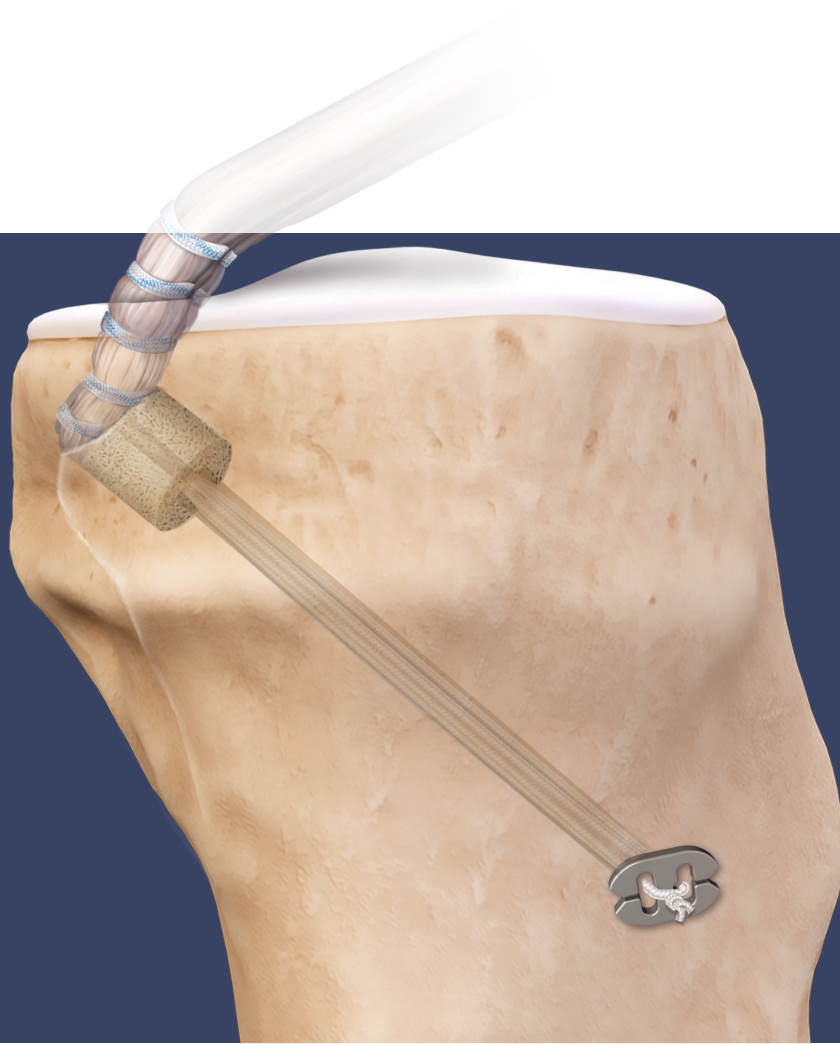


Arthroscopic Inlay PCL Reconstruction

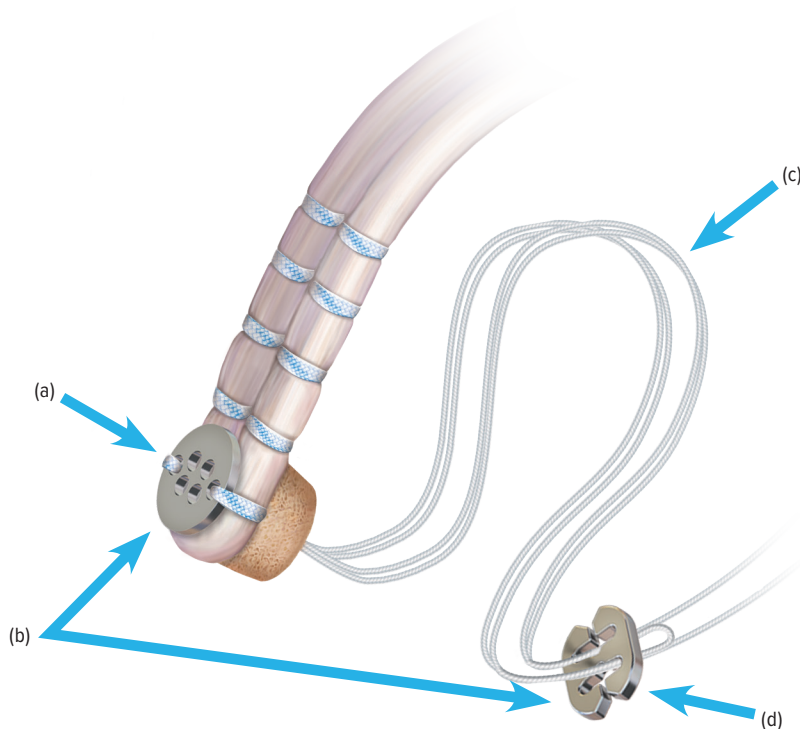
Surgical Technique



PCL Inlay Reconstruction

“PCL inlay reconstruction techniques have been shown to reduce the ‘killer turn’ created by transtibial constructs and may lead to less graft abrasion and better approximation of native biomechanics. The arthroscopic inlay PCL provides the benefits of both open inlay and arthroscopic transtibial techniques by combining the superior biomechanics of the open tibial inlay with the ease of visualization and decreased morbidity of an arthroscopic approach.¹ Our results from the use of the arthroscopic inlay technique have shown good success in our practice.”

- R. Brick Campbell, MD, and Jon K. Sekiya, MD

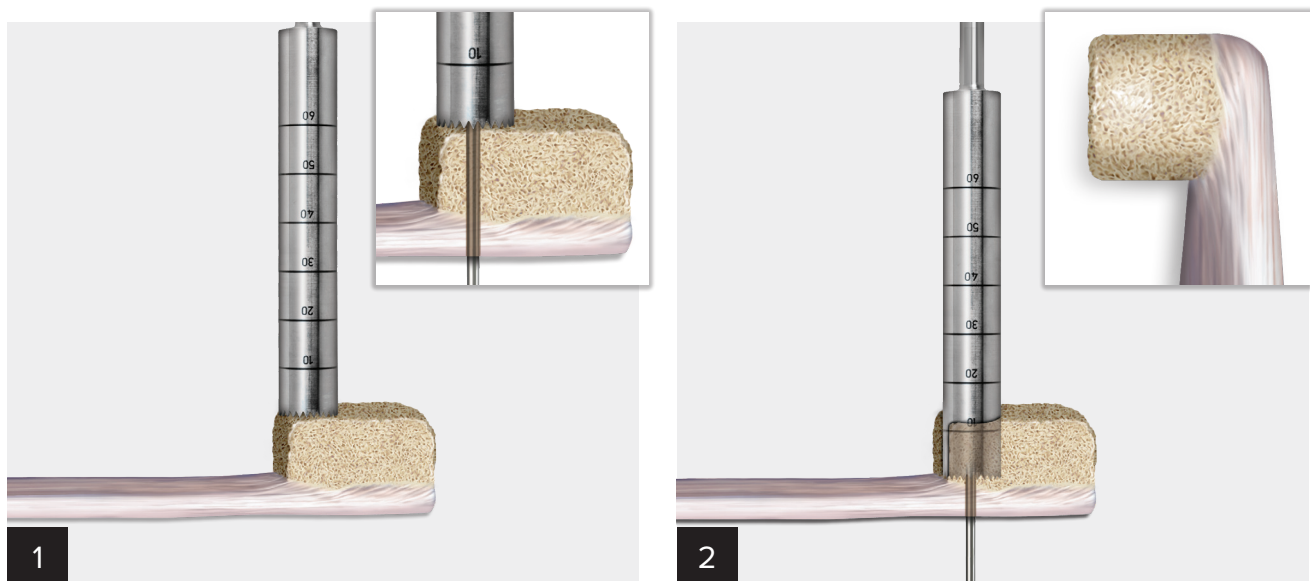


Features and Benefits

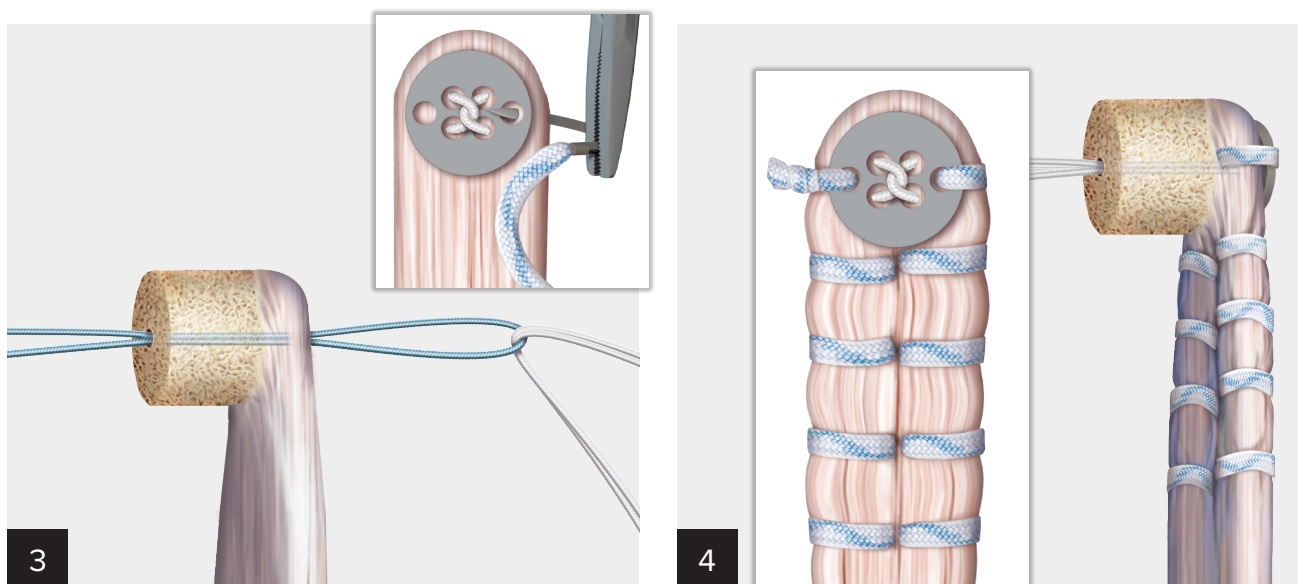
TightRope® technology has been incorporated into the unique PCL TightRope construct greatly simplifying graft preparation and passing, while strengthening fixation.

- A round graft button secures the bone plug into the tibial socket. Suture holes in the button allow incorporation of whipstitched sutures into the fixation, which facilitates graft passing and augments fixation (a).
- Dual buttons placed on opposite ends of the TightRope construct compress the graft into the tibial socket and lock securely into place (b).
- The TightRope construct includes a proprietary, self-reinforcing, 4-point locking system (c) that resists cyclic displacement.²
- A broad, attachable button is loaded onto the TightRope implant after tibial passing, allowing unobstructed passage of the graft and implant through the joint and larger button-to-bone contact on the anterior tibia (d).

Graft Preparation



To prepare the tibial side of the graft, place a 11 mm, 12 mm, or 13 mm coring reamer. **Note: Graft diameter will be 1 mm less than coring reamer size at the bone/tendon junction.** The diameter of the coring reamer allows visualization of the bone plug before cutting and acts as a guide for the 2.4 mm drill pin. After drilling through the bone block with the 2.4 mm pin, remove the pin and replace it with the collared pin. Drill the coring reamer through the bone plug. Stop drilling before contacting the tendon. If desired, a flat osteotome may be placed at the bone/tendon junction to protect the tissue during drilling. Remove the remaining bone with a small bone saw and/or rongeur. Place the bone plug into the sizing block to confirm diameter. Length can be measured with a ruler and should be 10 mm.



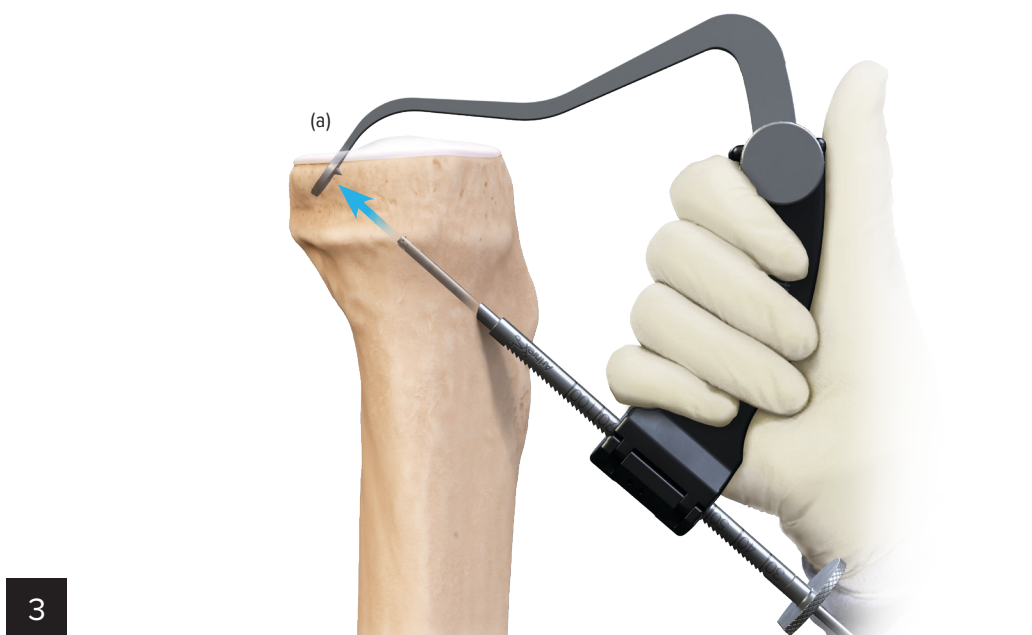
Place a passing suture inside the PCL TightRope® implant and pass through the hole in the bone block. Pull the button down tightly against the tendinous portion of the graft. Use the open holes in the button to stitch the button to the tendon with SutureTape.

Tibial Socket Preparation

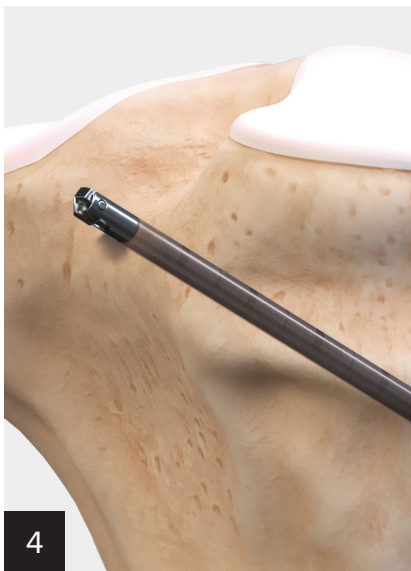
Place standard anteromedial (AM) and anterolateral (AL) portals, as well as a posteromedial (PM) portal. Place a partially threaded plastic cannula or PassPort Button™ cannula through the PM portal.



Place the tibial PCL reconstruction guide through the AM portal and over the PCL footprint. The 11 mm marking hook may be used to visually reproduce the footprint, or the 12 mm and 13 mm laser line markings may be referenced off the anterior edge of the footprint. Fluoroscopy may be used to confirm placement. **Note: The distal edge of the socket should be just proximal to the distal edge of the posterior facet. The guide pin should enter perpendicular to facet.** Push the drill sleeve against bone and note the intraosseous distance where the drill sleeve exits the guide (a), in this case, 50 mm.



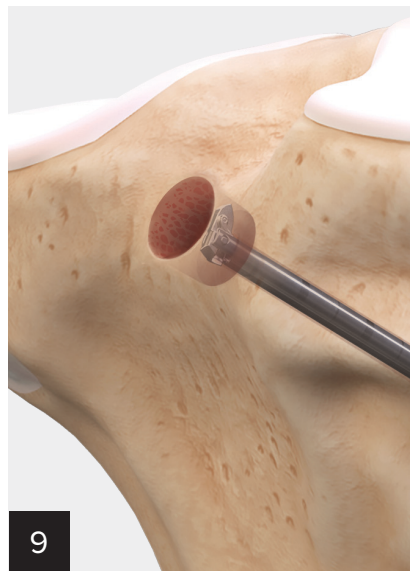
Insert the FlipCutter™ III drill into the stepped drill sleeve and begin drilling when the drill tip contacts the anterior cortex. Drilling may be completed under fluoroscopic guidance or direct arthroscopic visualization. Alternatively, the 2.4 mm drill sleeve may be used to place the 2.4 mm guide pin, and subsequently be “over-reamed” to 4 mm. The FlipCutter drill may be placed by hand through the predrilled tunnel.



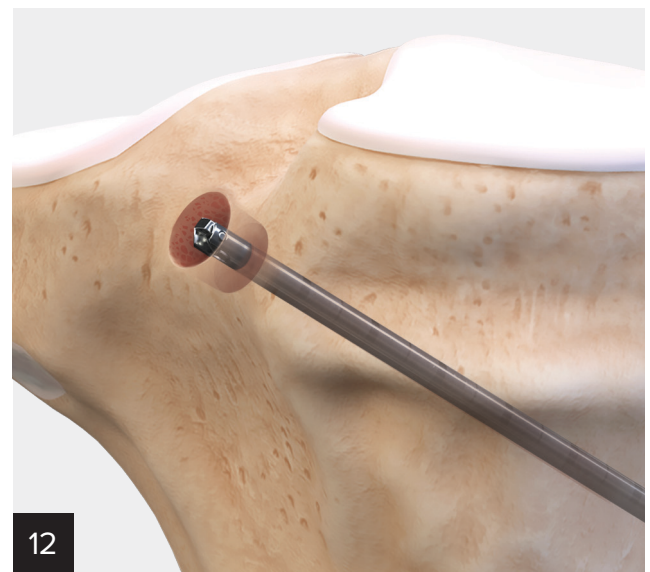
Once the FlipCutter™ III drill exits the posterior cortex, rotate the sizing wheel on the drill to the predetermined size to flip the cutting tip into retrograde reaming position.



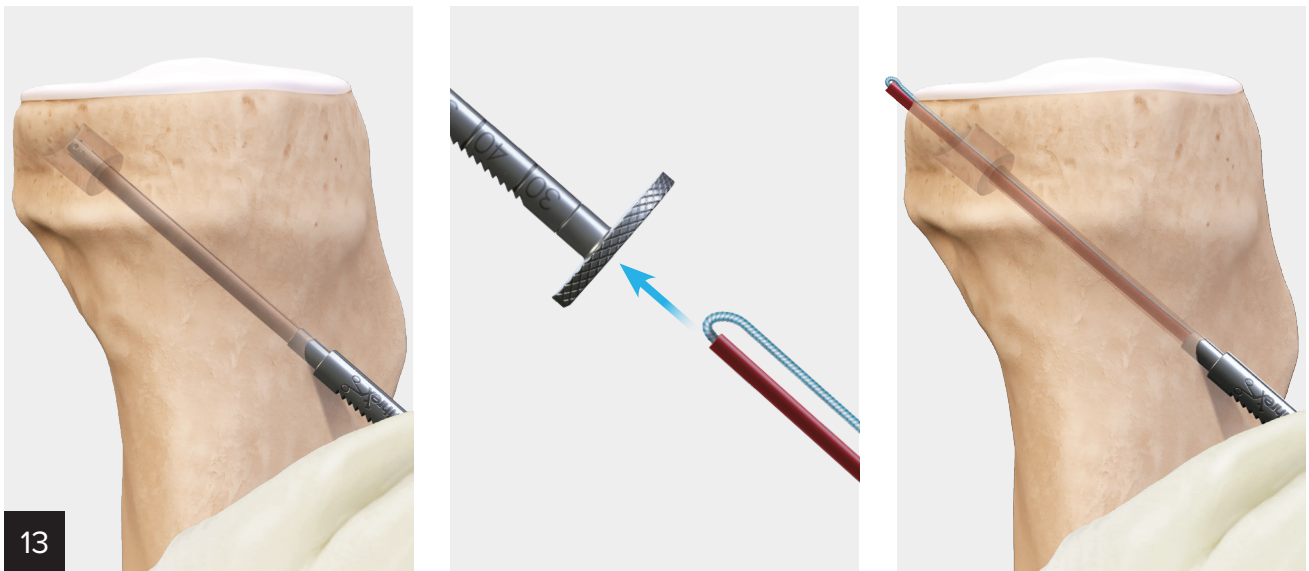
Use a mallet to tap the 7 mm tip of the stepped drill sleeve into bone. This will facilitate drilling and insertion of the passing suture after socket has been created.



Set the rubber ring against the drill sleeve. Drill (on forward setting) while pulling distally to create the socket.
Note: Ensure that the cutting tip is off of the bone before reaming. Socket depth can be quantified by counting the 5 mm markings between the drill sleeve and the rubber ring. Drill to a depth of 12 mm to 15 mm.

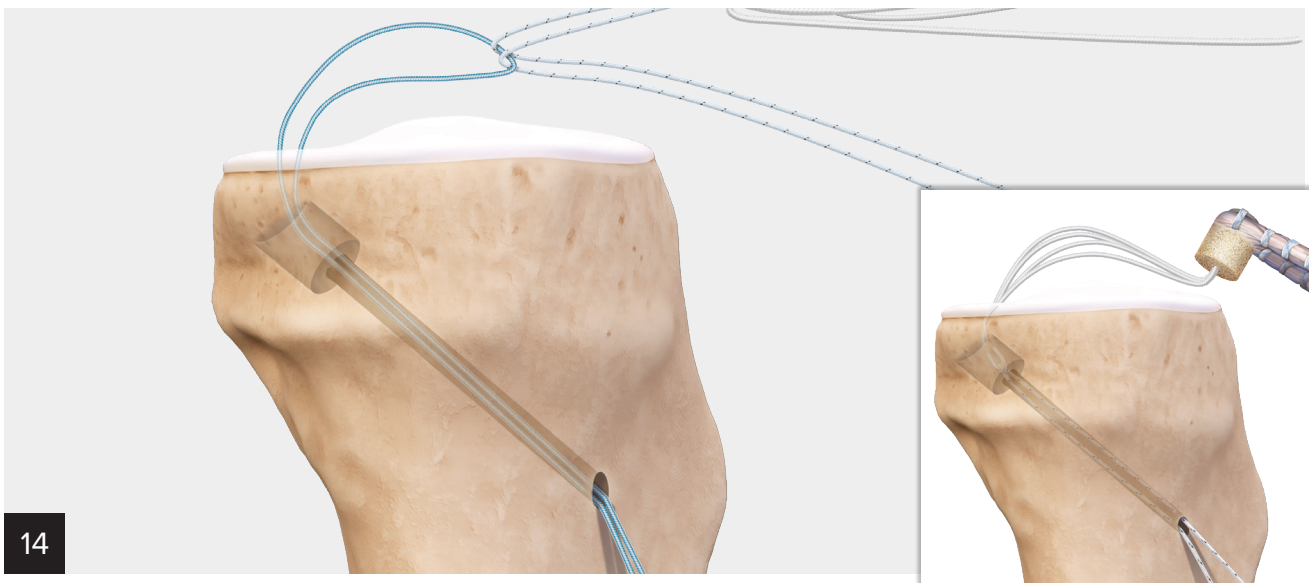


After drilling the socket, straighten the blade by rotating the sizing wheel back to the starting position. The FlipCutter™ III drill can now be removed.



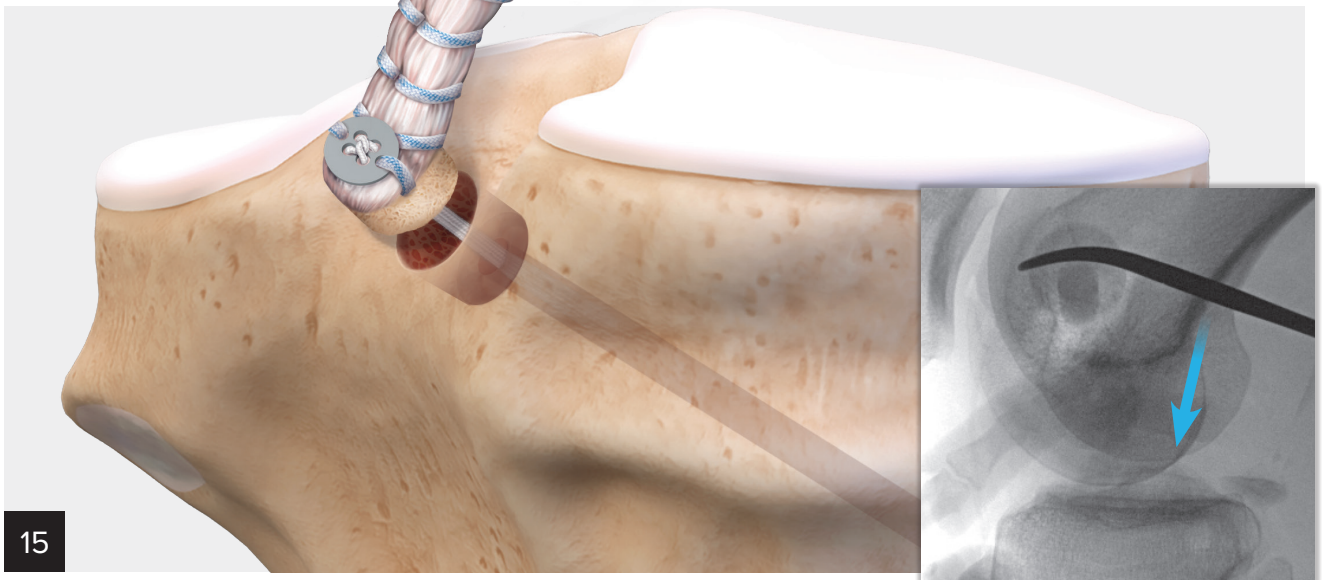
13

Remove the FlipCutter™ III drill from the drill sleeve while holding the sleeve in place for suture passing. Pass a #2 FiberStick™ suture passer through the drill sleeve and into the joint for retrieval. Use a grasper through the posteromedial portal to push the suture anterior, for retrieval through anteromedial portal.



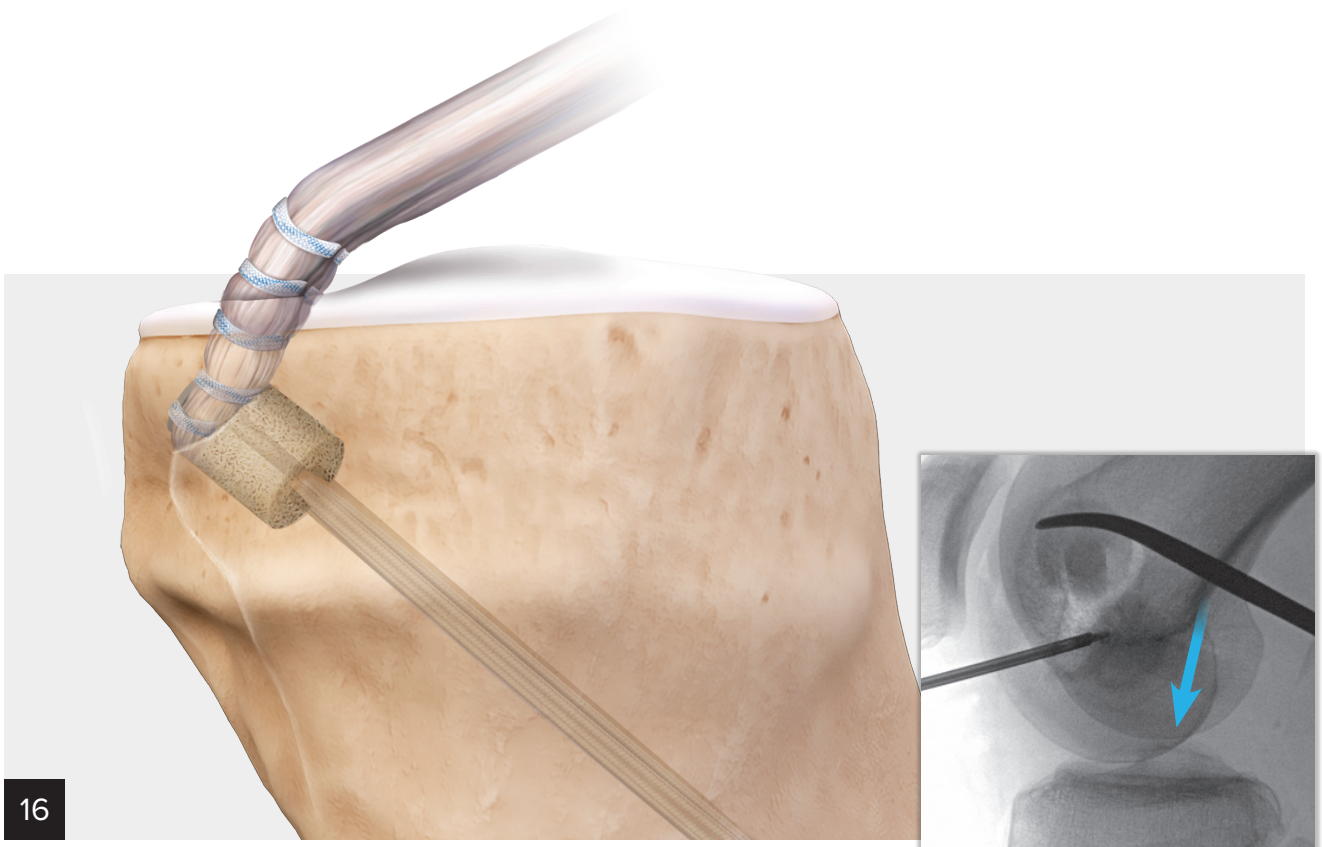
14

Use the FiberStick suture passer to pass the suture placed in the PCL TightRope® implant. Pass the TightRope implant through the tibia and retrieve out the anterior cortex. Remove the suture passer and ensure that the medial portal is large enough to easily pass the bone block. If not, increase the incision size or dilate with a hemostat.



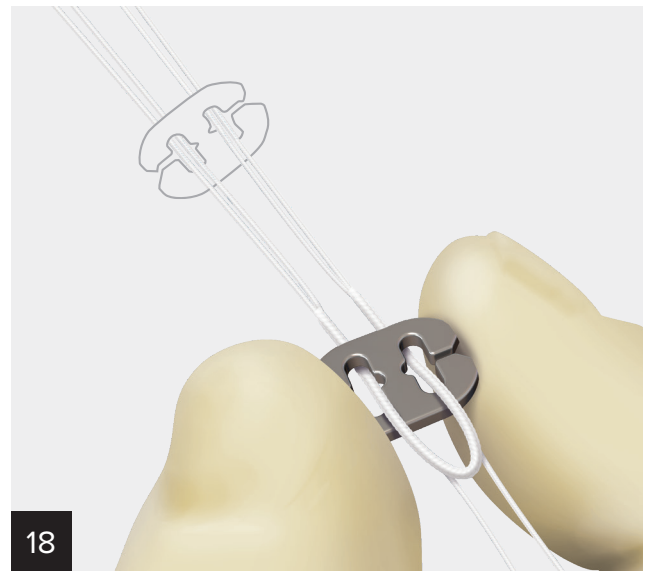
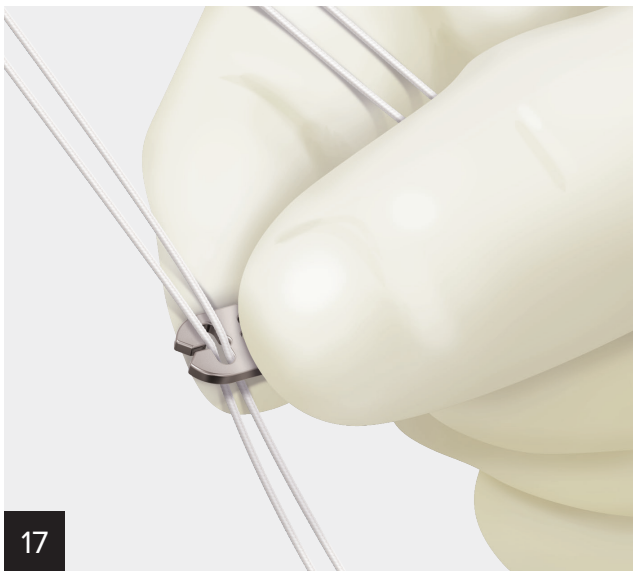
15

Push the graft posteriorly until it reaches the tibial socket. To assist passage, place a blunt trocar through the lateral portal as a pulley while visualizing through the anteromedial portal, inferior to the graft. Hold light tension on the implant (not the tensioning strands) to guide the graft into position.

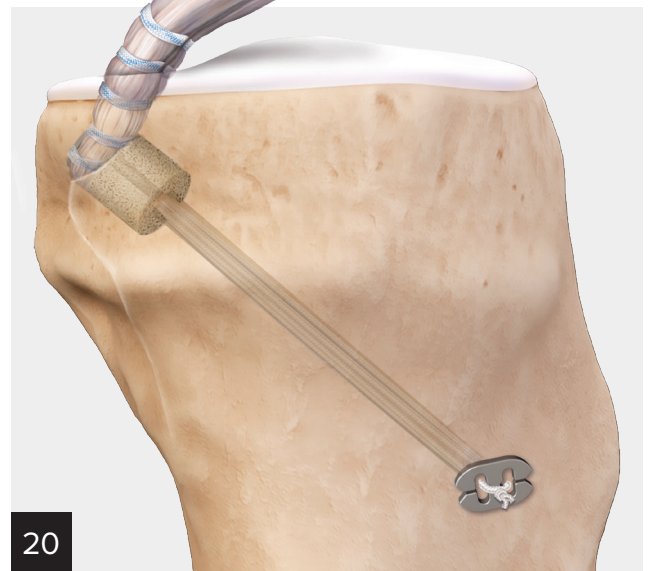
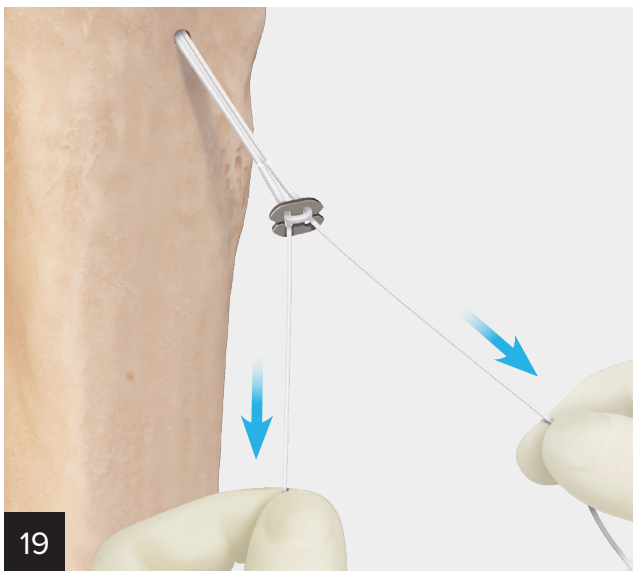


16

As the bone block moves posteriorly, place the trocar in the posteromedial portal and use as a pulley to direct the graft into the socket. When the bone block of the graft has reached the tibial socket, as seen arthroscopically and on fluoroscopy, pull distally on the implant to seat the graft.



Load the slotted button over the TightRope® implant by sliding each pair of sutures into the slots of the button. Once the sutures have been loaded, slide the button distally to the end of the implant. **Note: The suture is thicker at the end of the implant, ensuring that the button cannot become disassembled from the suture.**



Tension the implant by pulling on each strand, one at a time, until the button is seated against bone. Make sure to tension the strands symmetrically and remove any slack build-up created by one strand, while pulling on the other (avoid spreading sutures during tensioning). Once the button is seated, pull on the graft to confirm complete fixation. Once the graft is seated, the tensioning strands may be cut. **Note: A knot may be tied before cutting the sutures to protect the implant during cutting and to act as backup fixation. Proceed with femoral graft passing and fixation.**

Ordering Information

Implant

Product Description	Item Number
PCL TightRope® Implant	AR-1588TP

RetroConstruction™ Drill Guide Set (AR-1510S)

Product Description	Item Number
RetroConstruction Drill Guide Handle	AR-1510H
Drill Sleeve for RetroConstruction Drill Guide, 3.5 mm	AR-1510D
Drill Sleeve for RetroConstruction Drill Guide, 2.4 mm	AR-1778R-24
Drill Sleeve, stepped	AR-1204FDS
Obturator, 3.5 mm	AR-1204F-OB
Insert, 2.4 mm	AR-1204F-24i
Drill Sleeve for RetroConstruction Drill Guide, 3 mm	AR-1778R-30
Tibial ACL Marking Hook for RetroConstruction Drill Guide	AR-1510T
Femoral ACL Marking Hook for RetroConstruction Drill Guide	AR-1510F
Femoral ACL Footprint Marking Hook for RetroConstruction Drill Guide	AR-1510F-01
Tibial PCL Marking Hook for RetroConstruction Drill Guide	AR-1510PT
Femoral PCL Marking Hook for RetroConstruction Drill Guide	AR-1510PF
Multiuse Marking Hook for RetroConstruction Drill Guide	AR-1510M
RetroConstruction Drill Guide System Case	AR-1510C

Graft Prep Station Basic Set (AR-2950S)

Product Description	Item Number
Graft Prep Station Base	AR-2950
Graft Workstation Posts for Patellar Tendon	AR-1959
Graft Workstation Adjustable Post	AR-1953
Graft Workstation Stationary Posts	AR-1951
Graft Sizing Block	AR-1886
Graft Prep Station Instrumentation Case	AR-2950C

Disposables

Product Description	Item Number
FlipCutter™ III Drill, 6 mm-12 mm	AR-1204FF
Coring Reamer and Collared Pin Set, 11 mm	AR-1226S
Coring Reamer and Collared Pin Set, 12 mm	AR-1227S
Coring Reamer and Collared Pin Set, 13 mm	AR-1229S
Drill Tip Guide Pin, 2.4 mm	AR-1250L

Suture

Product Description	Item Number
FiberTape® Suture	AR-7237
SutureTape, 1.3 mm, 40 in (white/blue), w/ tapered ends and tapered needle, 26.5 mm ½ circle, 12/box	AR-7500
FiberStick™, #2 FiberWire® suture, 50 in (blue) one end stiffened, 12 in	AR-7209
#2 FiberLoop® Suture w/ Straight Needle, qty. 12	AR-7234

Optional

Product Description	Item Number
PCL Cruciate ToolBox Instrumentation Set	AR-1269S
Double-Bundle PCL Guide Set	AR-5015S
FastThread™ BioComposite Interference Screws	
6 mm × 20 mm (used w/ 6 mm driver)	AR-4020C-06
7 mm-10 mm × 20 mm screws	AR-4020C-07 – 10
7 mm-12 mm × 30 mm screws	AR-4030C-07 – 12

Products may not be available in all markets because product availability is subject to the regulatory approvals and medical practices in individual markets. Please contact Arthrex if you have questions about the availability of products in your area.

Related Science

Jordan SS, Campbell RB, Sekiya JK. Posterior cruciate ligament reconstruction using a new arthroscopic tibial inlay double-bundle technique. *Sports Med Arthrosc Rev*. 2007;15(4):176-183. doi:10.1097/JSA.0b013e3181595b95.

Campbell RB, Jordan SS, Sekiya JK. Arthroscopic tibial inlay for posterior cruciate ligament reconstruction. *Arthroscopy*. 2007;23(12):1356.e1-4. doi:10.1016/j.arthro.2007.01.020.

Zehms CT, Whiddon DR, Miller MD, et al. Comparison of a double bundle arthroscopic inlay and open inlay posterior cruciate ligament reconstruction using clinically relevant tools: a cadaveric study. *Arthroscopy*. 2008;24(4):472-80. doi:10.1016/j.arthro.2007.09.012.

Ruberte Thiele RA, Campbell RB, Amendola A, Sekiya JK. Biomechanical comparison of figure-of-8 versus cylindrical tibial inlay constructs for arthroscopic posterior cruciate ligament reconstruction. *Arthroscopy*. 2010;26(7):977-983. doi:10.1016/j.arthro.2009.11.006.

References

1. Campbell RB, Torrie A, Hecker A, Sekiya JK. Comparison of tibial graft fixation between simulated arthroscopic and open inlay techniques for posterior cruciate ligament reconstruction. *Am J Sports Med*. 2007 Oct;35(10):1731-1738. doi:10.1177/0363546507302216.
2. Arthrex, Inc. LA1057A. Naples, FL; 2011.



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

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