

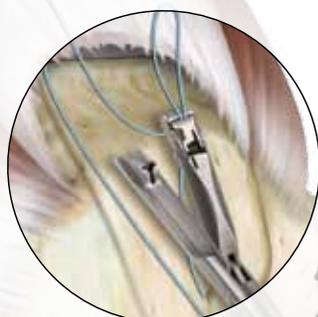
SCOPE THIS OUT

A Technical Pearls Newsletter for Arthroscopists.....

FastPass Scorpion

Grasp, Pass, and Retrieve . . .

The new FastPass Scorpion Suture Passer has a unique suture capturing mechanism to automatically retrieve FiberWire after passing through tissue. Available in both single and MultiFire versions.



“The FastPass Scorpion is without question my favorite and most reliable suture passer. Its self-capturing upper jaw helps to avoid misfires and simplifies suture passage, particularly for a surgeon who does not have an assistant. It is by far the best instrument for “blind” passes through the upper subscapularis, where visualization is often limited. Also, it is very effective in passing suture through “floppy” tendon segments during double interval slide repairs. For me, the FastPass Scorpion is an indispensable instrument that has dramatically simplified suture passage and suture management.”

– Stephen S. Burkhart, M.D.

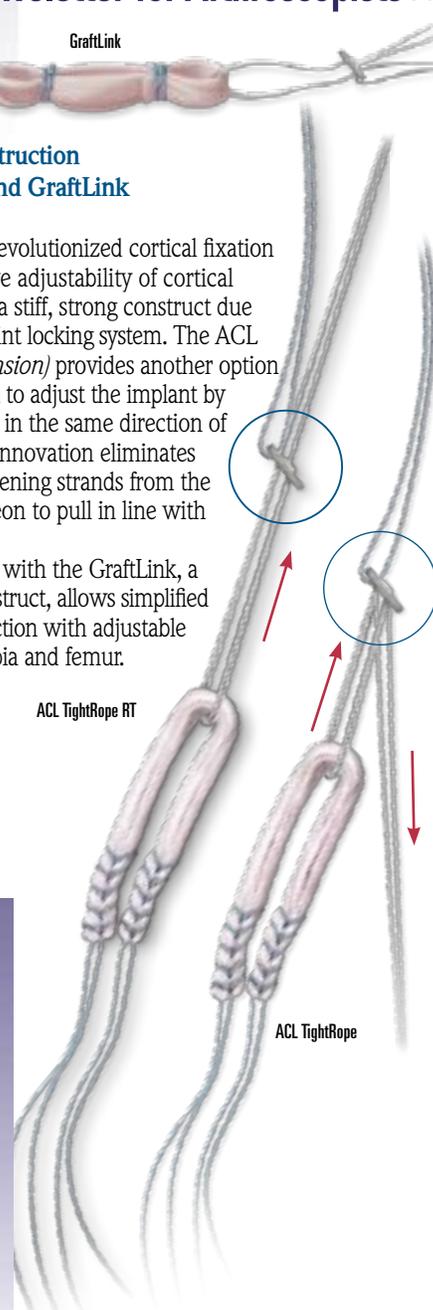
GraftLink

All-Inside ACL Reconstruction with ACL TightRope and GraftLink

The ACL TightRope has revolutionized cortical fixation by allowing intraoperative adjustability of cortical fixation, while providing a stiff, strong construct due to the proprietary four-point locking system. The ACL TightRope RT (*reverse tension*) provides another option which allows the surgeon to adjust the implant by pulling tensioning strands in the same direction of graft advancement. This innovation eliminates the need to retrieve shortening strands from the joint and allows the surgeon to pull in line with graft advancement.

Using the ACL TR RT with the GraftLink, a continuous loop graft construct, allows simplified All-Inside ACL Reconstruction with adjustable cortical fixation on the tibia and femur.

ACL TightRope RT



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PRODUCT INFO

Upper Extremity

3.5 mm PEEK Vented SwiveLock

Knotless SwiveLock technology is now available for glenohumeral joint instability procedures. The new 3.5 mm x 14.8 mm SwiveLock is sized and used similarly as the popular 2.9 mm x 15.5 mm labral PushLock. Sutures are passed through the labrum and loaded through the SwiveLock eyelet. A bone socket is drilled and the SwiveLock is inserted until the anchor body contacts bone, carrying the sutures to the bottom of the bone socket. Suture tension is visualized and adjusted as desired. The sutures are locked into position as the threaded anchor body is advanced into its final position.

No need for complex or time-consuming knot tying! A BioComposite version is planned for release Spring 2011.



3.5 mm x 14.8 mm PEEK SwiveLock - for labral repair

4.75 mm x 19.1 mm PEEK SwiveLock - for cuff repair

FiberTape Instruments

A series of instruments has been created to make FiberTape management easy during rotator cuff repair. The FiberTape Retriever was created to work much like a KingFisher, allowing FiberTapes to either slide easily or be firmly grasped by its closed jaws. The FiberTape Penetrator is available in both a straight and 15° up bend configuration. It allows for easy retrieval of FiberTapes or multiple FiberWires through tissue. It also features a notch near the tip, which allows for firm grasping of a suture, to allow direct passage. Lastly, the FiberTape Cutter has been designed to cut two FiberTapes at once, quickly and cleanly, leaving no tail. All are available with either ring or WishBone handles.



FiberTape Retriever

FiberTape Penetrator

FiberTape Cutter

BioWire

BioWire is the first next generation suture combined with collagen approved in the U.S. This suture is comprised of a 4" strip of type 1 bovine collagen contained within a white polyester #5 sleeve. The white sleeve merges into two tails of blue #2 FiberWire to support easy suture management. Ideal for use in knotless applications using PushLocks and SwiveLocks.



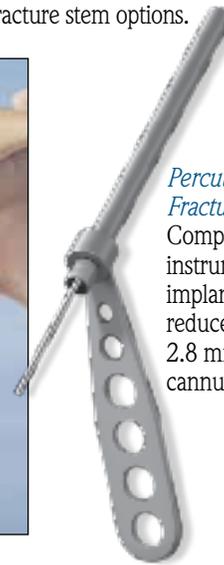
Humeral Fracture Solutions

Arthrex now offers a complete humeral fracture product line complete with pinning, plating, and fracture stem options.



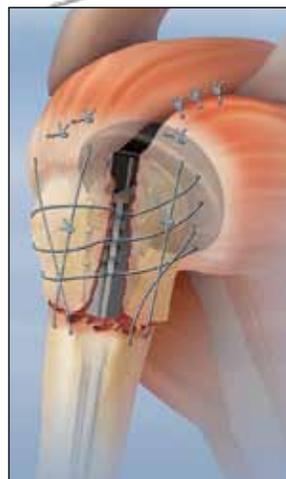
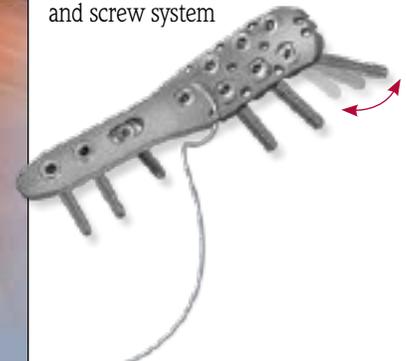
Percutaneous Fracture Repair

Complete set of nested instrumentation and implants to percutaneously reduce and fixate, using 2.8 mm pins and 4.5 mm cannulated screws



SuturePlate

Anatomically designed, low profile, titanium, polyaxial locking plate and screw system



Uniers Fracture Stem

Intraoperative head height adjustability with multiple tuberosity fixation points for anatomic reconstruction



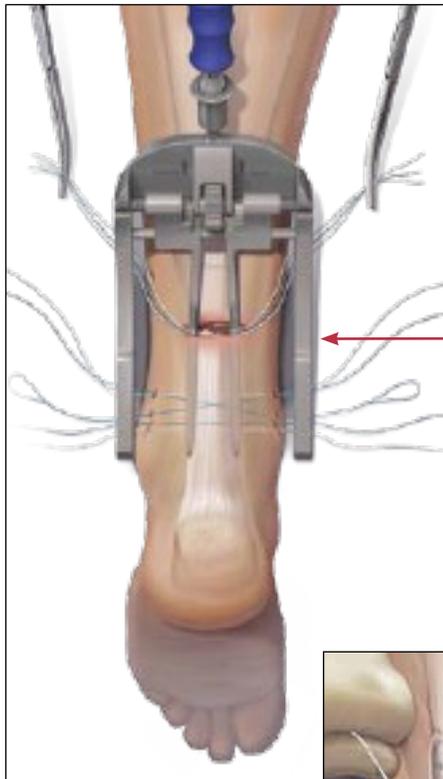
FiberWire Suture Kit available for soft tissue and tuberosity repair

Distal Extremities



PARS Achilles Jig Repair System with Locked Suture Technology

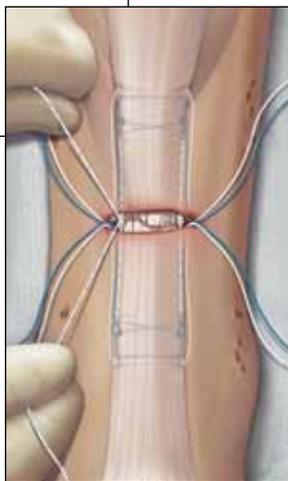
The minimally invasive PARS Achilles System gives the surgeon the ability to place locked sutures across the tendon for added strength and a more reliable repair. The contoured guide with handle allows for easy placement around both sides of the ruptured tendon with only a small incision, minimizing wound-healing risks. Consistent and reliable capture of the tendon is simple with the numbered system and accurate targeting through the Jig. In addition, the color-coded FiberWire suture comes in one convenient kit and provides the surgeon with the reliability of the strongest suture on the market and easy suture management.*



Unique numbering system for creation of locked suture and simplification of the steps



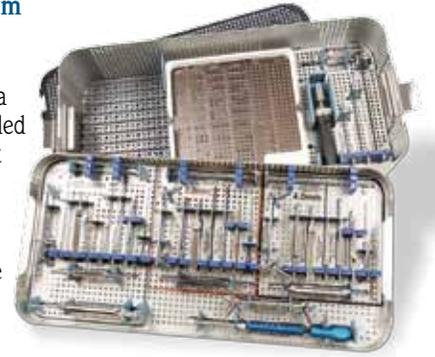
Reapproximation of the tendon with three #2 FiberWire sutures on both sides of the repair



*data on file

Cannulated Screw System Instrument Set

The small screw system is a cannulated, partially-threaded titanium screw system that is indicated for use in bone reconstruction, osteotomy, arthrodesis, joint fusion, fracture repair, and fracture fixation of bones appropriate for the size of the device. With self-drilling and self-tapping, headed and headless compression screws in diameters ranging from 2 mm to 4 mm, the small Cannulated Screw System Instrument Set provides extensive versatility for surgical procedures of the foot and hand, all-in-one comprehensive system. All of the screws are manufactured from titanium to provide consistent strength. The screws are Type II anodized, which is the most superior material on the market. Pilot drills, Countersinks, and drivers have corresponding color-coded banding to match screw diameter, simplifying the pairing of instrumentation with screw selection. While the screws are self-drilling, Cannulated Drill Bits are included for use in hard cortical bone, when an oblique approach is desired, or when bicortical fixation is required.



Pre-op Pilon Fracture



Post-op Bilateral use of the Distal Fibular Plates

Ankle Fracture System

The Ankle Fracture System continues to provide surgeons with multiple fixation options to treat a variety of fracture patterns in the ankle. Developed to be the most comprehensive set available for the treatment of common injuries, the Ankle Fracture System has allowed surgeons the options and flexibility they need in the operating room. Improved basic small fragment instrumentation, locking screw technology and the simplicity of this set give surgeons and OR staff the confidence to handle variables outside the surgeon's control.

In the x-rays above, Troy Watson, M.D., of Desert Orthopaedic Center in Las Vegas, NV used a right (lateral) and left (medial) Distal Fibular Locking Plate in combination with 2.7 mm locking, 3.5 mm cortical and partially threaded 4 mm screws to fixate a Pilon Fracture.

PRODUCT INFO
Knee and Hip

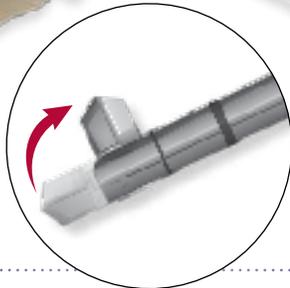
FlipCutter II

Arthroscopic drilling with the push of a button!

The new FlipCutter II changes from a drill pin to a retrograde reamer by simply pushing a button and sliding the blue housing forward, eliminating the need to manually flip the blade inside the joint.

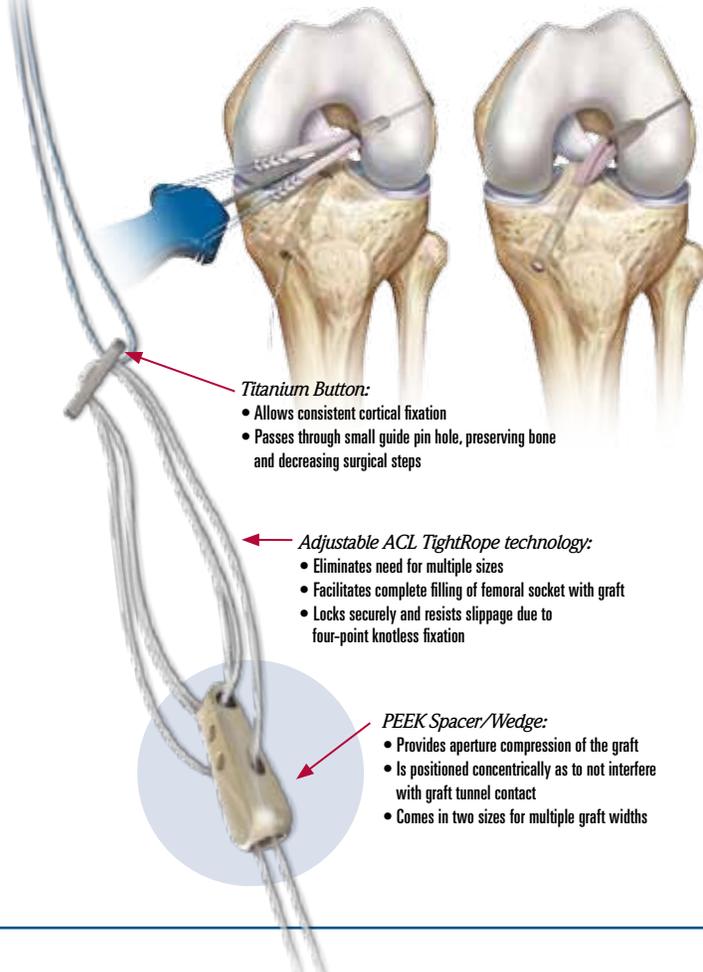
Retrograde reaming with FlipCutter II is ideal for hard to reach spots such as PCL and makes "retrodrilling" faster and simpler.

Use FlipCutter II for anatomic, minimally invasive ACL reconstruction with RetroConstruction Guides, PCL reconstruction and meniscal root repair



ACL Reconstruction with TightRope DB

The TightRope DB offers the simplicity and strength of the ACL TightRope, with the addition of aperture graft compression and greater coverage of the ACL footprint. The ACL TightRope DB comes with a disposable driver to facilitate graft advancement and orientation.



Titanium Button:

- Allows consistent cortical fixation
- Passes through small guide pin hole, preserving bone and decreasing surgical steps

Adjustable ACL TightRope technology:

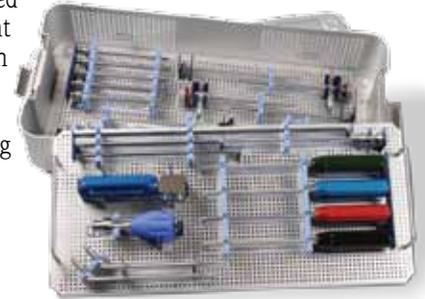
- Eliminates need for multiple sizes
- Facilitates complete filling of femoral socket with graft
- Locks securely and resists slippage due to four-point knotless fixation

PEEK Spacer/Wedge:

- Provides aperture compression of the graft
- Is positioned concentrically as to not interfere with graft tunnel contact
- Comes in two sizes for multiple graft widths

New Hip Arthroscope Instrument Set

The hip arthroscope set was designed with a clear focus on accurate and safe hip joint access during hip arthroscopic procedures. This comprehensive set of instruments includes 30° and 70° arthroscopes with inflow/outflow sheaths, as well as an innovative quick-connect locking cannula and bridge system that allows for quick portal switching. The included metal cannulas, in sizes ø4.5 mm - ø6.5 mm in half mm increments, feature an anatomy-conforming and atraumatic rounded tip design. They are color-coded to match their respective blunt tip cannulated obturator, which facilitates quick and safe insertion over a flexible guide wire. The set also includes long cannulated 4 mm Switching Sticks and an ergonomic set of Telescoping Portal Dilation Sleeves that facilitate creating or maintaining portals.



PRODUCT INFO
Imaging & Resection

PowerPick XL

Building from the success of the standard PowerPick, which provides a fast and easy method for performing microfracture procedures using the APS II Shaver System, the PowerPick XL features a drill depth of 6 mm. This allows for adequate penetration into subchondral bone, even when perpendicular position of the drill tip is difficult to achieve.

The PowerPick XL is available in a standard working length of 13 cm and a hip length of 19 cm. Both provide a tip angle of 45° and a drill diameter of 1.5 mm. The standard length PowerPick XL is also an ideal tool for measuring osteochondral defects using the leading edge of the laser mark, which is 5 mm from the sheath end, as a guide.

Another useful application is to mark the femoral tunnel location in ACL reconstruction procedures by using the drill tip to mark the tunnel location within the femoral notch. Using the 2 mm wide laser mark, the approximate tunnel location can be determined through the medial portal by placing the end of the sheath at the over-the-top position. The trailing edge of the laser mark, which is 7 mm from the end of the sheath, is used to reference the center of the tunnel in a single bundle ACL technique. The leading edge of the laser mark, which is 5 mm from the end of the sheath, is used to reference the center of the posterior tunnel in a double bundle ACL technique. After marking its position, the same measurement method is used to reference the center of the interior tunnel referenced from the previously marked posterior tunnel position.



Pointers & Pearls

PowerPick and PowerPick XL

The PowerPick and PowerPick XL, used in conjunction with the APS II Shaver System, provide a fast and easy method for performing micro-drilling procedures used in the treatment of articular cartilage, measuring chondral defects or even marking femoral tunnel locations for single and double bundle ACL procedures. The PowerPick features a retractable $\varnothing 1.5$ mm drill to facilitate percutaneous entry into the joint space. The tip of the outer shaft is available in 30° and 45° curves to facilitate placement and access to pathology in a variety of operative sites. Once inside the operative site, the drill tip is exposed by pressing a lever on the base of the device and it is ready for use in drilling operations.

Pointers & Pearls for optimal use of the PowerPick:

Heat Necrosis

A common question when using the PowerPick to perform a micro-drill procedure to treat damaged articular cartilage, is if there is any potential for heat necrosis. However, research has shown that the use of a micro-drill, such as the PowerPick, does not produce any more heat necrosis than using a manual pick.¹ This same research has shown that the walls of the holes created are not sealed with the use of a micro-drill like they are when using a manual pick. This sealing reduces the amount of trabecular stroma from subchondral bone into the affected area. Arthrex has continued this research which, to date, has been shown to support the previous research. A summary of that research can be found in the Research Corner section of this publication.

Speed

The PowerPick performs more smoothly and accurately at higher speeds, so we recommend using it at 6,000 rpm in forward or reverse.

Position

For maximum drill depth, position the drill tip perpendicular to the bony surface. The PowerPick is not intended to drill through articular cartilage. Doing so will reduce the penetration depth of the drill tip in bone. Due to space limitations or pathology location, it may not be possible to achieve this position in all cases. It is for this reason that Arthrex has developed the PowerPick XL. Its 6 mm drill depth more easily accommodates angular deviation and still accomplishes the goal of the procedure. It is recommended that you have both the standard and XL versions available for use, allowing you the flexibility to choose the optimal device.

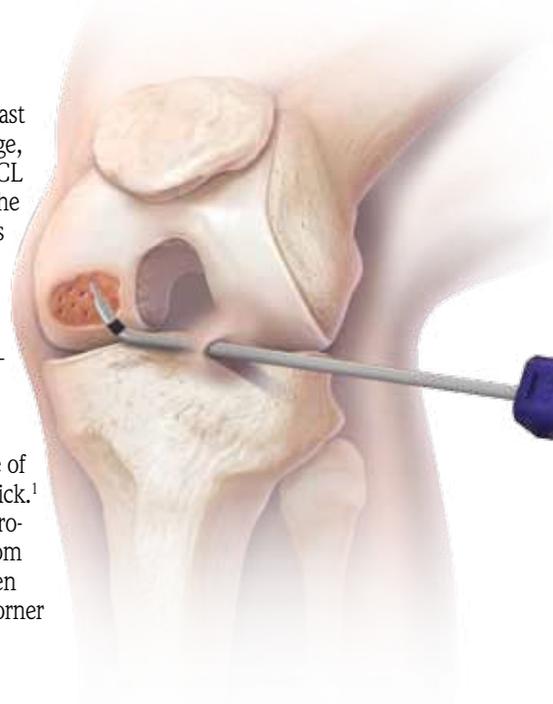


Image to the right depicts perpendicular drill tip position - tip hovering over the drill site



Image to the left depicts angular drill tip position preventing maximum drill depth

Accuracy

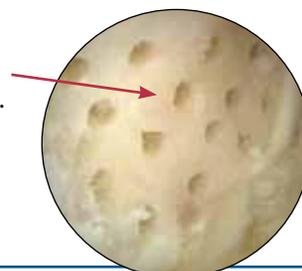
Do not engage the drill tip in bone before applying power to the shaver handpiece. It is likely that the drill tip will “walk” when power is applied. Have the drill tip positioned so that it hovers over the intended drill site and your drill holes will be more accurately placed.

Stopping

Avoid stopping the PowerPick once you have begun the drilling operation. It may be possible to break the drill tip if the drill tip is stopped while still in bone. If breakage occurs, the device is designed to break within the outer shaft so that the tip is prevented from falling into the joint space.

Multiple Holes

Most often, microfracture procedures require many holes to accomplish the task. With the PowerPick, the holes can be created more closely together without damaging the surrounding areas or violating previously created holes.

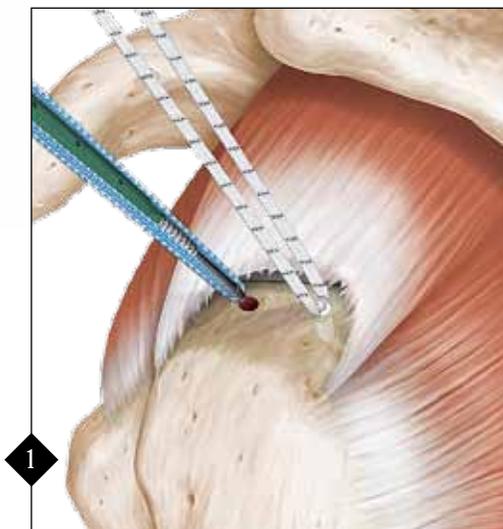
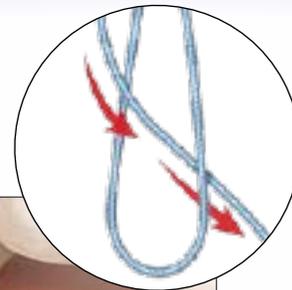


1. Poster exhibit presented by H. Chen, et al, 54th Annual Meeting of the Orthopaedic Research Society, poster titled “A Comparative Study of Microfracture and Drilling Surgical Techniques for Cartilage Repair”.

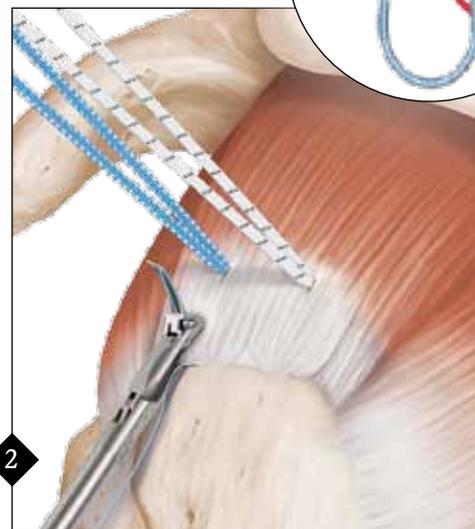
IN THE Loop

SpeedBridge Knotless Dog-ear Reduction using FiberLink

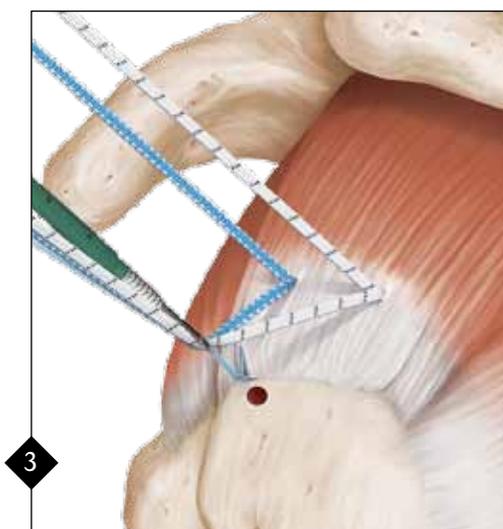
FiberLink is constructed from #2 FiberWire and transitions from a single strand to a loop on the end. For the SpeedBridge, it can be used with a Scorpion Suture Passer to easily shuttle the FiberTapes through the rotator cuff. The FiberLink can be incorporated into the repair to proactively address any potential anterior or posterior dog-ears.



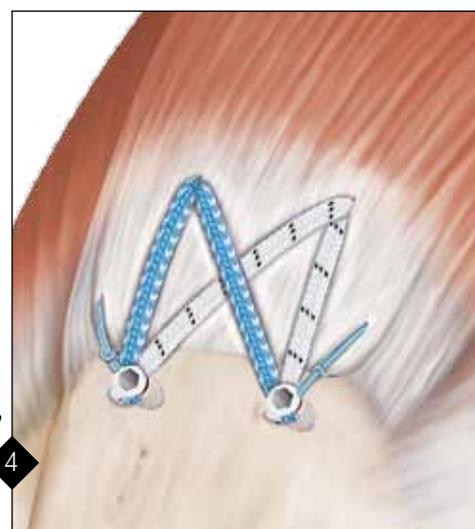
1 Insert the medial row SwiveLocks at the articular margin. Pass the FiberTapes medially.



2 Pass the tail of the FiberLink through the location of the anticipated dog-ear using a FastPass Scorpion. Pass the tail of the FiberLink through its loop to create a cinch stitch. Note that this stitch can be used as a traction stitch to help position the cuff in preparation for final tensioning.



3 Load the FiberLink along with one anterior/medial and one posterior/medial FiberTape through the SwiveLock eyelet. Complete lateral anchor insertion normally, making sure to adjust tension in each suture limb individually.



4 Repeat for the other lateral anchor to complete a dog-ear free repair.

What's in My Bag?



Featuring Kyle Anderson, M.D.
Director, Beaumont Sports Medicine Fellowship and Head Team Physician, Detroit Lions

All-Inside ACL Reconstruction with ACL TightRope and GraftLink

Q. What is the newest trend in All-Inside ACL Reconstruction for your practice?

A. Over the past few years, developments in these procedures have focused on improving mechanical strength of the constructs, while becoming less and less invasive. So a few years ago, we started doing All-Inside ACL Reconstruction with RetroCutters and RetroScrews on the tibia. This produced much less pain and swelling than the old autograft procedures with either patellar tendon or hamstrings. But, clearly, the trend these days is to the optimal biologic environment for healing. That is where the GraftLink procedure for All-Inside ACL Reconstruction may provide a big leap forward. In the procedure, a quadruple-looped hamstring graft is fixed with an ACL TightRope at each end.

Q. What are the benefits of the GraftLink procedure?

A. Here we are using a single semitendinosis graft in most cases, folded to produce a relatively shorter, thicker graft that is “potted” into a socket rather than placing the graft into a full tunnel that requires aperture fixation. Thus, only the graft occupies the socket with no need for interference screws or other fixation that may disturb the initial healing environment. By “potting” the graft in a shorter socket, we are potentially minimizing synovial infiltration into the sockets. I’ve also found that this technique can be technically very reproducible since the GraftLink construct is easy to pass into the joint and allows the ability to “titrate” how much graft I put in the femur and tibia. The TightRope also allows incremental graft tensioning from both the femur and the tibial side.



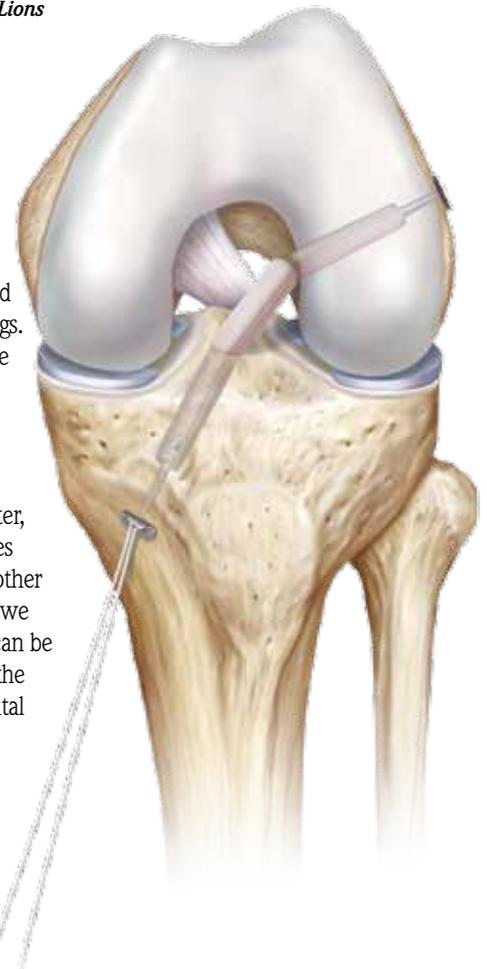
Q. The continuous looped graft or “GraftLink” is a new concept for most surgeons. How does this compare to standard graft preparation and strength?

A. In the lab, we tweaked the graft numerous ways so that we had a construct that not only would be comparable to traditional constructs like an autograft, but also would hold up very well to repetitive loads. So, now we have a minimally invasive technique that can perform as well or better than older methods.

Q. Are there any important surgical pearls to keep in mind for this procedure?

A. **Yes - a few simple ones:**

1. When preparing the graft, the tails can be brought into the inner part of the loop and suture can be tied such that these are toward the inside of the graft. This facilitates passing the graft into the sockets and keeps the suture out of the interface between the graft and the socket.
2. Set the graft length around 5 mm shorter than ideal, since it will tend to stretch during the pretensioning. Also, pretensioning is very important for this procedure.
3. When drilling the femoral socket - *make a note of the interosseous length*. This can be marked on the femoral TightRope. This makes it easier to get a sense of when the button should be getting through the cortex. It is also very helpful in avoiding pulling the button too far into the soft tissues.
4. Keep tension on the graft, while pulling the button into the femur for the same reason.
5. Pull the graft only a few millimeters into the femur. Advance the tibial end of the graft into position (*each end of the graft will be sequentially tightened into its socket, in whatever knee position desired*).



FlipCutter

Comparison of Microfracture Holes using PowerPick vs. Chondro Pick

Microfracture is one of the most common procedures in sports medicine to heal cartilage defects and reduce knee pain. Yet, the success rate is very much dependent on the surgeon's technique, from the awl or pick used to create the holes, to the depth and quality of the holes. Arthrex has its own line of Chondro Pick products to create microfracture holes in the knee, shoulder and hip; these have been quite successful. However, the need still exists for more control over creation of microfracture holes within the defect. The benefit of drilling microfracture holes has been demonstrated in the literature¹, and Arthrex created a product to respond to that. The PowerPick easily attaches to the APS II Shaver System, so it is simple to switch out instruments during the surgical procedure. Simple steps allow the surgeon to create multiple microfracture holes in a controlled manner, with a set diameter and set depth. In addition, the PowerPick is available at 30° and 45° angles for use with different pathologies.

A pilot study was conducted in human cadavers to compare the microfracture holes created using PowerPick and Chondro Pick. Cartilage defects were created using a Curette in the medial and lateral femoral condyle of the knee. Care was taken not to penetrate the subchondral bone layer underneath. In each defect, four rows of three consecutive microfracture holes were created as shown in Figure 1. After creation of the holes, the defects were removed from the condyles and stored in 10% neutral buffered formalin. The samples were then prepared for histological analysis, using Hematoxylin and Eosin staining to look at the structure of the holes and the existence of compacted bone within the holes. The PowerPick holes are quite well-defined and clean, compared to the more jagged nature of the Chondro Pick holes (Figure 2). Qualitatively, there was more compacted bone within and adjacent to the Chondro Pick defects compared to the PowerPick defects. Initial measurements also show similar amounts of empty osteocyte lacunae for PowerPick and Chondro Pick, which demonstrates that PowerPick does not create additional thermal damage and/or cell death due to heat. Therefore, this pilot study shows the benefits of the PowerPick to create controlled microfracture holes for more optimal cartilage healing.* Future work includes expanding the number of samples and creating the defects in a live animal model.

*data on file

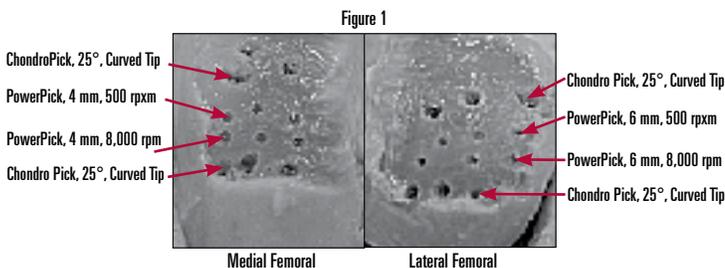


Figure 2. Chondro Pick (left) vs. 6 mm depth PowerPick (right) run at max speed 8,000 rpm



Reference:
1. Chen H, Sun J, Hoemann CD, Lascau-Coman V, Ouyang W, McKee MD, Shive MS, Buschmann MD, *Drilling and microfracture lead to different bone structure and necrosis during bone-marrow stimulation for cartilage repair*, Journal Orthop Res 2009; 27(11): 1432-8.

STO Featured Product Information

FastPass Scorpion Suture Retriever, single.....	AR-13997SF
MultiFire FastPass Scorpion Suture Retriever	AR-13997MF
ACL TightRope RT	AR-1855RT
ACL TightRope.....	AR-1855T
Vented SwiveLock, 3.5 mm x 14.8 mm.....	AR-AR-2325PSLC
BioComposite SwiveLock.....	AR-2324BCC
FiberTape	AR-7237-7
TigerTape	AR-7237-7T
FiberTape Retriever, SR, NR and WishBone.....	AR-13974SR, NR, W
Penetrator FiberTape Retriever, 15° up curve.....	AR-2167-3
Penetrator FiberTape Retriever, straight.....	AR-2167ST-3
FiberTape Cutter	AR-13250
FiberTape Cutter w/WishBone Handle.....	AR-13250W
BioWire.....	AR-7260
Single Guide, for Percutaneous Pinning.....	AR-2511
Humeral SuturePlate, 3-hole	AR-14000
Humeral SuturePlate, 5-hole	AR-14000L
Humeral Fracture Stems, 8 mm - 13 mm.....	AR-9100-8F - 13F
FiberWire Suture Kit	AR-7219
PARS Achilles Jig	AR-8860J
PARS Achilles Jig Instrument Set.....	AR-8860S
PARS Achilles Jig Suture Kit.....	AR-8860DS
Cannulated Screw System Instrument Set.....	AR-8737S
Ankle Fracture System	AR-8943S
FlipCutter IIs, 6 mm - 13 mm	AR-1204AF-60 - 130
ACL TightRope DB, 7 mm wedge.....	AR-1588TDB-7
ACL TightRope DB, 9 mm wedge.....	AR-1588TDB-9
Hip Arthroscope Instrument Set.....	AR-6575S
PowerPick XL, 45°, ø1.5 mm x 13 cm.....	AR-8150PX-45
PowerPick XL, 45°, HL, ø1.5 mm x 19 cm	AR-6150PX-45
PowerPick, 30°.....	AR-8150PP-30
PowerPick, 45°.....	AR-8150PP-45
Adaptateur Power System II Set.....	AR-8300S
FiberLink.....	AR-7235
FlipCutters, 6 mm - 13 mm.....	AR-1204F-60 - 130
Chondro Picks, 20°, 40°, and 50°.....	AR-1761 - 63
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For more information or to order, contact your Arthrex representative or call Customer Service at 800-934-4404.



Scope This Out is an informational newsletter designed to educate orthopaedic surgeons on state-of-the-art surgical procedures and "pearls" to assist in improving surgical skills. This newsletter is published quarterly by Arthrex, Inc., exclusively for the orthopaedic surgeon community.

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