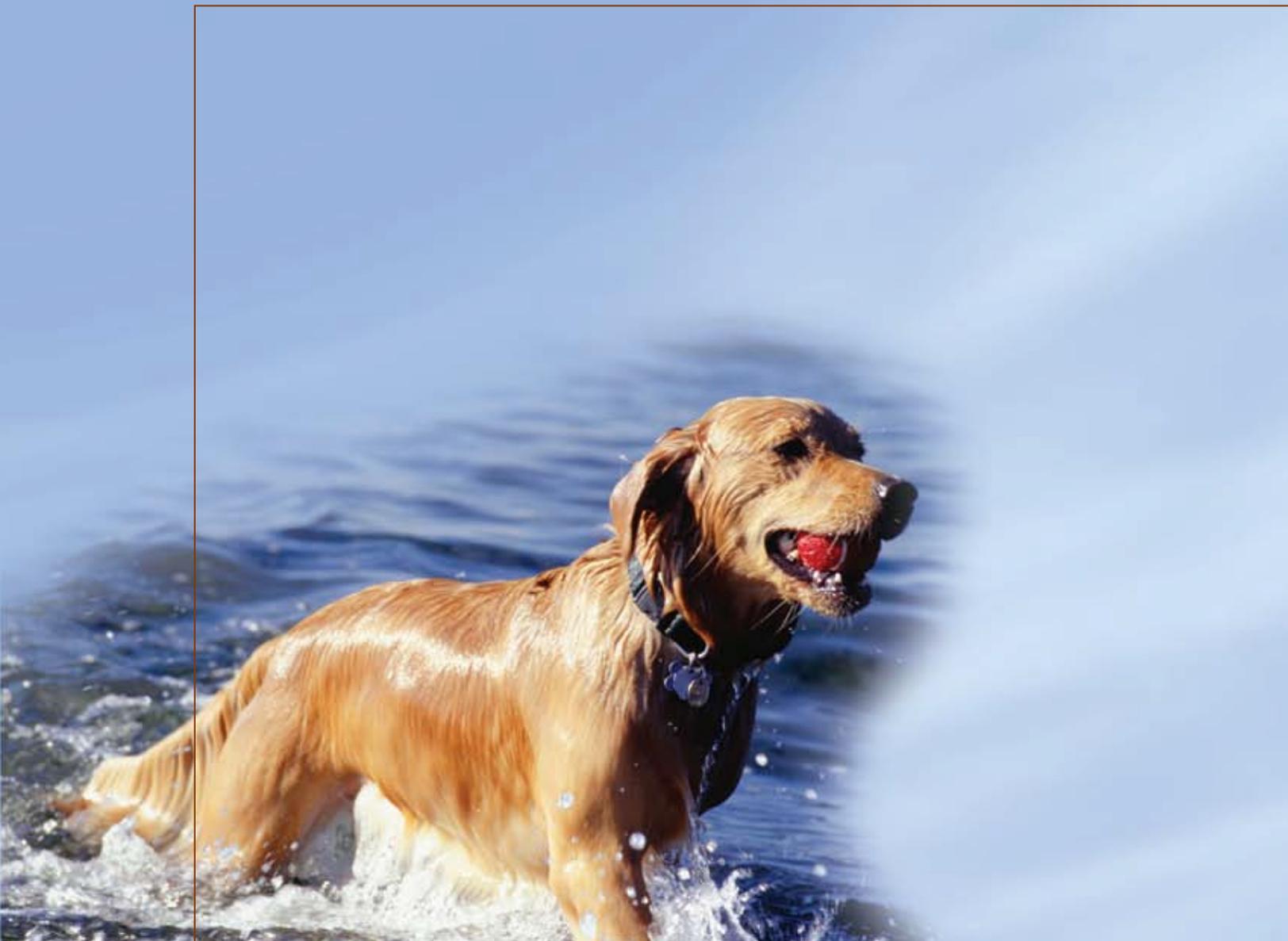




SURGICAL TECHNIQUE

TightRope® CCL



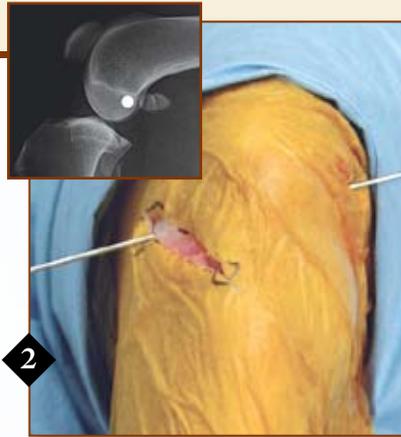
Surgical Technique

The patient is placed in dorsal recumbency and prepared for surgery of the affected stifle. Strict adherence to aseptic technique for patient preparation and surgery is critical to success. Preparation and draping, exposing the limb from proximal thigh to below the hock, is recommended to allow for adequate stifle palpation and manipulation during surgery.

A lateral parapatellar approach with arthrotomy, or arthroscopic instrumentation, is performed to allow for complete exploration of the stifle joint. Pathology of ligament and meniscus should be treated appropriately. The joint is thoroughly lavaged and the joint capsule closed. The caudolateral aspect of the stifle is exposed by caudal dissection and retraction of the lateral fascial incision when an arthrotomy has been performed or by mini-incision, based on anatomical landmarks after arthroscopy has been performed.



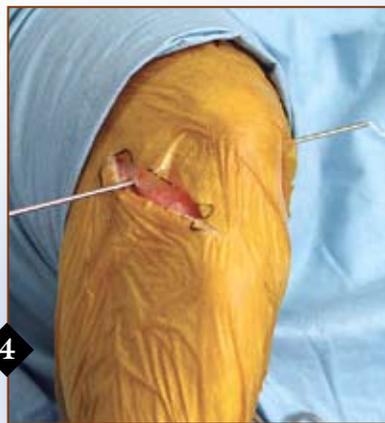
1 The anatomical landmarks for exposure are the lateral fabella to the tubercle of Gerdy. The lateral fascia is incised to allow caudal retraction.



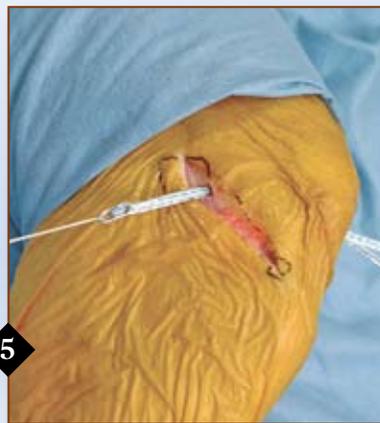
2 Insert the Guidewire immediately cranial and distal to the lateral fabella and within the caudal portion of the lateral femoral condyle. Advance the Guidewire at an angle proximally. The Guidewire traverses the distal femur and exits the distal diaphysis of the femur on the medial side immediately caudal to the vastus medialis muscle.



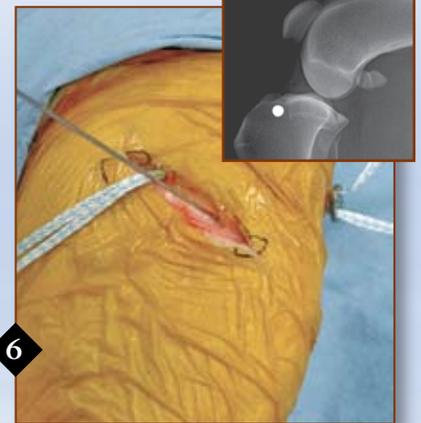
3 A 1-2 cm incision on the medial aspect of the distal stifle is made over the Guidewire down to periosteum to facilitate seating of the femoral button. The Cannulated Drill Bit is inserted onto the Guidewire and advanced through the femur while protecting the associated soft tissues.



4 After removal of the Guidewire and drill bit, the TightRope needle is inserted through the femoral hole from a medial to lateral direction and advanced through the soft tissues on the lateral side.



5 As tension is applied to the needle and FiberTape, the toggle button will lay down to allow it to advance through the femoral tunnel. The second button is left outside the skin on the medial aspect of the stifle until the tibial tunnel is drilled and the toggle button is placed through the tibia.



6 The LDE tendon is palpated in the extensor groove of the proximal tibia. A 4-6 mm incision is made in the fascial sheath caudal to the LDE. Place the Guidewire through this incision and advance it under the LDE to rest against the caudal aspect of the tubercle of Gerdy (cranioproximal edge of the extensor groove of the tibia). Advance the Guidewire through the proximal tibia at a slight craniodistal angle to exit the tibia on the medial side.

TightRope CCL

The TightRope CCL technique was developed to provide a minimally invasive method for extracapsular stabilization of the cranial cruciate ligament-deficient canine stifle. TightRope CCL seeks to optimize the lateral suture stabilization technique by employing bone-to-bone fixation, an implant with superior strength and stiffness designed specifically for ligament repair, and a method for consistent isometric implant placement. As such, TightRope CCL can counteract cranial tibial thrust, drawer, and internal rotation, while providing optimal joint range of motion.

Developed in conjunction with James L. Cook, DVM, PhD, Diplomate ACVS Director, Comparative Orthopaedic Laboratory, University of Missouri



7 Insert the drill over the Guidewire and advance the drill through the tibia while protecting the lateral soft tissue. The drill should not exit the skin on the medial side. Remove the Guidewire and drill bit from the tibia.



8 Advance the TightRope needle through the tibial tunnel, in a lateral to medial direction, and exit through the skin. As tension is applied to the needle and FiberTape, the toggle button will lay down, allowing it to advance through the tibial tunnel.



9 Once the toggle button has exited the tibial tunnel, the button is flipped in the subcutaneous space by pulling the white suture, attached to the lead wire, in a slight upward direction and by pulling back on the FiberTape. This will allow the button to flip such that it can be seated firmly against the medial tibial cortex when the FiberTape is pulled tight on the lateral side of the tibia.



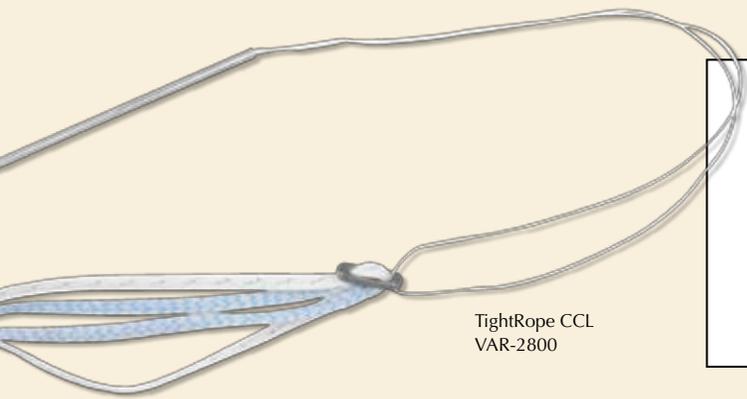
10 Once you have determined that the toggle button has flipped and is in the proper position, cut the white suture and remove it.



11 Remove all slack from the FiberTape by pulling on the suture at the tibial tunnel, on the lateral side, to ensure the tibial button has seated firmly.



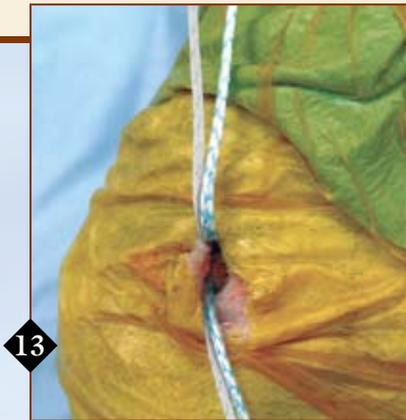
12 Remove the remaining slack in the suture by pulling on the free ends of the FiberTape near the femoral button.



TightRope CCL
VAR-2800

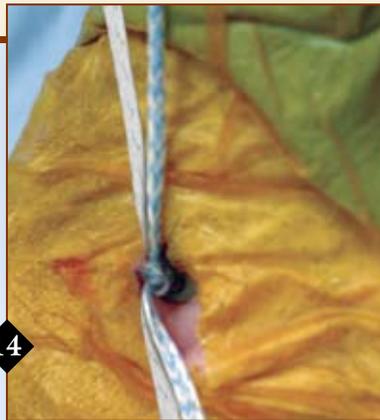
ORDERING INFORMATION

TightRope CCL	VAR-2800
FiberWire Scissor	VAR-11796
Suture Tensioner with Tensiometer	AR-1529
Cannulated Drill Bit, 3.5 mm	AR-8920DC
Guidewire, TightRope Syndesmosis	AR-8920P



13

Advance the femoral button through the soft tissue and seat it firmly and completely against the femoral bone.



14

Hold the joint in the desired angle and tie a Surgeon's Knot and two half-hitches (alternating the posts) at your desired tension. Check the drawer, thrust and rotation. If it meets your requirements, tie two to three additional half-hitches (alternating the posts) and cut away the excess suture.



15

View of lateral suture final position.



16

The muscle and fascia over the femoral button and knot are closed routinely. The lateral fascia is imbricated and the lateral subcutaneous tissue and skin are closed in routine fashion.

Illustrations demonstrating appearance of stifle after TightRope CCL technique



Craniocaudal View



Lateral View



Medial View

Recommended Postoperative Management:

- Cefazolin - 22 mg/kg IV 30 minutes prior to incision, 90 minutes later, then q six hours
- Cephalexin - 22-30 mg/kg per os every 8-12 hours for 10 days post-op
- Bandaging at your discretion (soft-padded bandage for at least 24 hours is typical)
- Restrict to kennel rest when unobserved and controlled muscle building activities (i.e., leash walking) for eight weeks post-op
- Professional rehabilitation is encouraged

Guidewire

The 1.2 mm Guidewire is a helpful guide in obtaining the proper orientation before drilling through the canine bone.

Guidewire, 1.2 mm
AR-8920P



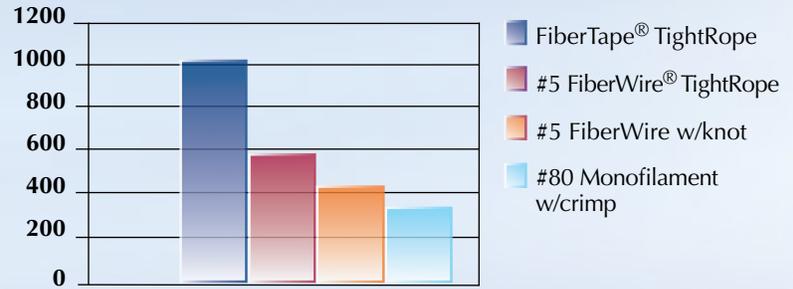
Cannulated Drill

The reusable 3.5 mm cannulated drill provides an aggressive head to drill through tough bone.

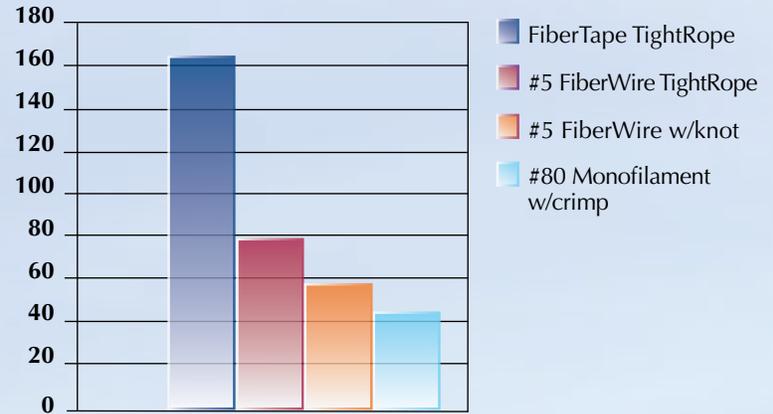
3.5 mm Cannulated Drill Bit
AR-8920DC



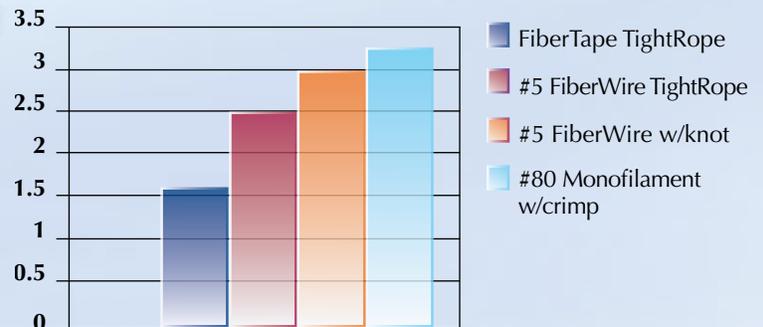
Ultimate Load (N)



Stiffness (N/mm)



Cyclic Displacement (mm)



Suture Tensioner with Tensiometer

The redesigned Suture Tensioner allows the surgeon to quickly set and control the desired tension on FiberWire and FiberTape suture. The open design allows for better visualization of the suture during suture capture and the easy to read tension markings allow the surgeon to accurately dial-in the appropriate tension setting. Once the desired amount of tension/reduction is achieved, half-hitches can be thrown down the shaft of the tensioner to secure the fixation.

Autoclavable for quick cleaning

Suture Tensioner with Tensiometer
AR-1529





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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 Vet Systems 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.

U.S. PATENT NO. 6,716,234 and PATENT PENDING.
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