).1

Nano Corkscrew FT Suture Anchor (AR-1317FT)

Nano Corkscrew Anchor, 1.7 mm × 5 mm
K-wire with laser mark
NEW PRODUCT HIGHLIGHT

3.5 mm DX SwiveLock® SL Anchor

*InternalBrace™* Ligament Augmentation with the 3.5 DX SwiveLock SL Anchor

By far the most exciting new technology for the hand and wrist, *InternalBrace* ligament augmentation repair with SutureTape, offers the benefit of immediate stability while the biologic repair or reconstruction heals.²

Select Applications

**All-Dorsal Scapholunate Reconstruction With *InternalBrace* Ligament Augmentation**

This technique is performed through 1 incision and is meant for acute or chronic tears where the dorsal and central portions of the SL ligament are torn. Harvest a slip of the ECRB and, along with SutureTape, place the graft into the proximal pole of the scaphoid, bring over to the lunate, and then bring distally to the distal pole of the scaphoid. Both scapholunate reconstructions require an antirotational K-wire to be placed from scaphoid to capitate for weeks to allow for healing.

**Interosseous Scapholunate Reconstruction With *InternalBrace* Ligament Augmentation**

This technique is also performed through a single incision and is meant for acute or chronic tears where the entire SL ligament is torn. Insert a slip of the ECRB tendon into the central portion of the scaphoid, then bring up through a tunnel in the lunate, and finally secure dorsally into the distal pole of the scaphoid.

**Thumb UCL Repair With *InternalBrace* Ligament Augmentation**

Load the DX SwiveLock anchor with a strand of 2-0 or 3-0 FiberWire® suture (according to surgeon preference) and a strand of SutureTape. Place the SwiveLock anchor into the proximal phalanx, and repair the remaining ligament with the strand of FiberWire suture. Once the primary repair is finished, place the thumb in 30° of flexion and bring the strand of SutureTape over the repair. Secure into a second SwiveLock anchor just proximal to the origin of the UCL ligament on the first metacarpal.

**APL Suspensionplasty With *InternalBrace* Ligament Augmentation**

Harvest and whipstitch a slip of the APL tendon with 2-0 FiberLoop® suture on both sides. Load the graft and a strand of SutureTape onto the DX SwiveLock anchor. Insert the SwiveLock construct into the proximal, radial corner of the thumb metacarpal base. A second SwiveLock anchor brings the graft and SutureTape into the base of the second metacarpal, creating a hammock-type suspension under the first metacarpal.
Fragment-Specific Plating

The Wrist Plating System provides a comprehensive solution for distal radius fracture management. Multiple plating options include a comprehensive volar plate selection, as well as dorsal plates, radial styloid plate, periarticular plates, L-plates, ulnar styloid plate, and a dorsal spanning plate. All plates can be housed within the system, giving the surgeon flexibility of choosing their plate without the hassle of a second system.

Radial Column Plates:
- Radial styloid plate
- L-plates
- Dorsal plates
- Spanning plate

Intermediate Column Plates:
- Dorsal plates
- Spanning plate
- Volar hook plate
- L-plates

Ulnar Column Plate:
- Ulnar styloid plate

NEW PRODUCT HIGHLIGHT

![Images of plates and diagrams](Images)
Optional 2.5 mm PushLock® Anchor *Internal/Brace™ Ligament Augmentation Construct*

For patients with smaller anatomy, a Mini PushLock anchor can be substituted for the 3.5 mm DX SwiveLock® SL anchor for fixation in the proximal phalanx. Use a 1.8 mm or 2.0 mm drill with the accompanying drill guide to create a hole in the proximal phalanx. Pass the SutureTape and FiberWire® sutures through the eyelet of the PushLock anchor. Insert the PushLock anchor into the proximal phalanx and follow the general technique to create the repair with *Internal/Brace* ligament augmentation.

**Tensioning for Thumb UCL Repair With *Internal/Brace* Ligament Augmentation**

It is crucial to have the thumb in the correct position while performing a thumb UCL repair with *Internal/Brace* ligament augmentation. The addition of SutureTape suture gives the repair strength at time zero, but this means that it does not allow for tendon attenuation that can be expected when doing a standard repair. To avoid overtensioning the repair, place the second SwiveLock anchor with the joint held flexed at 30°.

**Internal/Brace™ Ligament Augmentation Tendon Graft Sizing**

Graft size is crucial when using the 3.5 mm DX SwiveLock SL anchor. When incorporating SutureTape or LabralTape™ suture, the graft must be between 2.0 mm and 2.5 mm in width. Generally, a slip of the ECRB or the Palmaris will be appropriately sized for the forked tip of the anchor. When the graft is oversized, the threaded anchor cannot catch the surrounding bone and fixation is compromised.
Trapeziectomy Tool

The Arthrex Trapeziectomy Tool allows surgeons to quickly grab the trapezium and then use the handle as a joystick while releasing soft tissue around the bone. This tool can also be used for bone excisions in the carpus.

The tool is included in the CMC Mini TightRope® Implant Convenience Kit (AR-8919DS) or can be ordered sterile in a single pack (AR-8919-01S).

McGlamry Elevator

The Arthrex McGlamry Elevator is another tool that helps with the removal of the trapezium. It is a stand-alone instrument that can be sterilized and reused.

Hand and Wrist-Specific 2-0 and 4-0 FiberLoop® Suture

Arthrex offers several FiberLoop suture products specifically designed for smaller grafts used in hand surgery.

- 2-0 FiberLoop Suture with taper needle: AR-7232-05
- 4-0 FiberLoop Suture with taper needle: AR-7229-20
- 4-0 FiberLoop Suture with taper needle (short loop): AR-7229-12
Arthrex experienced continued, healthy growth during 2017. Last summer, we made key internal changes within our division of medical education to fulfill the increased educational demand for distal extremities. We decided to create separate Hand & Wrist and Foot & Ankle educational teams. As a trained orthopedic hand surgeon with almost 10 years of Arthrex educational experience, Dr. Felix Riano was appointed as the medical education manager for the new hand, wrist, and elbow team. We are extremely excited and committed to these new frontiers for hand and wrist within our company.

InternalBrace™ ligament augmentation technology keeps on gaining strength and we are finding new applications for hand and wrist. The ability to help protect ligament repairs and reconstructions has caught the attention of the international hand surgery community. It has also meant a big difference in reliably addressing challenging conditions like scapholunate dissociations, midcarpal instabilities and radiocarpal ligaments repairs. Recent attention to topographic anatomy studies describing safe corridors, has reflected on more interest for endoscopic carpal tunnel release with our ergonomic Centerline™ endoscopic carpal tunnel release. The different options in our distal radius system, like the spanning plate, have drawn significant attention for the treatment of complex intra-articular fractures.

The North American Hand & Wrist Fellows Symposium offered an optional shoulder track in 2017. We had 53 fellows in attendance for this 3-day event, which included didactics and wet-lab sessions on arthroscopic and minimally invasive techniques. We hosted a workshop for 150 participants at the American Society for Surgery of the Hand (ASSH) annual meeting in San Francisco where Dr. Jeffrey Yao and Dr. Steve J. Lee shared their experience and results with the Mini TightRope® implant and InternalBrace ligament augmentation technologies for thumb CMC suspensionplasty. In 2017, we also had the opportunity to discuss and run workshops on InternalBrace ligament augmentation at the Japanese Society for Surgery of the Hand (JSSH) in Nagoya, at the Federation of European Societies for Surgery of the Hand (FESSH) in Budapest, Hungary, and at the 2017 Wrist Trauma Course in Maui, HI.

Thank you to all of our consultants and surgeon instructors for their continuous commitment to education and our mission of Helping Surgeons Treat Their Patients Better™. We look forward to a great 2018 for hand and wrist surgery!
REFERENCES


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