Arthrex Hosts Virtual Medical Education Events

Arthrex remains committed to the educational needs of our world’s health care professionals by providing live virtual medical education presentations with state-of-the-art digital media technology delivering the most up-to-date information on less invasive orthopedic surgery.

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Join faculty and colleagues for these unique educational didactic presentations and Q&A sessions focused on the latest innovations in orthopedics and minimally invasive surgery. Subscribe to receive weekly updates on the Virtual Medical Education Events schedule at https://arthrex.info/STO-MEDED-WEBINARS.
Acetabular Labral Reconstruction

In the absence of adequate or irreparable labral tissue, acetabular labral reconstruction has shown promising short-term results in recent literature. Reconstruction of the labrum helps to restore the anatomy and the suction seal that helps maintain intra-articular fluid in the joint. Several articles supporting favorable patient outcomes are summarized in this scientific update.1

Our tensionable knotless anchor technology, including the 1.8 Knotless FiberTak® soft anchor and 3.0 mm Knotless SutureTak® anchor, allows for precise control of the labrum during final tensioning of the labral graft construct.

Reference

GraftLink® All-Inside Technique for ACL Reconstruction

The GraftLink all-inside technique provides the ultimate in anatomic, minimally invasive, and reproducible ACL reconstruction. Recent literature presents evidence-based support for improvements in ACL reconstruction when using this technique:

- Significantly improved graft integration compared to standard full-tunnel techniques1
- Significantly greater ultimate strength compared to all other techniques2
- Equivalent stability to BTB technique in athletes aged 24 years or younger3
- Significantly reduced tibial tunnel widening compared to screw fixation4,5
- New FlipCutter® drill is adjustable, variable-size, all-in-one guide pin and reamer that allows minimally invasive socket creation; accommodates sockets and tunnels ranging from 6 mm to 12 mm diameter, including half-sizes, with convenience and efficiency of a single device

References

FiberLink Plus™ and TigerLink Plus™ SutureTape

FiberLink and TigerLink sutures are now available with 1.7 mm SutureTape. For surgeons who prefer “luggage tag” or cinch stitches, these new products complement our Knotless SwiveLock® and PushLock® anchors. Available sizes now range from #0 to the new 1.7 mm SutureTape, which offers more tissue coverage.

- 1.7 mm SutureTape loop with a #5 suture tail; available in white/blue and white/black
- #5 suture tail can be passed through knotless anchor eyelets
- SutureTape has increased tissue pull-through resistance when compared to standard round suture

Reference

Rotation Lasso Suture Passer

The Rotation Lasso.suture passer is a simple and intuitive lasso-style passer for arthroscopic and open soft-tissue repairs. Its simplicity helps reduce procedural steps, prevents twists and tangles inside cannulas, and eliminates the need for outside suture shuttling. A deployable, rotatable, and durable Nitinol loop allows for an all-inside passing technique. Once the loop is deployed, sutures can then be retrieved back through the tissue.
Arthrex donated hundreds of N95 masks, surgical gowns, and protective eyewear to local hospitals and loaned medical-grade sterilization units to emergency teams to disinfect the PPE they were forced to reuse due to shortages. In addition, we began to manufacture and donate high-quality, reusable face masks and transparent plexiglass hoods to protect HCPs during the critical intubation process before patients are placed on a ventilator.

Beyond health care needs, the pandemic inflicted grave economic challenges. Throughout, Arthrex has remained committed to leading the economic recovery locally and globally. Our employees put themselves at personal health risk at the height of the crisis to support essential services. We reliably continued the production and delivery of our products to help surgeons treat their trauma patients and to prepare for the upswing in elective surgeries as restrictions were eased. Our frontline HCPs now know that as they take personal health risks to treat their patients, companies like Arthrex are reliably there for them during their time of need with products and services that matter.

Arthrex has always been about improving lives by Making People Better and our commitment to that goal has not wavered during the global COVID-19 pandemic.

When the virus first became a serious threat, we immediately asked health care professionals (HCPs) how we could be of the most help. They all expressed the need for personal protective equipment (PPE),
Virtual Implant Positioning™ (VIP) Preoperative Planning System: Implant Backside Seating and Max Gap Offset

The latest enhancement to the VIP™ Planning Software is the addition of implant backside seating and maximum gap offset options. Providing surgeons with a deeper understanding of implant seating and position relative to the patient's anatomy, these new features will allow for a complete understanding of where to optimally place the selected implant.

The backside seating function will provide a heat map and surface area measurement of the glenoid implant's backside interfacing with the native glenoid. The max gap and depth offset feature will allow visualization of the distance between the implant's backside and bone, as well as the maximum amount of reaming required to prepare for the selected implant to achieve the planned position. Both features update in real-time to deliver important information to surgeons during preoperative planning in an intuitive manner.

Reference

MIS Ankle Fusion Plating System
Small Footprint, Huge Impact

The titanium Ankle Fusion Plating System provides a complete solution for ankle fusion management with a comprehensive offering of anatomy-specific plates for both tibiotalar and tibiotalocalcaneal arthrodeses. With 7.0 mm Compression FT screws and the new minimally invasive Ankle Fusion Plate, you now have a “mini-open” option to approaching anterior tibiotalar arthrodesis. Compared to the standard 3-screw fusion construct, the addition of an anterior plate increases construct rigidity and decreases micromotion at the ankle fusion interface without the need for a standard open incision.¹

Nano High-Flow Sheath Kit Now Available

The NanoScope™ operative arthroscopy High-Flow Sheath Kit is sterile-packaged and comes with straight and pre-bent sheath options. The increased flow rate at the distal tip allows for improved visualization and increased joint distention for more advanced procedures in operative settings. The angled sheath is pre-bent at 11° to allow for rotation of the sensor at more traditional angles.

- Straight 3.4 mm sheath with rigid sharp obturator
- 11° pre-bent 3.4 mm sheath with flexible blunt obturator
- Tapered luer for cut and gravity tube sets
- Sterile-packaged pouch
- Hardened metal for a more rigid/durable feel
- Increased flow rate at the distal tip for improved visualization and distention
- Most efficient when using resection blades and burrs <4 mm

The Synergy® System With Apollo® RF Probes

The Synergy® system with Apollo® RF probes provides surgeons with a robust offering to efficiently ablate tissues and coagulate bleeding vessels in arthroscopic procedures. The system was designed with a number of enhancements to provide the most durable and effective devices for soft-tissue resection.

The Synergy® system works by emitting a specified radiofrequency to channel an electrical current between the active and return electrodes on the Apollo® RF probe tip. When used in a conductive fluid, the current excites the particles in the fluid to form a plasma layer. The plasma contains significant energy to break down organic molecular bonds, such as human tissue. This process of molecular dissociation is a chemical reaction, meaning heat is not the primary energy driver. As such, bipolar plasma ablation technology works at relatively lower temperatures than traditional electrocautery devices.

The console uses a clinically proven radiofrequency with a proprietary waveform to deliver enhanced ablation performance across a wide range of tissue types. The Apollo® probes come in different shapes, electrode designs, sizes, and power settings to accommodate a variety of pathologies and anatomy. Each probe incorporates a solid-piece active electrode for improved durability. The probes were designed to quickly aspirate tissue particulate and bubbles to ensure a consistent visual experience.

Additional functionality is introduced when the systems are integrated. The Synergy® console can be connected to the Synergy UHD4™ imaging system to provide a heads-up display (HUD). This feature conveniently places the probe settings next to the camera view for quick reference intraoperatively. Surgeon preferences can also be programmed within the Synergy UHD4 tablet to automatically push the preferred ablate and coagulate settings for each Apollo® probe at the beginning of a procedure.

Recently, the system surpassed a milestone: over 1 million Apollo® RF probes have been sold since launch in 2016. This achievement is a testament to the safe and effective performance of the Synergy® system.
AnkleSprain.com Patient-Focused Educational Website Featuring InternalBrace™ Ligament Augmentation

Arthrex has launched AnkleSprain.com, a patient-focused educational website designed to create awareness about chronic ankle instability and possible treatment with the InternalBrace ligament augmentation procedure. “Lateral ankle sprains are a high-volume injury, with approximately 30,000+ per day reported to US emergency rooms,” said Senior Director of Distal Extremities and Trauma, Pete Denove. “With scientific support indicating not all of the ‘gold standard’ Brostrom ligament repair procedures work completely, we knew we needed to provide patients with an educational resource that focuses on the low-risk, minimally invasive technique that is InternalBrace ligament augmentation.”

AnkleSprain.com showcases a variety of patient-friendly features, including videos with surgeons answering FAQs, patient testimonials, and a “Find a Doctor” search element to help patients connect with surgeons in their area who are trained to perform the InternalBrace procedure.

Anand Vora, MD, has performed over 400 InternalBrace ligament augmentation procedures since 2015 and is leading a prospective randomized study being submitted to Foot & Ankle International this summer. We asked for his thoughts on the new AnkleSprain.com patient website.

Q: Do you see a need for patient education on solutions for chronic ankle instability and, if so, how does AnkleSprain.com meet that demand?

A: Yes, there is a need for patient education as there are many surgical techniques and, more importantly, postoperative protocols that may have direct impact on a patient’s timeline for recovery. AnkleSprain.com addresses these variables and gives patients the opportunity to consider some of these issues and the InternalBrace procedure, which may allow for an expedited recovery. Some individuals with chronic lateral ankle instability have learned to “cope” with their problem; the site will introduce them to a potential surgical pathway that can allow for an expedited recovery and thus may lower the threshold for these patients to consider surgery.

Q: Which patients will benefit most from the information provided on the benefits of InternalBrace ligament augmentation?

A: All patients will benefit as the information provided regarding chronic lateral ankle instability is in a patient-friendly and understandable format. With that said, patients who are motivated for a quicker return to their desired activity levels, whether athletic-related or otherwise, would likely benefit the most.

Q: What do you think of the “Find a Doctor” feature? Do you expect it will drive patients to your practice?

A: The “Find a Doctor” feature will possibly drive patients to our practice, but the true benefit is that it will help patients identify physicians with some level of experience in the InternalBrace procedure. It will help them make educated decisions on where to seek treatment, with the hope that their expected postsurgical outcomes will be met or exceeded using the InternalBrace technology and expedited recovery and rehabilitation platforms.
Q: What about the Patient Stories on the site? Will your patients relate to their experiences?

A: Patients' stories are critical. Most patients can relate to their peers, particularly for sports-related injuries, and may have trouble interpreting the literature. If they can recognize themselves in these stories and see the successful outcomes achieved by other recreational and high-level athletes, they’ll have realistic expectations of the opportunity for similar results.

Q: How are you incorporating the website into your patient interactions?

A: We will use the website and patient brochures for patient education regarding recovery expectations after surgery but, as important, also for patient education regarding chronic lateral ankle instability in general. Many patients are confused regarding treatment for an acute ankle sprain versus that for chronic lateral ankle instability. The website’s educational materials will help patients understand the treatment pathways along this spectrum from which they may benefit. Our literature demonstrates that after an acute ankle sprain, up to 20% to 30% of patients may develop some form of chronic symptoms.2,3 Thus, even when treating acute sprains conservatively, directing patients to AnkleSprain.com for information early may help them navigate choices for recovery such as PT, bracing, or surgery if they are not recovering in a timely manner.

Q: What area of the site do you think will have the most impact on your practice?

A: The most impact it will likely have on our practice is to help patients self-select which protocol for recovery they prefer if they are considering surgery for chronic lateral ankle instability. Many patients may not be offered an accelerated recovery option and traditional rehabilitation is certainly reasonable, but for those patients who desire a more aggressive protocol, they can identify surgeons who best match their desires and goals for recovery in the short and potentially long term.

The InternalBrace™ procedure accelerates recovery and rehabilitation† to get patients back to their activities faster.”
Q: While the concept of meniscus extrusion is not necessarily new, it is receiving a great deal of attention in journal publications and from the podium at various professional meetings. What is meniscus extrusion?

A: Meniscus extrusion is a partial or total displacement of the meniscus off of the tibial plateau and tibial articular cartilage, and is typically described as a meniscal position more than 3 mm outside the margin of the tibial plateau. This pathology presents more commonly on the medial side and typically occurs secondary to an underlying meniscus injury, such as a meniscus tear or progressive degenerative wear in the ipsilateral compartment. When the meniscus is injured, the normal biomechanics of the knee joint are altered, and this can lead to changes in force through not only the cartilage and meniscus itself, but also their associated stabilizing structures. One of these stabilizing structures is the meniscotibial, or coronary, ligament. This ligament acts as an attachment that tethers the meniscus to the adjacent tibia and assists in prevention of meniscal displacement. When this ligament is injured or becomes lax, especially in combination with a meniscus tear, the meniscus appears to be more readily displaced or extruded into the medial or lateral aspect of the knee. Several studies have demonstrated that meniscus extrusion is a risk factor for symptomatic knee osteoarthritis and is therefore a potentially important clinical entity to appropriately identify and treat.1-3

Q: Have you had any patients present with meniscus extrusion?

A: Our practice has been fortunate to see a large number of patients with complex injury patterns. Because of that, I have seen several patients with clinical and radiographic evidence of meniscal extrusion. At present, the vast majority of patients who present with findings of meniscus extrusion have associated ipsilateral tears of the posteromedial meniscus root attachment.

Q: How do you diagnose meniscus extrusion?

A: In my opinion, the easiest and most reliable way to diagnose meniscal extrusion is via coronal MRI imaging. Typically, the peripheral border of the meniscus should approximate the edge of the tibial plateau on a coronal view, but with extrusion, the meniscus displaces outside of this normal position. To assist in evaluating for this pathology, a vertical line is drawn intersecting the margin of tibial plateau, and extrusion is measured from this line to outer edge of meniscus.

The difficulty in using MRI imaging to evaluate extrusion is that most MRI sequences are obtained with the patient supine and in a non-weightbearing position. Because of this, it can be difficult to diagnose meniscus extrusion. In some instances, a dynamic examination using ultrasound can be used to view the dynamic motion of the meniscus and to evaluate the periphery of the meniscus as it relates to the tibial plateau.

Q: Can a patient experience meniscus extrusion without damaging the meniscus body?

A: Although rare, there are case reports of meniscal extrusion related to isolated meniscotibial ligament or deep MCL injuries. Previous reports have described the so-called “floating meniscus” that, when seen arthroscopically, is an elevation of the meniscus superior to the adjacent tibial plateau without an obvious associated meniscus tear. Some surgeons feel that this corresponds more specifically to an MCL injury, while others feel that this may be indicative of an isolated meniscotibial ligament injury. Regardless of the specific entity of causation, it does appear that extrusion may infrequently occur in the absence of an associated meniscus tear.

If there is clinical suspicion for a meniscal injury or extrusion without MRI evidence of a tear, dynamic ultrasound examination of the meniscus through flexion and extension may also reveal extrusion and can allow for specific visualization and evaluation of the integrity meniscotibial attachment, although arthroscopic evaluation remains the gold standard.
Q: Does meniscus extrusion play a role in posterior root avulsions?

A: This is one of the more important questions as it relates to meniscus root injuries. Certainly, most surgeons who see and treat meniscus root injuries have clinically observed meniscus extrusion in the setting of a root tear. The missing piece of the equation is discerning which occurred first, the root tear or the extrusion. Prevailing thought processes are that most patients first experience a meniscus root tear and the meniscus circumferential fibers are subsequently disrupted, which leads to loss of normal hoop tension and meniscus extrusion over time. However, we have seen several cases of acute meniscus root tears with extrusion, which suggests that these injuries either occur in tandem or that a preexisting meniscotibial ligament injury or other underlying condition could have predisposed the patient to the root tear.

Regardless of this “chicken or the egg” debate, it will be critically important to determine the interplay of the peripheral meniscal stabilizing structures when repairing meniscus root tears. It seems likely that isolated meniscus root repair may not completely eliminate extrusion in all cases, and this could lead to cyclic displacement of the repair, which could lead to inferior outcomes over time.

Q: Have you treated this type of pathology surgically? If so, how?

A: We are fortunate to have experience treating meniscus extrusion surgically, with the ability to perform dynamic ultrasound examination in the OR. We have also treated several patients with obvious meniscus extrusion on MRI. The most common scenario we encounter is a patient with a posteromedial meniscus root tear who shows evidence of meniscus extrusion on preoperative coronal MRI. For this patient, we perform a transtibial meniscus root repair, and then subsequently evaluate for extrusion using a dynamic intraoperative ultrasound examination. It has been surprising to me that some of these patients still demonstrate evidence of extrusion even after an appropriately tensioned and anatomic meniscus root repair. Because of that, we perform a procedure to repair extrusion and restore the normal position of the meniscus more frequently.

The surgical technique that we employ to address extrusion involves an arthroscopically assisted percutaneous repair of the medial meniscotibial ligament using the Arthrex Knee Capsule Repair System, which includes everything required to perform the repair. The technique can also be performed using an open approach for direct visualization.

Our current technique involves placement of two knotless anchors (although a third anchor can be added to the repair construct, if needed) based on the length of the ligament disruption. Under direct arthroscopic visualization, we use a rasp to prepare the tibia just distal to the articular cartilage and place two guide pins percutaneously at the anterior and posterior margin of the medial meniscotibial ligament. We place the pins parallel to the joint surface in a submeniscal location (the exact anterior/posterior location of the pins can be confirmed using preoperative MRI landmarks or with intraoperative ultrasound).

Once the guide pins are in the appropriate position, we create a small incision around each pin and perform blunt dissection down to the second layer of the medial knee to allow for passage of the Guided Arthroscopic Placement (GAP™) drill guide. This guide allows for a safe anchor placement with a slightly distal trajectory to help prevent damage to the cartilage, while placing the anchor 3 mm below the joint line to recreate the proximal attachment of the medial meniscotibial ligament. Two 3 mm Knotless SutureTak® anchors are inserted to allow for repair of the ligament. The repair suture from the anterior anchor is then shuttled percutaneously and fixed to the posterior anchor, and the repair suture from the posterior anchor is similarly shuttled and fixed to the anterior anchor. Gentle sequential tightening allows for compression of the tissue against the medial tibial plateau, completing the repair.

Q: Realizing that this is a limited sample size, how are your patients doing following this procedure?

A: As you said, this is a limited sample size, but I have been very pleased with our clinical outcomes thus far. It is difficult to discern how patients would have proceeded clinically if the extrusion had not been addressed; however, we do know that patients with unaddressed meniscus extrusion are at risk for progressive radiographic osteoarthritis progression.

In our early clinical follow-up, patients with a meniscus root tear and associated extrusion who underwent a transtibial repair of the meniscus with an associated meniscotibial ligament repair seem to be progressing clinically similar to those patients who present without extrusion and simply undergo an isolated meniscus root repair. This is an encouraging finding in that we can likely achieve reliable and durable outcomes if all areas of injury are addressed. In general, my feeling is that if we can restore normal meniscal position and repair the extrusion, our outcomes will demonstrate that patients recover well, and our failure rates and maintenance of normal joint space will improve.

References
Q: Introducing a new concept to all-inside meniscus repair, the all-suture FiberStitch implant eliminates the need for hard plastic PEEK anchors behind the meniscus. What are your thoughts about all-suture anchors replacing PEEK anchors?

A: I definitely prefer an all-suture implant because the suture appears to be more meniscus friendly and removes the possibility of ever leaving a loose body (the PEEK anchor) behind the meniscus.

Q: In your clinical experience with the FiberStitch implant, what benefits does an all-suture implant offer?

A: An all-suture implant design allows for easier implant deployment in an efficient stepwise approach by which the cross-stitch is tightened and the separate suture tail is subsequently tightened to complete the meniscal repair process. These separate suture management steps ensure efficient implant deployment.

Q: What benefits might patients experience from all-inside meniscus repairs with the all-suture FiberStitch implant?

A: All-suture implants will never leave behind a palpable and potentially bothersome subcutaneous PEEK anchor implant.

Q: With the surgeon in mind, the handle was specifically designed to provide superior ergonomics. What are your thoughts about the handle design?

A: I don't have to look down at the device during implant deployment because of the robust design of the deployment wheel, which provides excellent tactile feedback and has an audible endpoint “click.”

Q: What are your thoughts about the surgical technique and implant deployment steps?

A: The ergonomic handle is the best single-hand implant deployment device on the market, providing superior tactile feedback. The efficient two-step suture loop tightening scheme negates premature knot tightening that can leave behind an unwanted suture loop.
Next-Generation Tensionable Knotless SwiveLock® Anchors

The next generation of tensionable knotless technology is now available with the 4.75 mm and 5.5 mm SwiveLock anchors. The tip-retention suture in the SwiveLock anchor eyelet has been replaced with the same tensionable knotless mechanism used in the Knotless SutureTak®, Corkscrew®, and FiberTak® anchors. Enhancing the trusted SwiveLock anchor design with this next-generation knotless technology provides a wide variety of applications for low-profile knotless configurations in rotator cuff surgery:

- Interlinked knotless medial pulley/rip-stop
- Independent medial mattress/rip-stop
- Lateral dog-ear reduction
- Delivery of interposition DBM grafts such as AlloSync™ Button
- Delivery of ArthroFLEX® dermal allograft for rotator cuff augmentation
- Upper border subscapularis repair with concomitant Loop ‘N’ Tack™ biceps tenodesis

SpeedBridge™ Repair With Knotless Medial Pulley

Implant 2 Knotless SwiveLock anchors into the medial row of the humerus. Pass the FiberTape® sutures through the cuff and, through a separate pass, shuttle the knotless sutures through the cuff with the FiberLink™ stitch. This separate pass helps prevent twists in the construct as it is difficult to identify suture issues on the underside of the cuff. Shuttle the repair stitch from each anchor into the opposing anchor, creating the knotless interconnected medial pulley. Tension the repair sutures, reducing and fixating the tendon into position. The FiberTape sutures can then be fixated laterally, completing the SpeedBridge repair.

**NOTE:** A medial pulley rip-stop can also be created by passing the sutures lateral to the passed FiberTape sutures.

SpeedBridge Repair With Knotless Lateral Dog-Ear Reduction

Pass the repair sutures from the lateral Knotless SwiveLock anchors through the tendon anterior and posterior of the SpeedBridge repair. Shuttle these sutures into their corresponding anchors and tension them under direct visualization for knotless dog-ear fixation.

*ArthroFLEX is a registered trademark of LifeNet Health.
ATFL Repair With InternalBrace™ Ligament Augmentation

**Purpose**

To report the clinical outcomes of pain, function, and quality of life for patients who underwent lateral ligament disruption with instability using the InternalBrace Ligament Augmentation Repair Kit.

**Method**

The inclusion criteria for this analysis were patients enrolled in the Surgical Outcomes System™ global registry who underwent ATFL InternalBrace ligament augmentation. Standard patient-reported outcomes questionnaires for VAS, Foot and Ankle Ability Measure (FAAM) - Sports Subscale, and Foot Function Index (FFI) were administered at standard time points postoperatively. Results were reported from presurgery to 2 years postsurgery. The number of patients included per group is shown below.

<table>
<thead>
<tr>
<th>Time Point</th>
<th># of Compliant ATFL InternalBrace Ligament Augmentation Patients/Total Patients</th>
</tr>
</thead>
<tbody>
<tr>
<td>Presurgery</td>
<td>163/207</td>
</tr>
<tr>
<td>2 weeks</td>
<td>176/228</td>
</tr>
<tr>
<td>6 weeks</td>
<td>182/221</td>
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<tr>
<td>6 months</td>
<td>129/181</td>
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<tr>
<td>1 year</td>
<td>108/162</td>
</tr>
<tr>
<td>2 years</td>
<td>77/119</td>
</tr>
</tbody>
</table>

**Results**

**Trend Conclusion**

Based on these results, the pain, function, and quality-of-life scores of ATFL InternalBrace ligament augmentation appear to trend towards lower pain and improved function. However, no claims can be made on the potential of these results without further analysis to determine statistical significance.

**Reference**


https://surgicaloutcomesystem.com

Scope This Out is an informational newsletter designed to educate orthopedic surgeons on new products, state-of-the-art surgical procedures, and “pearls” to assist in improving surgical skills.

Arthrex’s Corporate Headquarters is located in Naples, Florida. Additional locations include a global division in Munich, Germany as well as several subsidiaries and distribution centers throughout the world.

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