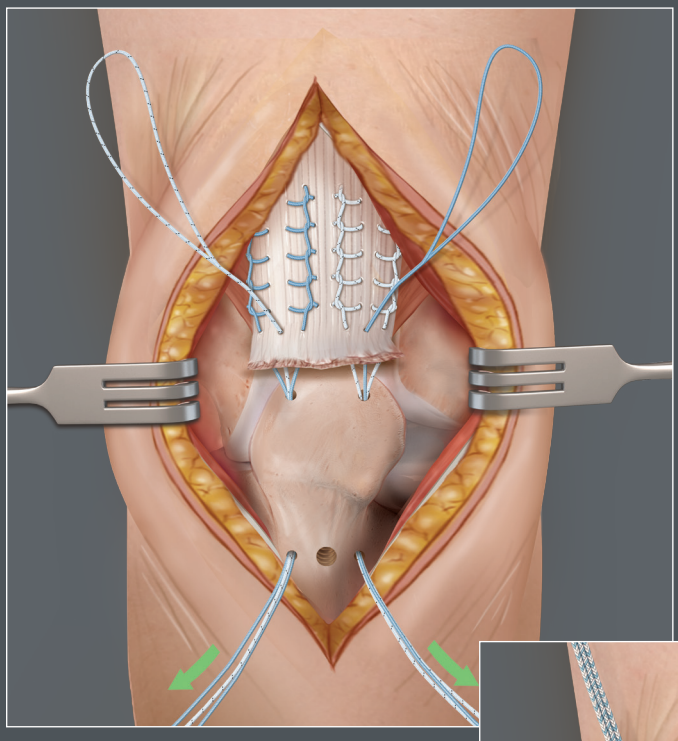
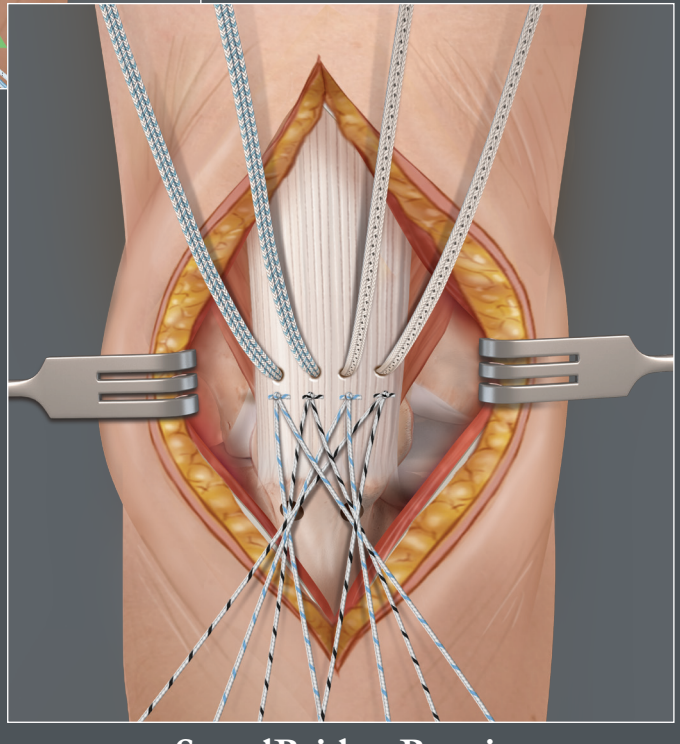
Arthrex®

Transosseous/SpeedBridge™ Triceps Repair
Surgical Technique



Transosseous

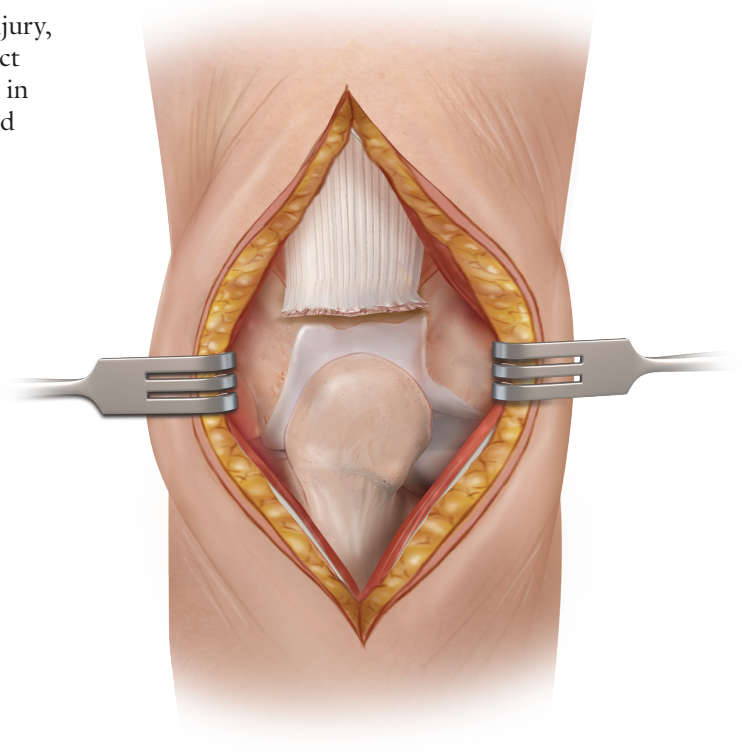


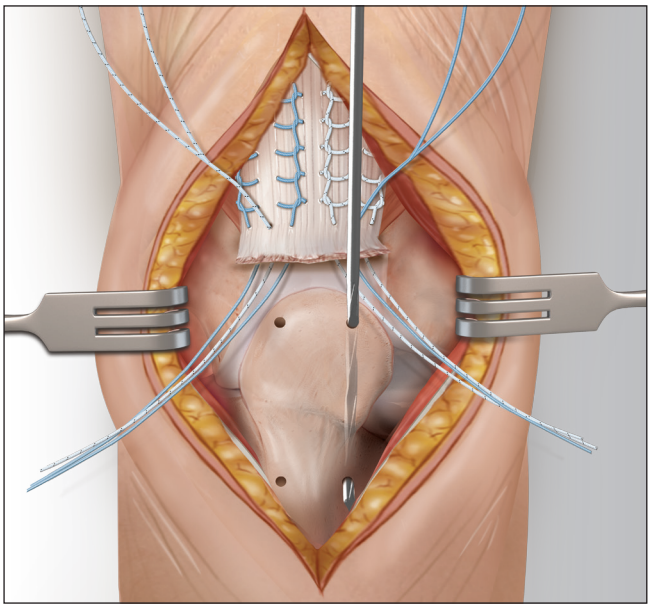
SpeedBridge Repair

Transosseous/SpeedBridge Triceps Repair

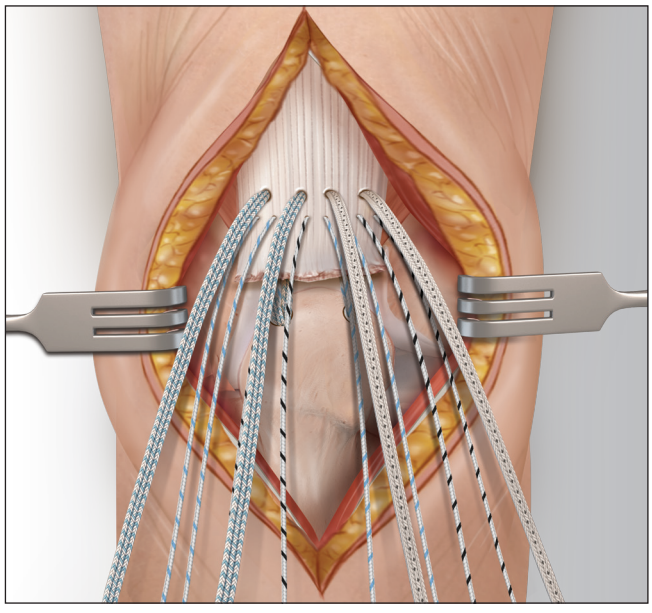
Introduction

Avulsion of the distal triceps tendon is an uncommon injury, often resulting from a fall on an outstretched hand, direct blow, laceration or eccentric loading of the triceps while in a contracted state. Unless a palpable defect of the avulsed tendon is present, diagnosis can be complicated. Pain and swelling in the setting of an acute triceps rupture frequently inhibit the clinician from evaluating elbow range of motion and strength. MRI is often used to evaluate the elbow and confirm the diagnosis. Although rare, this injury can result in significant physical impairment. Several techniques for managing distal triceps rupture have been described. A biomechanical study found that the knotless anatomic footprint repair had an average load at yield of 462.9 N compared to the average load at yield of 233.5 N for the transosseous cruciate repair group.[1] Here we present 2 novel techniques by Dr. James Paci and Dr. Paul Caldwell.





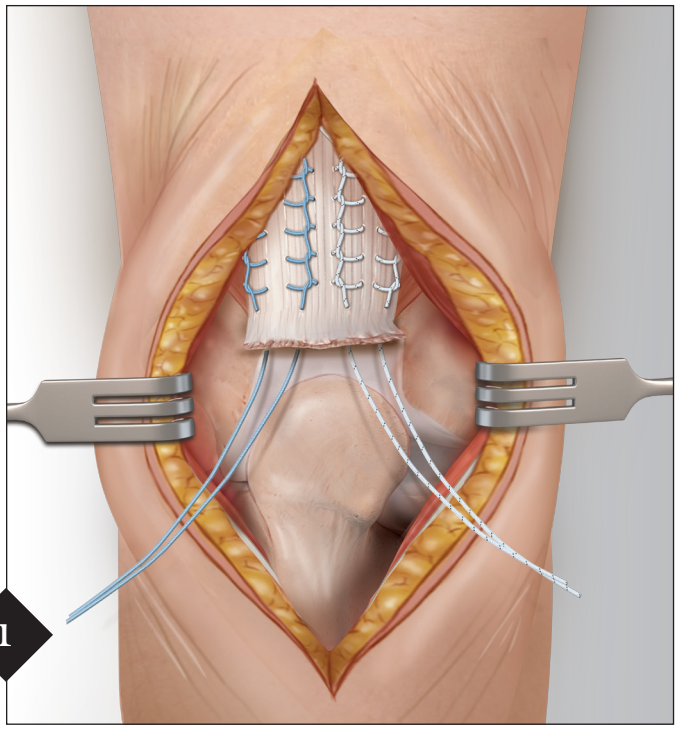
Transosseous technique as described by James Paci, MD, Stony Brook, NY



SpeedBridge™ technique as described by Paul Caldwell, MD, Richmond, VA

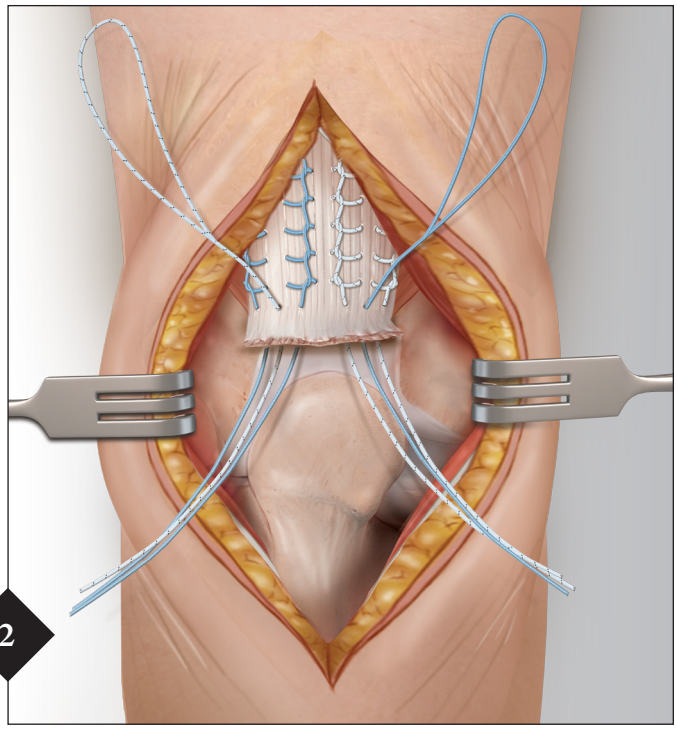
Acknowledgement to:

Brian Muelenaer, MBA, Phoenix, AZ and Mitch Harmon, MBA, Washington, DC



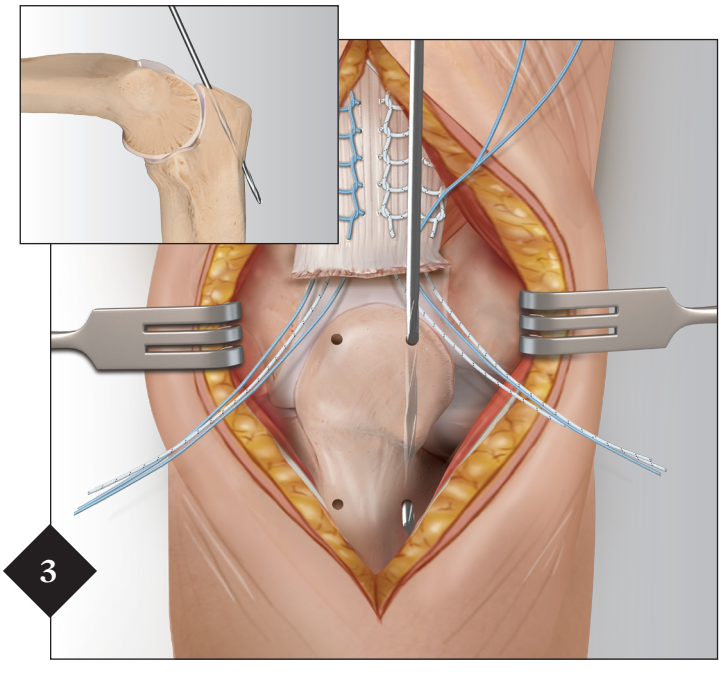
1

Perform a locking Krackow stitch configuration with a #2 FiberWire® suture, beginning on the distal undersurface of the lateral side of the tendon working up proximally and then back down the lateral edge and exiting distally. Perform the same locking Krackow stitch on the medial side of the tendon using a TigerWire® suture. Once completed, all 4 strands should exit on the footprint edge of the triceps tendon.



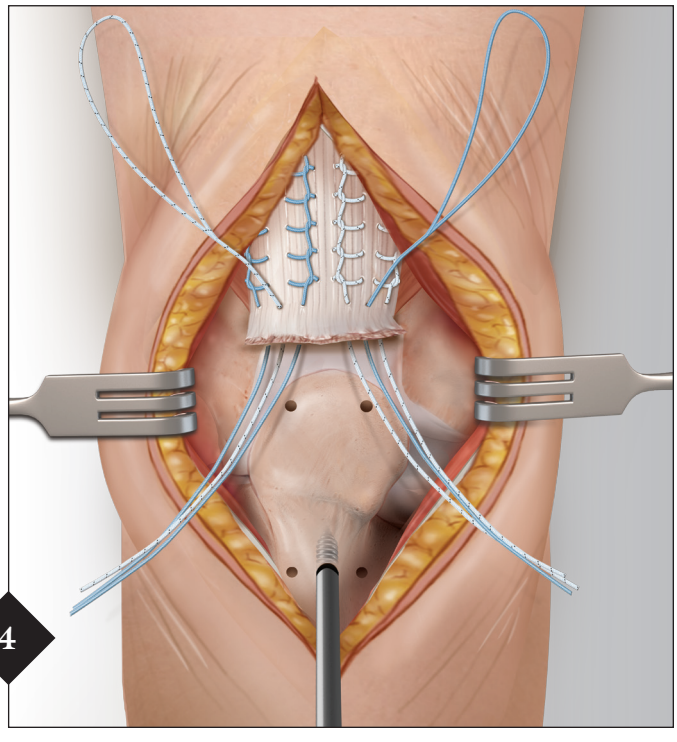
2

Using a free needle, pass a FiberLink™ suture on the lateral side at the same level as the exiting FiberWire suture tails at the footprint of the tendon, with the loop located proximal, to be used as a shuttling suture. Repeat this same step medially using a TigerLink™ suture.



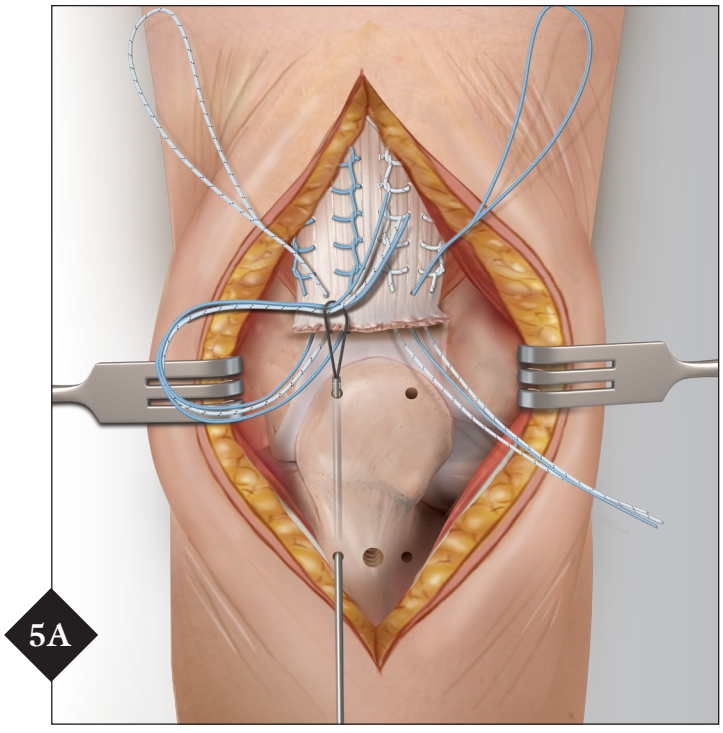
3

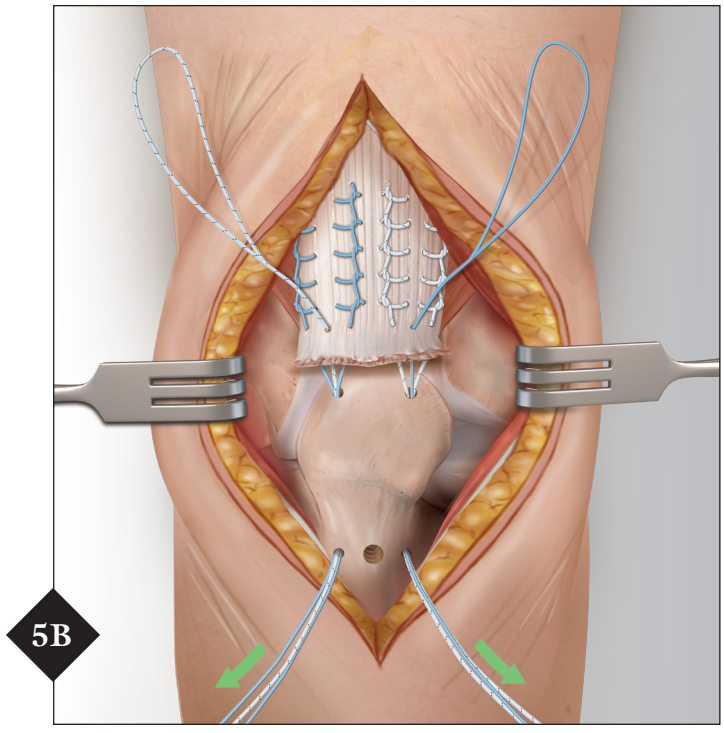
Drill medial and lateral 2 mm tunnels entering at the proximal portion of the footprint and exiting distally at the dorsal ulnar surface. Angle the drill to avoid entering the joint while still creating as deep a tunnel as possible.



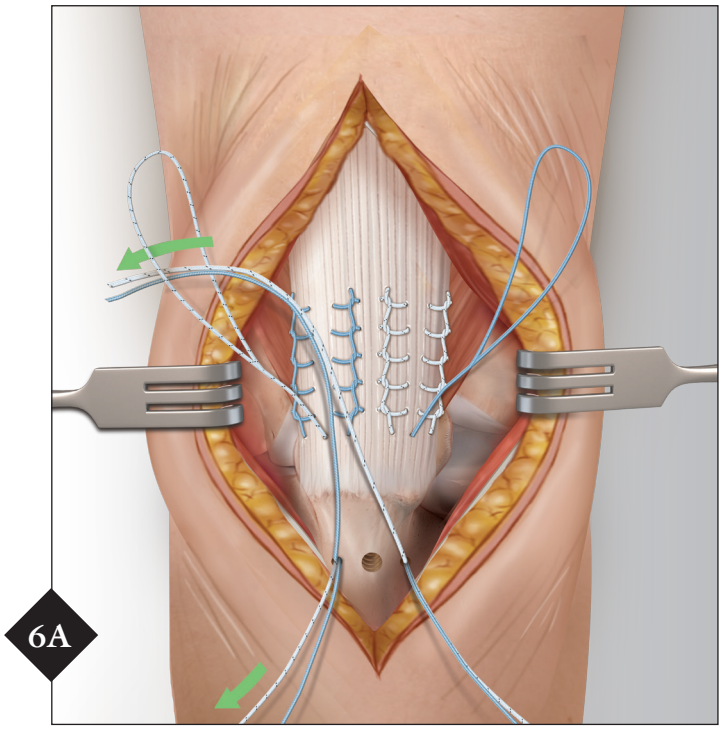
4

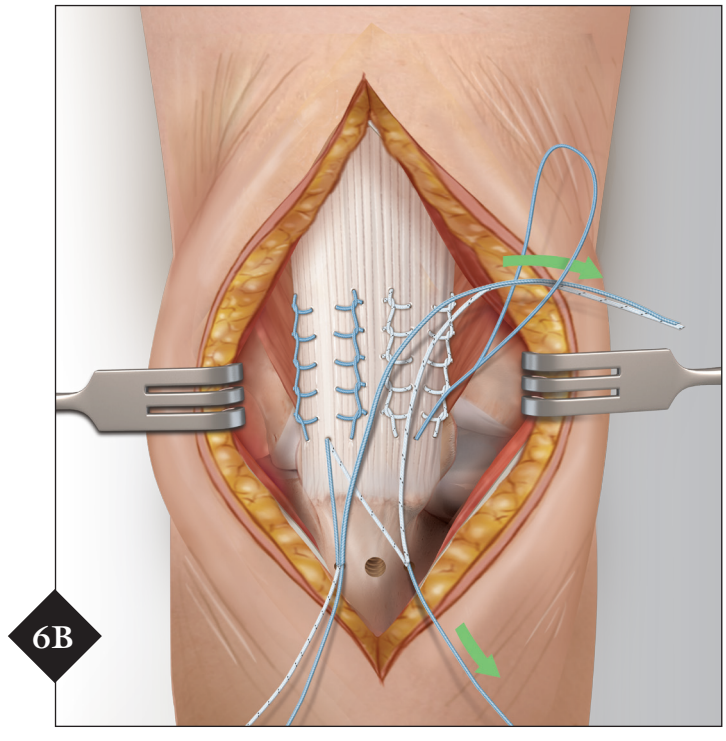
Drill pilot hole with a 4.5 mm drill at a point between the medial and lateral tunnels on the undersurface of the olecranon, aiming distally away from the joint. Drill to a depth of 20 mm. Tap the socket if necessary.



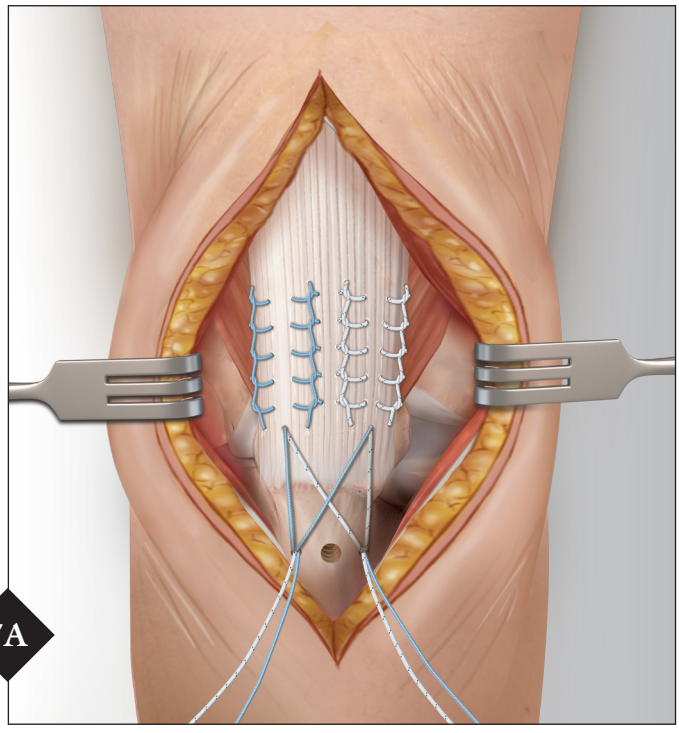


Using a Transosseous Suture Passer, pass both lateral FiberWire® suture tails and the FiberLink™ suture tail through the 2 mm lateral hole. Repeat for the medial side TigerWire® and TigerLink™ suture tails.

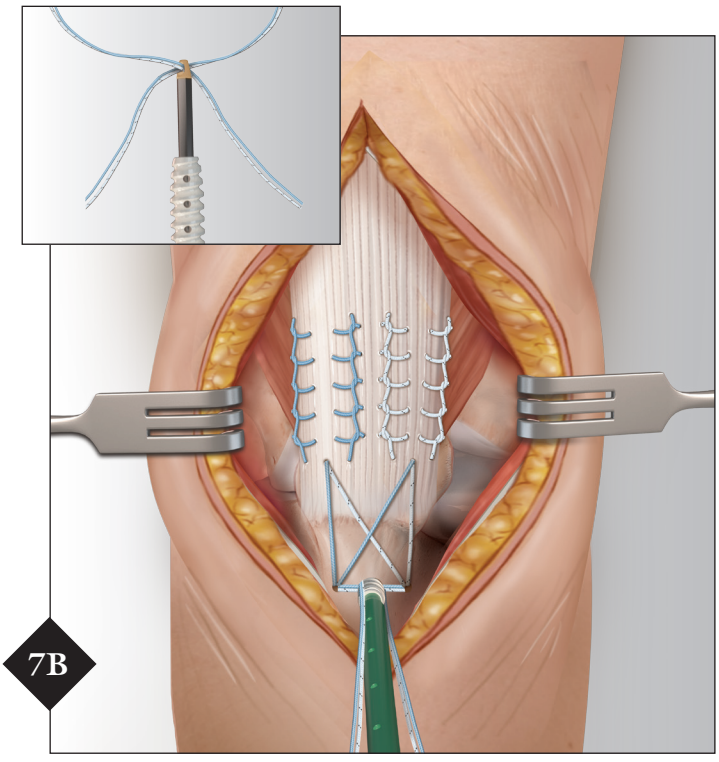




Take one lateral tail of FiberWire suture and one medial tail of TigerWire suture and pass through the medial TigerLink suture loop. Pull the TigerLink suture tail to shuttle sutures through medial tunnel. Take the other lateral tail of FiberWire suture and other medial tail of TigerWire suture and pass through the lateral FiberLink suture loop. Pull the FiberLink suture tail to shuttle sutures through lateral tunnel.

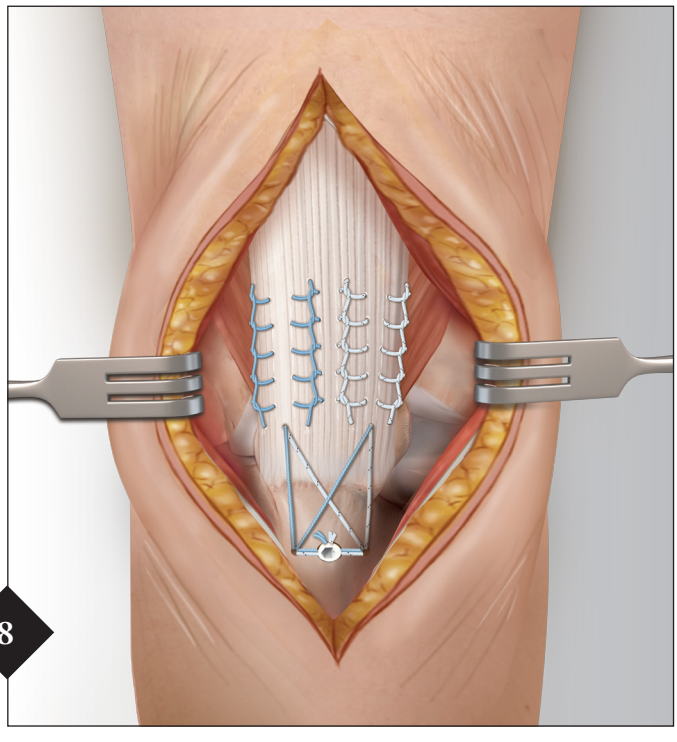


7A



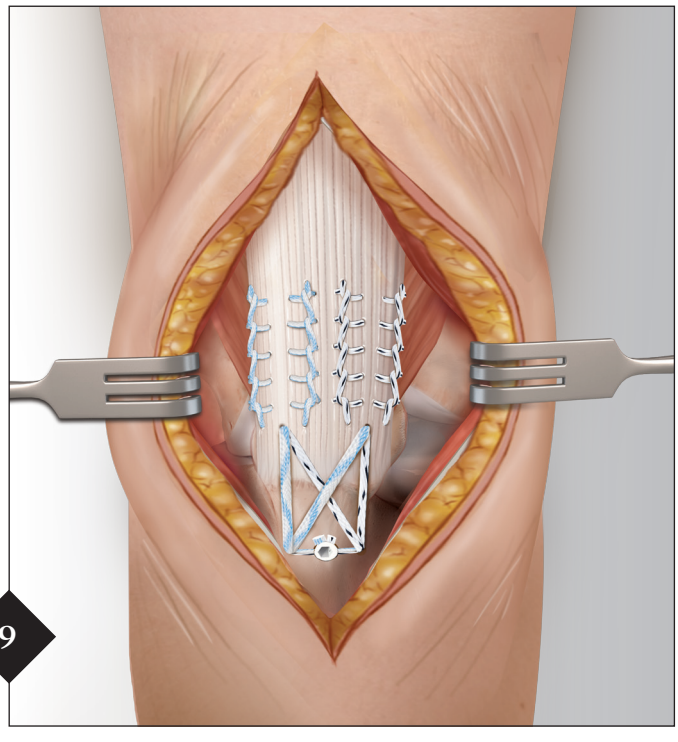
7B

Load the medial pair of suture limbs through the SwiveLock® anchor eyelet in one direction, then load the lateral pair of suture limbs through the eyelet in the opposite direction (see inset 7B.) Bring the eyelet of the implant to the edge of the bone socket and remove slack from each FiberWire® suture limb individually. Apply tension to the FiberWire sutures so that the tissue is reduced and compressed against the bone. Completely advance the driver into the bone socket beyond the first laser line until the anchor body contacts bone. Evaluate tissue tension. If it is determined that the tension is not adequate, the driver can be backed out and tension readjusted. (Do not attempt to apply tension with the eyelet in the bone socket.)



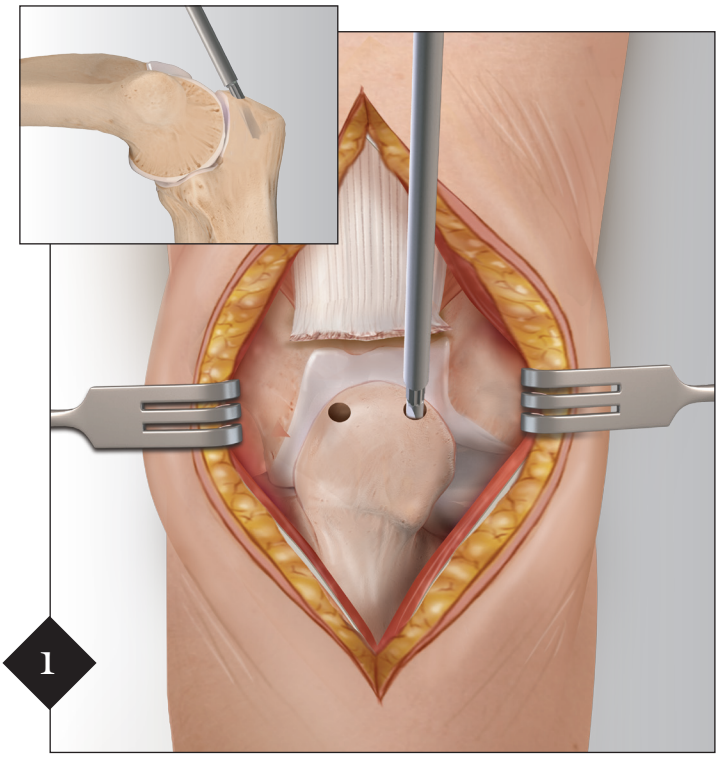
8

Cut remaining suture tails for a final low-profile construct.

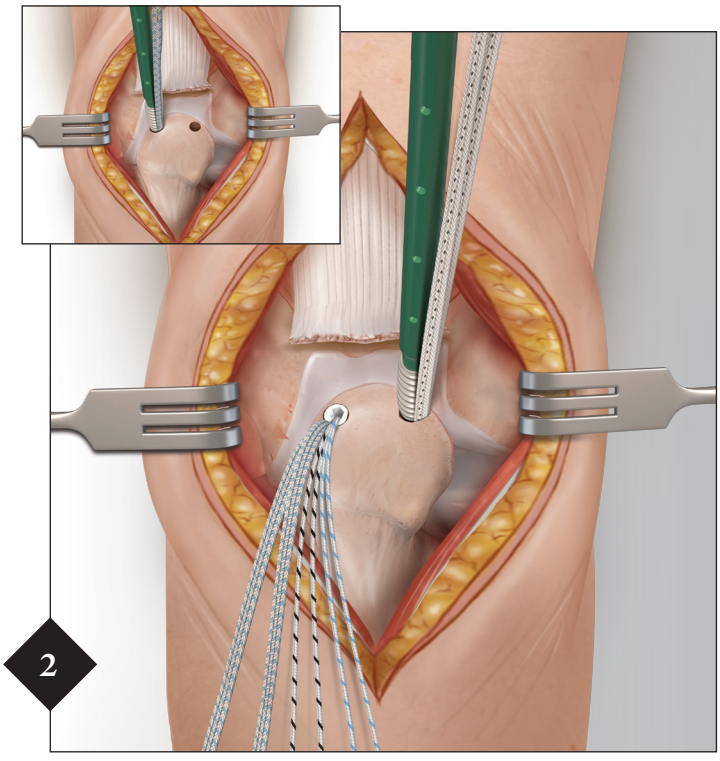


9

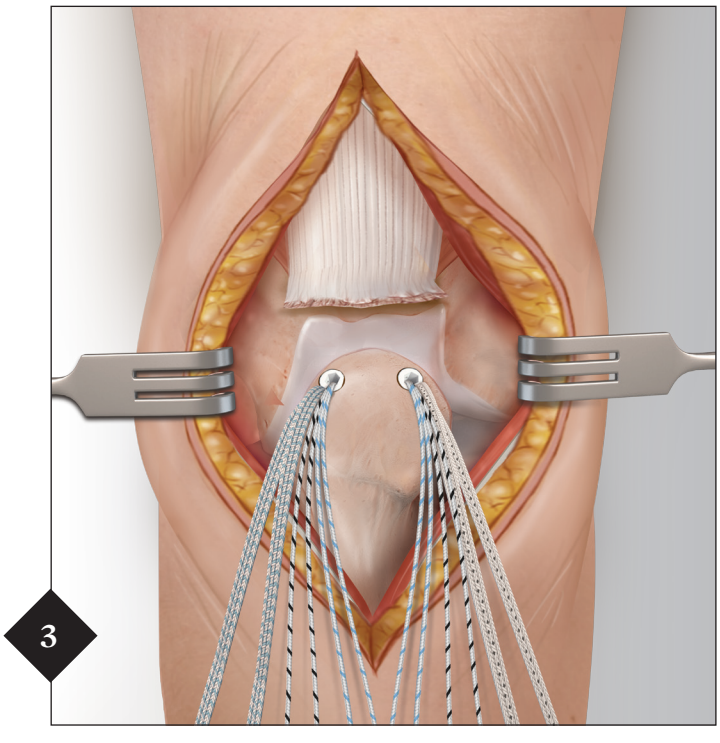
SutureTape can be used in place of #2 FiberWire suture.



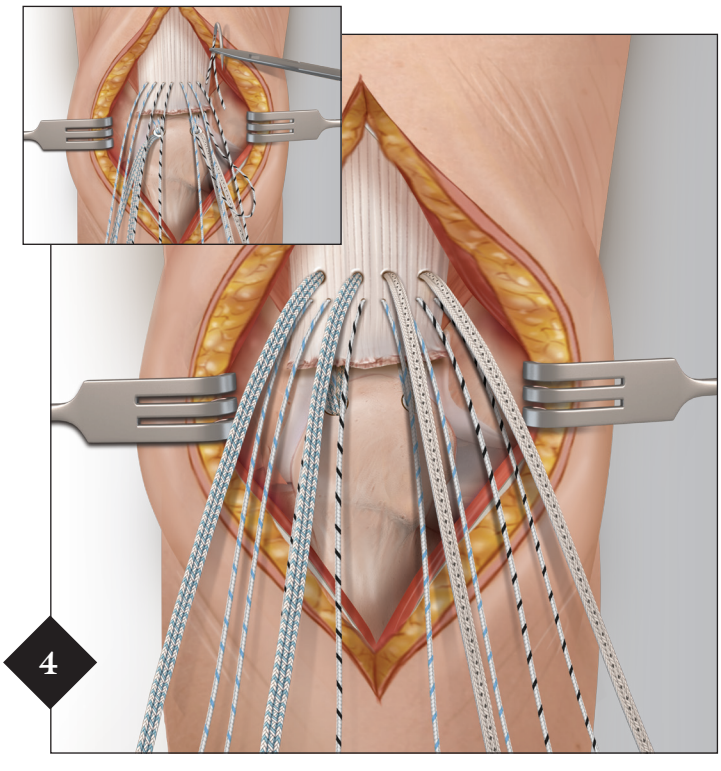
Prepare the medial bone socket using a 4.5 mm diameter drill for the 4.75 mm SwiveLock® anchor, drilling to a depth of 20 mm. If necessary, tap the bone socket with the 4.75 mm SwiveLock anchor tap.



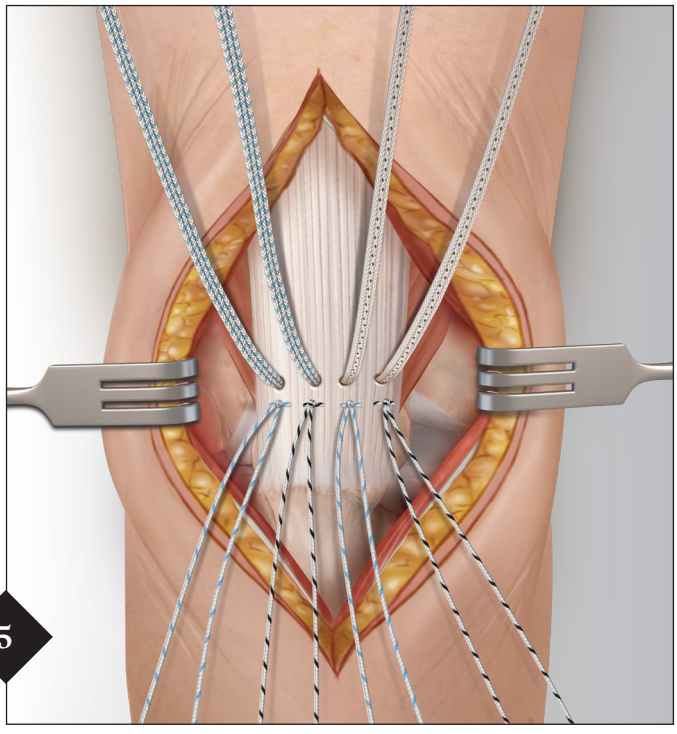
Preload a FiberTape® suture into the eyelet of a double-loaded 4.75 mm biocomposite SwiveLock C anchor for use as a proximal anchor in the olecranon. Insert the anchor into the prepared bone socket until the anchor body makes contact with bone.



Repeat for the lateral proximal anchor, using a TigerTape™ suture.

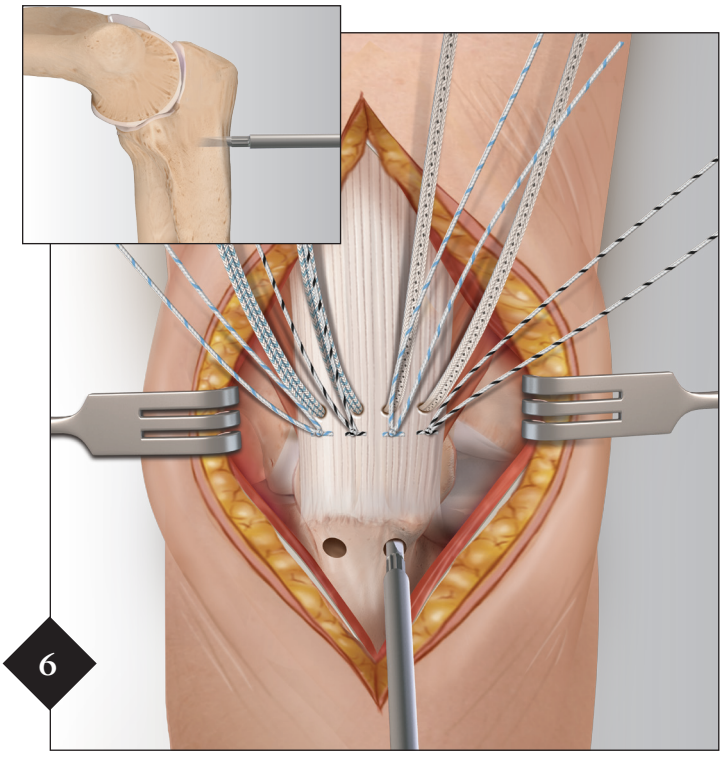


Using a free needle, pass the #2 FiberWire® retention sutures from the SwiveLock anchors through the distal triceps, in a mattress configuration, approximately 2 cm proximal to the distal end of the tendon. Pass the FiberTape and TigerTape suture tails proximal to the FiberWire® sutures.



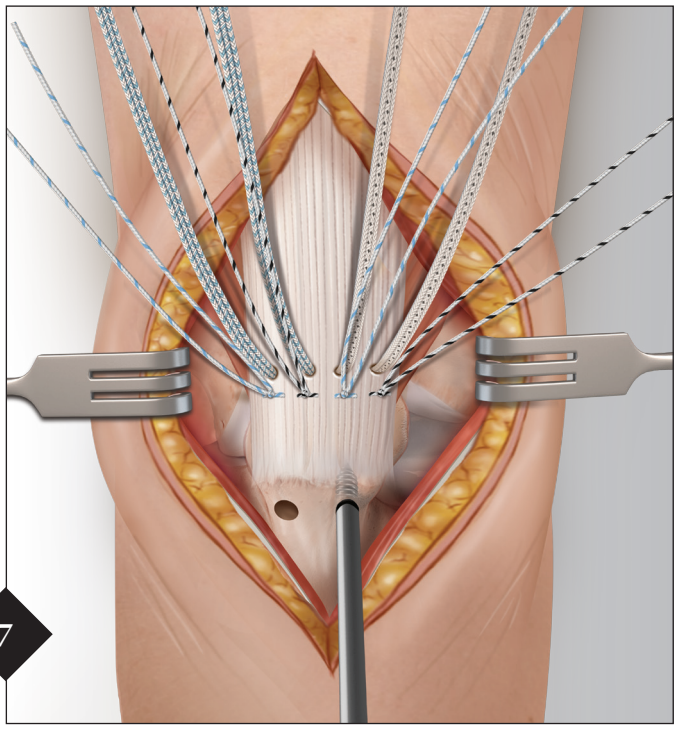
5

Tie the FiberWire® sutures in a mattress configuration.



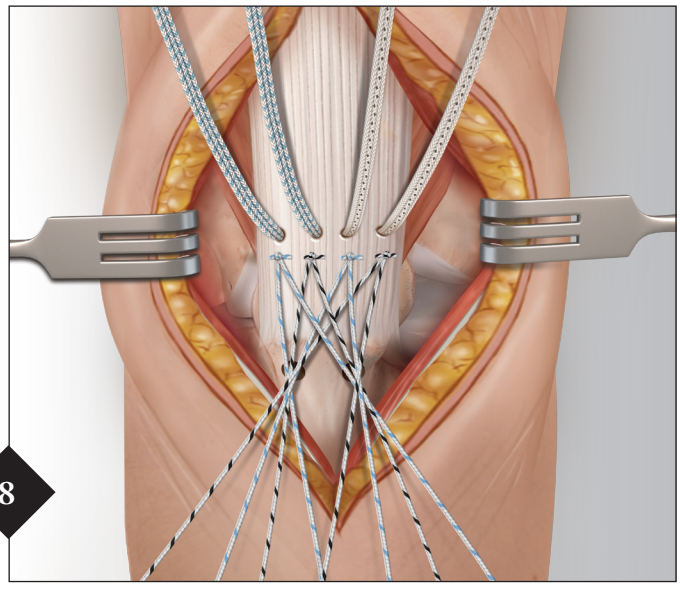
6

The 4.5 mm drill is used to create 2 additional sockets, to a depth of 20 mm, at the distal aspect of the triceps footprint.



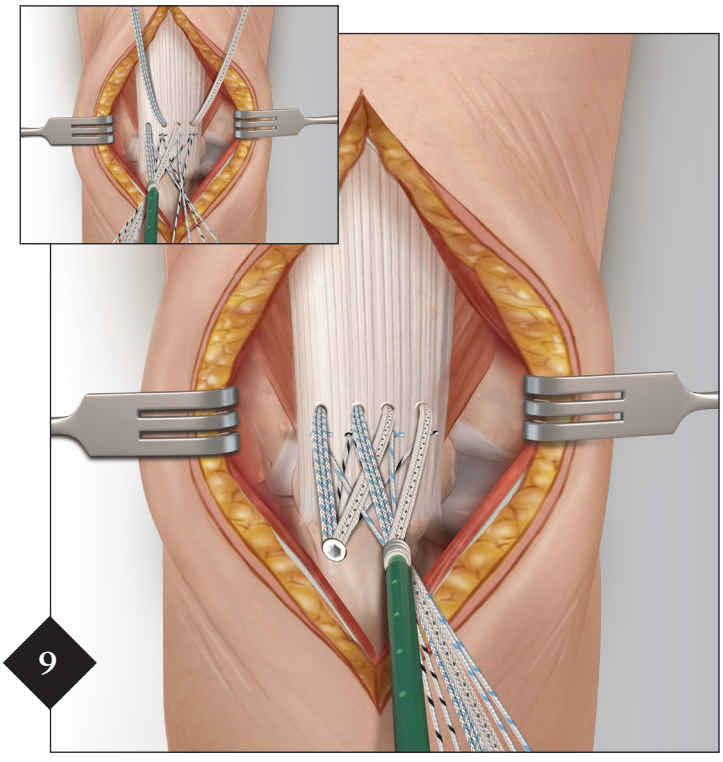
7

If necessary, tap the bone socket with the 4.75 mm SwiveLock® anchor tap.

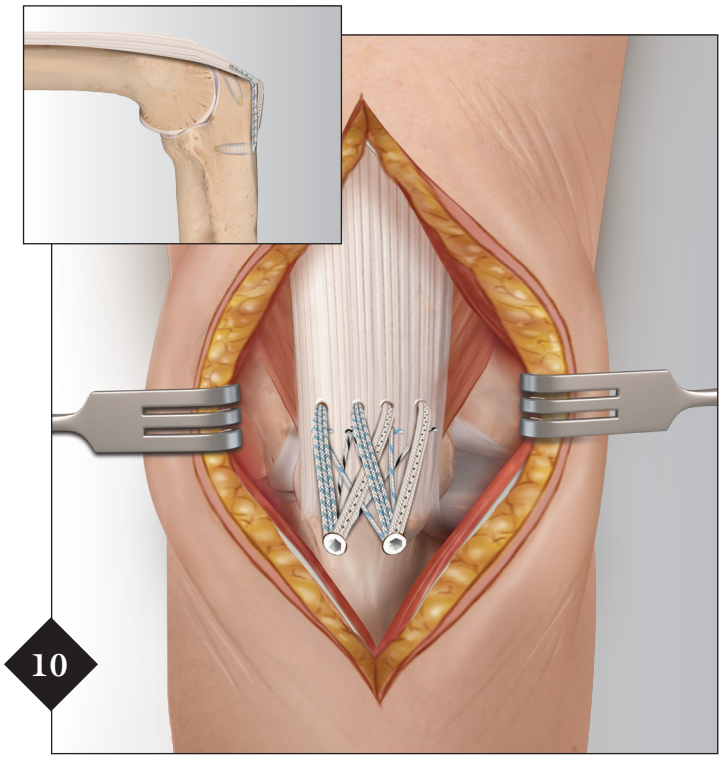


8

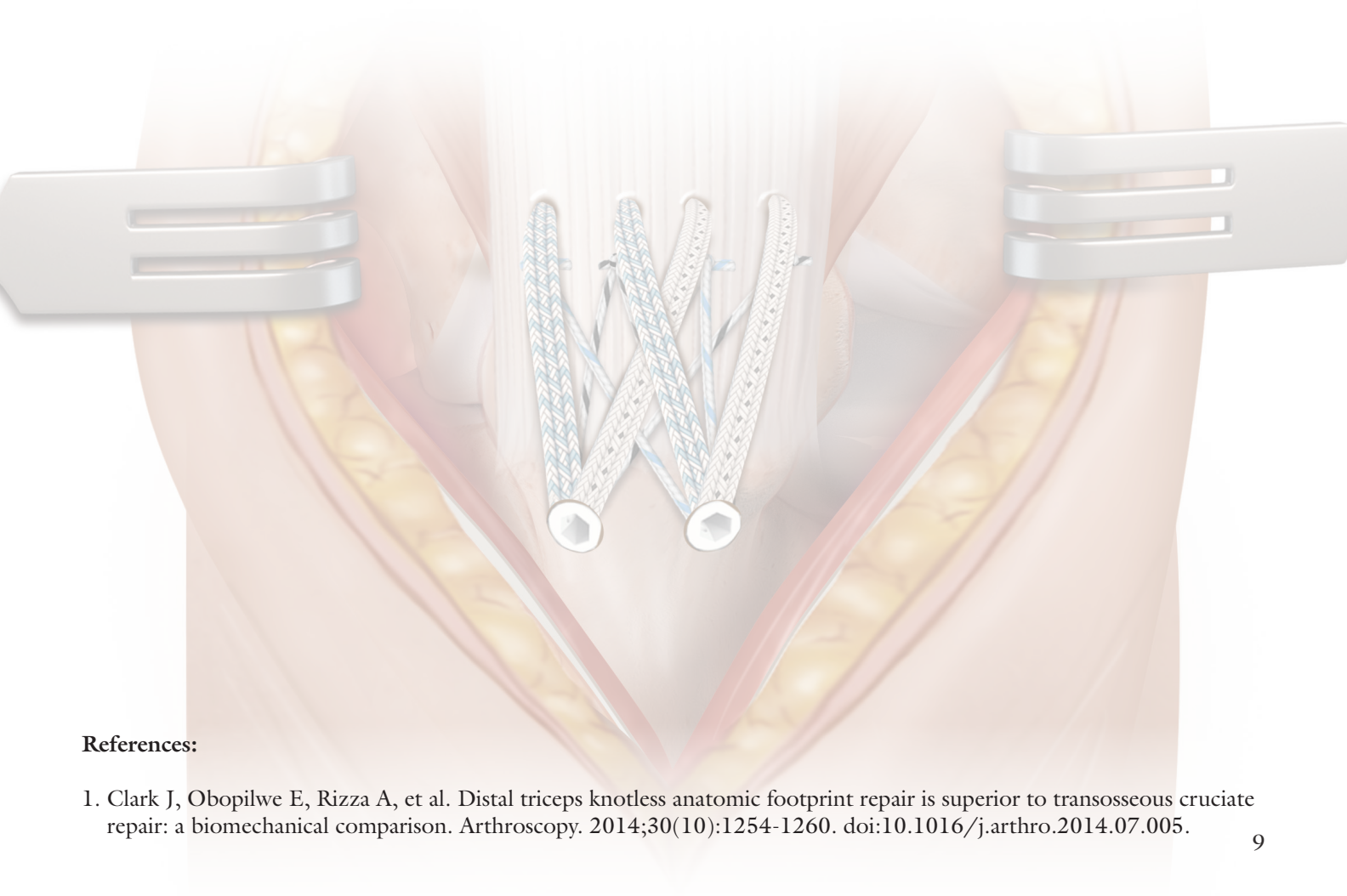
Load 1 tail from each of the previously passed TigerTape™ and FiberTape® sutures and 1 tail from each FiberWire® suture mattress into a 4.75 mm BioComposite SwiveLock® anchor. Bring the eyelet of the implant to the edge of the bone socket and remove slack from each FiberTape and FiberWire suture limb individually. Apply tension to the FiberTape and FiberWire sutures so that the tissue is reduced and compressed against the bone. Completely advance the driver into the bone socket beyond the first laser line until the anchor body contacts bone. Evaluate tissue tension. If it is determined that the tension is not adequate, the driver can be backed out and tension readjusted. (Do not attempt to apply tension with the eyelet in the bone socket.)



Repeat step for the remaining tape and suture tails.



Cut all tape and suture tails flush with the bone for a low-profile final construct.



References:

1. Clark J, Obopilwe E, Rizza A, et al. Distal triceps knotless anatomic footprint repair is superior to transosseous cruciate repair: a biomechanical comparison. Arthroscopy. 2014;30(10):1254-1260. doi:10.1016/j.arthro.2014.07.005.

Ordering Information

Product Name	Part Number
#2 FiberWire® suture, 38" / 97 cm (1 blue, 1 white/black) w/Tapered Needles, 26.5 mm 1/2 Circle	AR-7208
FiberLink™ suture, #2 FiberWire suture, 26" (blue), w/Closed Loop	AR-7235
TigerLink™ suture, #2 FiberWire suture, 26" (white/black), w/Closed Loop	AR-7235T
Drill Spade Tip, for 5.5 mm Corkscrew® FT anchor and 4.75 mm and 5.5 mm SwiveLock® anchor	AR-1927D
Punch/Tap for 4.75 mm SwiveLock® anchor	AR-2324PTB
Suture Passer, Transosseous	AR-1000
Biocomposite SwiveLock® C anchor, 4.75 mm x 19.1 mm	AR-2324BCC
FiberTape™ suture, 2 mm, 7" (blue) tape with each end tapered to #2 FiberWire suture, 30"	AR-7237-7
FiberTape™ suture, 2 mm, 36" (blue) each end tapered to #2 FiberWire suture	AR-7237-T
Biocomposite SwiveLock C anchor, double-loaded, 4.75 mm x 22 mm, with 2 TigerWire® CL sutures (white/blue and white/black)	AR-2324BCC-2
Drill, for 2 mm SutureTak® suture anchor	AR-1934D-20

...up-to-date technology
just a click away

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.

View U.S. Patent information at www.arthrex.com/corporate/virtual-patent-marking