Acetabular Labral Repair using the PushLock® Knotless Anchor System

Surgical Technique
Acetabular Labral Repair using the PushLock Knotless Anchor System

Diagnosis of acetabular labral tear pathology is mostly clinical and presents in a similar manner as meniscal pathology in the knee. Patients can present with complaints of mechanical symptoms such as popping, painful clicking and catching and demonstrate a reduced range of motion of the hip.

Prior treatment guidelines suggested that debridement and resection of the torn labral tissue was appropriate for pain relief. Though effective, this often compromised the function of the acetabular labrum.

Longitudinal, peripheral and intrasubstance tears are amenable to repair. By repairing the torn labrum, the following physiological functions can be preserved:

* Joint Compressive Forces
* Cartilage Consolidation
* Vacuum Sealing Mechanism
* Joint Stability and Congruity

Imaging Studies

Magnetic resonance arthrography (MRA) is currently the most sensitive method for imaging a labral tear.

Portal Placement

Repair of the acetabular labral tear is performed through the anterolateral and standard anterior portals in many cases. Establish the anterolateral portal first for the arthroscope using a percutaneous approach with or without fluoroscopic guidance. Once a spinal needle is in place in the joint using a “loss of resistance” method, a long Nitinol wire is advanced through the spinal needle and the needle is removed.

A cannulated Obturator, used in conjunction with the arthroscope sheath, is passed over the wire and into the joint. Once the wire and cannulated Obturator are removed, the scope can be placed through the sheath and into the joint. Establish the anterior working portal under direct arthroscopic visualization in an outside/in fashion using a spinal needle, being mindful of neurovascular structures in the vicinity. These portals can be atraumatically enlarged to accommodate varying cannula sizes by using the Portal Dilation System. Additionally, in cases of tough capsule resistant to dilation, a Banana Blade can be inserted through the cannula and capsulotomy performed to accommodate cannulas and instruments.
Insert the 15° up curved Penetrator™ Suture Retriever w/WishBone™ Handle, preloaded with #2 FiberWire®, into the cannula. Pass the sharp tip through or around the capsulolabral complex near the pilot hole until the tip is visualized exiting near the acetabular face.

Release the #2 FiberWire that is now forming a loop and back the Penetrator tip out of the tissue, but not out of the joint. Reach over the labrum and retrieve the #2 FiberWire loop and pull it out of the cannula.

Drop both free limbs of the FiberWire outside of the cannula through the retrieved loop and pull the free ends. This will form a “cinch” stitch around the labrum for added stability.

An alternative step to passing suture around the labrum is advancing a #2 FiberStick™ into the joint gently through a Crescent SutureLasso™. Remove the lasso, leaving the FiberStick in the joint. Through the cannula, retrieve the FiberStick using the KingFisher® Suture Retriever/Tissue Grasper. Both limbs of the FiberStick should be exiting the cannula.
ORDERING INFORMATION

Implants:
- Bio-PushLock, 2.9 mm x 10.7 mm          AR-1923BH
- BioComposite PushLock, 2.9 mm x 10.7 mm          AR-1923BCH
- PEEK PushLock, 2.9 mm x 10.7 mm          AR-1923PHS
- FiberStick, #2 FiberWire, 50” (blue), one end stiffened, 12” AR-7209
- TigerStick, #2 TigerWire, 50” (white/black), one end stiffened, 12” AR-7209T
- #2 FiberWire, 38” (blue) AR-7233

WishBone Hand Instruments:
- Suture Cutter, 2.4 mm, 220 mm w/WishBone Handle AR-16250W
- Suture Retriever, 15˚ up curved, 220 mm w/WishBone Handle AR-15551W
- KingFisher Suture Retriever/Tissue Grasper w/WishBone Handle AR-16970W
- Penetrator Suture Retriever, 15˚ up curved, 220 mm w/WishBone Handle AR-2267W-2

Required Instruments:
- Disposables Kit for 2.9 mm PEEK Hip PushLock AR-1923DHS
- Drill Guide, 3.5 mm Hip, saddle tip, with cannulated trocar AR-1907H-3.5
- Drill Guide, 3.0 mm Hip, saddle tip, with cannulated trocar AR-1949H-3.0
- Drill Guide, 2.9 mm Hip, fork tip AR-1325H-2.9
- Drill Guide, 3.5 mm Hip, fork tip AR-1325H-3.5
- Drill for 3.5 mm PushLock AR-1912
- Drill for 2.9 mm PushLock AR-1923DL
- Drill for 2.9 mm PushLock (hard bone) AR-1923D

Accessory:
- Reusable Obturator for AR-6540 and AR-6575-09 AR-6541

Disposables:
- Partially Threaded Cannula, 8.25 mm x 9 cm AR-6575-09
- Partially Threaded Cannula, 8.25 mm x 11 cm AR-6575-11
- SutureLasso for Hip Arthroscopy, crescent AR-4068CH

Outside of the joint, pass both limbs of the FiberWire through the tip of the PushLock anchor and slide the anchor down through the cannula. Push the tip into the pilot hole while keeping gentle tension on the suture limbs. Stop advancing the tip of the driver into the pilot hole when the main body of the anchor reaches the cortex. Note: Full tissue tension should be achieved at this time and the suture limbs can be relaxed. If the tissue tension is either too great or too relaxed, the anchor tip can be backed out of the pilot hole and proper tension can be achieved by pulling on or relaxing the suture tails.

Mallet the metal button on the back of the PushLock handle to advance the main anchor body over the driver tip and into the pilot hole, trapping the suture. Stop malleting when the black laser line on the distal anchor insertion shaft is flush with bone. Unscrew the handle from the anchor by turning the handle six complete counterclockwise revolutions then pull back.

Insert a FiberWire Suture Cutter into the joint and cut each suture strand flush with bone. Repeat this process if multiple anchors are required.
Quick, Simple and Reproducible Suture Anchor Placement

PushLock and Bio-PushLock Suture Anchor System

The PushLock is a knotless anchor designed to be used during stability procedures of the acetabular labrum. The unique two-piece PushLock design allows the surgeon to adjust the amount of tension on the tissue intraoperatively allowing for precise tissue reduction before advancing the anchor. The tissue is securely held in a knotless fashion to allow tissue healing to bone. The innovative anchor design and insertion method drastically reduce operative time by eliminating tissue tensioning guesswork, knot tying and suture management. The anchor is available in both an absorbable material (PLLA) and PEEK (polyetheretherketone). PEEK is a nonabsorbable, radiolucent thermoplastic material with outstanding biocompatibility and biostability characteristics.

The PushLock anchor was designed to work optimally in conjunction with FiberWire nonabsorbable high strength suture. High strength characteristics, along with significantly increased abrasion resistance, give the surgeon confidence that during the crucial suture passing and anchor placement stages suture breakage is virtually eliminated.
This description of technique is provided as an educational tool and clinical aid to assist properly licensed medical professionals in the usage of specific Arthrex products. As part of this professional usage, the medical professional must use their professional judgment in making any final determinations in product usage and technique. In doing so, the medical professional should rely on their own training and experience and should conduct a thorough review of pertinent medical literature and the product’s Directions For Use.