



Academy Step by Step

The Lateral Button Suture for Cranial Cruciate Ligament rupture



A step by step guide to the procedure using LigaFiba® and button by Hamish Denny FRCVS

The placement of a non-absorbable suture between the lateral fabella and the proximal cranial tibia has been routine treatment for cranial cruciate ligament rupture since the procedure was first described by DeAngelis in 1970. Although there have been variations on his original procedure it still remains the extracapsular technique of choice today for management of cranial cruciate ligament rupture. The ideal lateral suture joins points of isometry between femur and tibia so that the suture remains

the same length throughout the whole range of joint flexion and extension. During placement of standard lateral sutures there is a tendency for the proximal strand of the suture to drift up to the straight patella ligament. This reduces isometry of the suture and the suture can become intra-articular which is undesirable. A toggle button on the medial side of the proximal tibial tunnel provides an anchor point for both strands of the lateral suture as they pass through the tunnel from medial to

lateral and isometry is maintained. The LigaFiba® lateral button suture comes with a swaged on curved cruciate needle on one end to allow passage around the lateral fabella and a swaged on straight needle on the other end to facilitate passage of the suture through the tibial tunnel. A toggle button is included in the pack.

Recommended instrumentation

The Kit contains:

Compound Action Crimpers for LigaFiba®

Heavy Duty Needle Driver

2 x 150lb LigaFiba® Lateral Titanium Button Suture with Crimp

2 x 250lb LigaFiba® Lateral Titanium Button Suture with Crimp

2 x 500lb LigaFiba® Lateral Titanium Suture Button with Crimp

LigaFiba® Scissors



LigaFiba® Lateral Button Suture with Crimp Starter Kit

Materials:

LigaFiba® and button

Ultra High Molecular Weight PolyEthylene (UHMWPE)

UHMWPE is 2.5 times stronger than nylon for any diameter and has better abrasion characteristics.

Rose et al in Veterinary Surgery 41 (2012) 266-272 found that LigaFiba® outperformed Fiber Tape, FiberWire, Xgen OrthoFiber and Mason Leader Line with respect to tensile strength, stiffness at failure, loading at elongation and resistance to cyclic elongation. It is our experience that abrasion plays a significant part in most lateral suture failures but we do not have, as yet, comparable data on abrasion resistance. We are confident that the Ultra High Molecular Weight PolyEthylene composition of LigaFiba® gives it excellent abrasion resistance also. Crimp 316L Stainless Steel



Lateral Button Sutures:

- LFLBS75Ti. 75lb (34kg) LigaFiba® Lateral Button Suture Titanium Button**
- LFLBS150Ti. 150lb (68kg) LigaFiba® Lateral Button Suture Titanium Button**
- LFLBS250Ti. 250lb (113kg) LigaFiba® Lateral Button Suture Titanium Button**
- LFLBS250DTI. 250lb (113kg) LigaFiba® Lateral Button Double Suture Titanium Button**
- LFLBS500Ti. 500lb (226kg) LigaFiba® Lateral Button Suture Titanium Button**

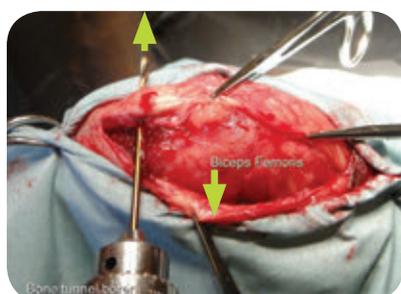
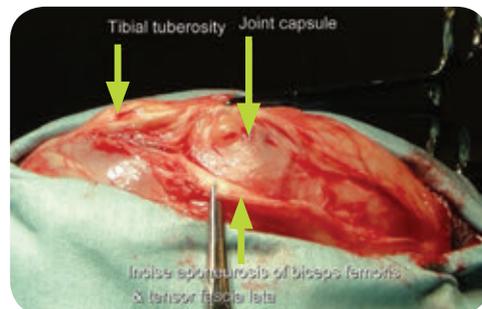
Surgical Technique – Lateral Button Suture - Left Stifle

Lateral parapatellar skin incision



1 The dog is positioned in dorsal recumbency which gives good access to both cranial and lateral sides of the stifle. Use of the multi-arm positioning device allows the limb to be positioned with the stifle first in flexion for examination of the meniscus and then the degree of flexion can be reduced for placement of the lateral suture.

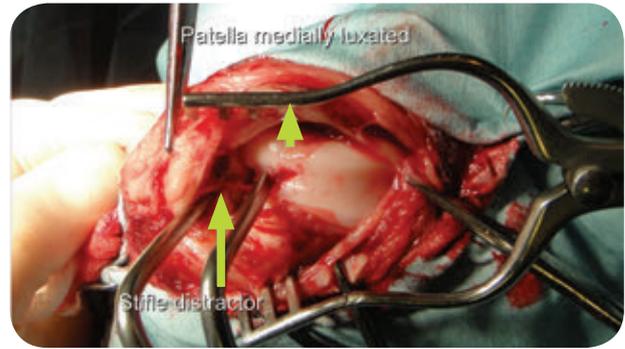
2 Approach the stifle through a lateral para-patellar skin incision. Incise through the aponeurosis of the biceps femoris and tensor fascia lata. Leave sufficient fibrous tissue on the patella to facilitate wound closure. Do not go through the joint capsule at this stage if possible.



3 Reflect the biceps femoris muscle caudally to expose the lateral fabella. A bone tunnel borer is used to drill a hole transversely through the tibial tuberosity just distal to the insertion of the straight patellar ligament.



4 Make a lateral para-patellar arthrotomy incision and luxate the patella medially. Use a stifle distractor to separate the joint surfaces, remove torn remnants of the cranial cruciate ligament, inspect the menisci, carry out partial medial meniscectomy if necessary (preserve as much of the meniscus as possible). If the medial meniscus is intact you may opt for a medial meniscal release to minimize the risk of secondary meniscal tears.



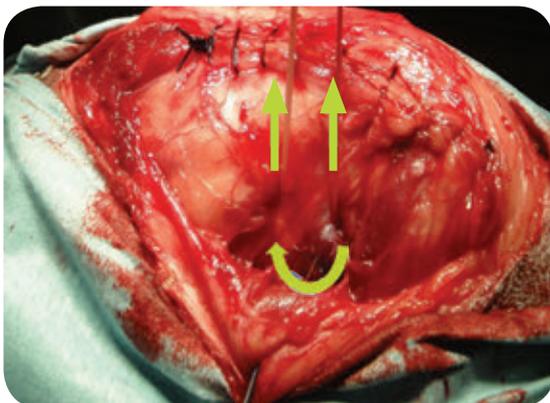
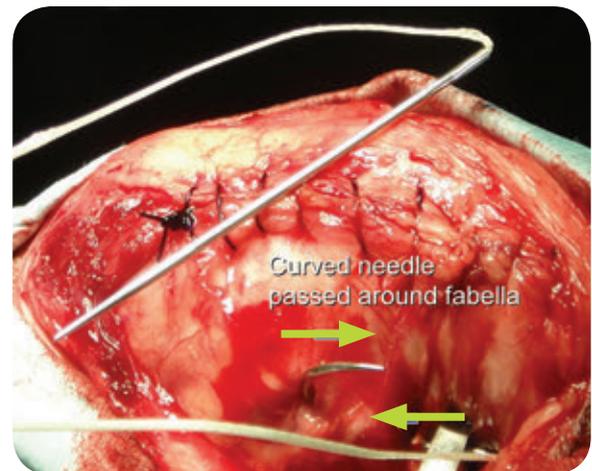
5 The joint capsule is closed with a continuous suture of PDS. The Lateral Button Suture is selected, the button is grasped with mosquito forceps and placed ready for use.

6 The lateral fabella is located by palpation, the curved needle on the lateral suture is grasped with a Heavy Duty Needle Driver and passed around the fabella penetrating the femorofabella ligament during the process. The cruciate needles are too large for regular needleholders.

It is important that the LigaFiba® stays very close to the fabella. The LigaFiba® will 'cheesewire' through any muscle trapped between the needle and the fabella which will ultimately reduce the tension on the loop.

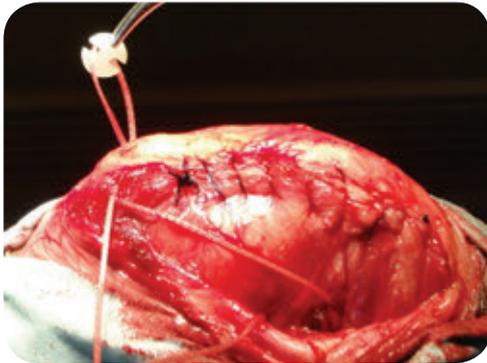
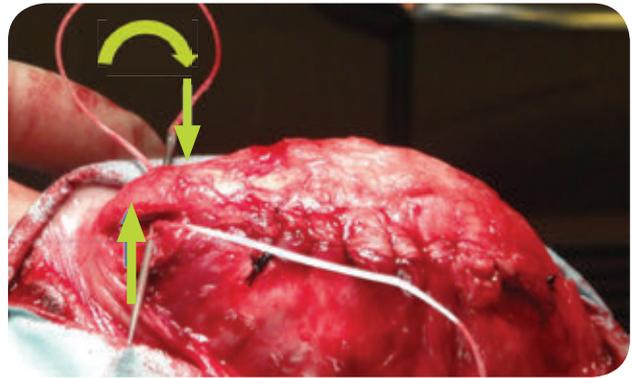
Avoid dragging the LigaFiba® across the cut edges of the skin to minimise contamination.

Exert traction on the ends of the LigaFiba® to ensure that the suture is firmly engaged around the fabella. The ends of the suture are then passed across the lateral aspect of the joint capsule towards the tibial tunnel. Failure to pass the suture around the fabella is a common technical error:



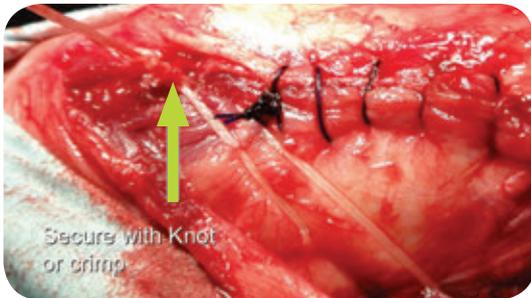
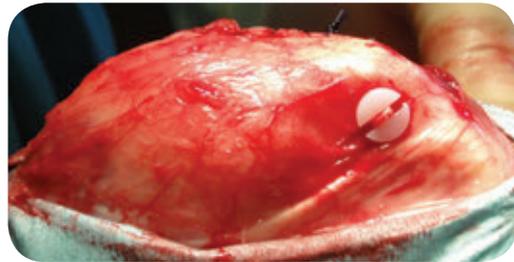
7 Pass the straight needle on the suture from lateral to medial through the tibial tunnel and then back from medial to lateral leaving a loop of suture on the medial side.

8 The loop in the suture is engaged in the slots of the button and by careful traction on the lateral side of the suture the button is drawn down tightly against the medial side of the proximal tibia forming a firm anchor point for both strands of the suture.

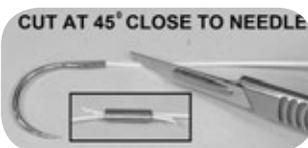


9 Medial view of the stifle showing button firmly engaged on medial side of the proximal tibia. Tighten the suture sufficiently to eliminate the cranial drawer movement and check for a full range of motion.

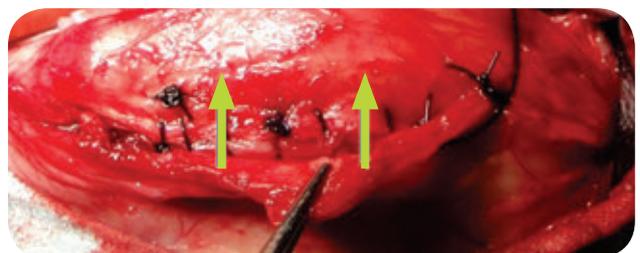
10 Take care not to create an outward rotation of the tibia.



11 The suture is secured either with a knot or crimp. Several throws are necessary and as the knot is tightened it can be slid down towards the lateral side of the tibial tuberosity and covered by the cranial tibialis muscle. Alternatively the suture can be secured with the stainless steel crimp provided in the suture pack. Three evenly spaced crimps are required. Dedicated LigaFiba® crimpers are required. To minimise fraying of the cut ends and to aid passage through the crimp the LigaFiba® is especially stiffened close to the needles. Cut at 45 degrees using a LigaFiba® scissors or a sharp blade.



12 The free cranial edge of the tensor fascia lata/biceps femoris is used to overlap the suture line in the joint capsule and is attached to the patellar tendon and straight patellar ligament with a second continuous suture of PDS. The remainder of wound closure is routine. The surgical wound is protected with an adhesive wound dressing for 5 days post-operatively.



LigaFiba® Lateral Titanium Button Suture Starter Kits



The LigaFiba® Lateral Button Suture With Crimp Starter Kit contains everything needed at a substantial discount.

The Standard Kit contains:

- Compound Action Crimpers for LigaFiba®
- Heavy Duty Needle Driver
- 2 x 150lb LigaFiba® Lateral Button Suture with Crimp
- 2 x 250lb LigaFiba® Lateral Button Suture with Crimp
- 2 x 500lb LigaFiba® Lateral Suture Button with Crimp
- LigaFiba® Scissors

The Small Kit contains:

- Compound Action Crimpers for LigaFiba®
- Heavy Duty Needle Driver
- 2 x 75lb LigaFiba® Lateral Button Suture with Crimp
- 2 x 150lb LigaFiba® Lateral Button Suture with Crimp
- 2 x 250lb LigaFiba® Lateral Suture Button with Crimp
- LigaFiba® Scissors

LIGAFIBA® LATERAL TITANIUM BUTTON SUTURE WITH CRIMP STARTER KITS

LFLBSSTARTERTI	LigaFiba® Lateral Titanium Button Suture with Crimp Starter Kit - Standard
LFLBSSTARTERTI/S	LigaFiba® Lateral Titanium Button Suture with Crimp Starter Kit - Small

LigaFiba® Lateral Titanium Button Suture



LIGAFIBA® LATERAL TITANIUM BUTTON SUTURE

LFLBS75TI.	75lb LigaFiba® Lateral Button Suture Titanium Button
LFLBS150TI.	150lb LigaFiba® Lateral Button Suture Titanium Button
LFLBS250TI.	250lb LigaFiba® Lateral Button Suture Titanium Button
LFLBS250DTI.	250lb LigaFiba® Lateral Button Suture Double Ti Button
LFLBS500TI.	500lb LigaFiba® Lateral Button Suture Titanium Button



LIGAFIBA® COMPOUND ACTION CRIMPERS

091135M LigaFiba® Compound Action Crimpers 245mm



LIGAFIBA® SCISSORS

LFS140TC LigaFiba® Scissors T.C. 145mm

HEAVY DUTY NEEDLE DRIVER

091153 Heavy Duty Needle Driver with Tungsten Jaws
195mm Long

BONE TUNNEL BORER - MODULAR

001070M	Bone Tunnel Borer 2mm Modular
001073M	Bone Tunnel Borer 2.5mm Modular
001071M	Bone Tunnel Borer 2.7mm Modular
001072M	Bone Tunnel Borer 3.5mm Modular

COUNTERSINKING BONE TUNNEL BORER - MODULAR SET

001075M Bone Tunnel Borer with Countersink Modular Set

MULTI ARM

026000	Multi Arm - 'Improved' Version includes Single Limb Support
020062	Double Limb Support
020065	Limb Brace Attachment for Multi Arm
MULTIARMSET	Multi Arm Set (as above)

Please note that this guide may feature UHMWPE buttons in the surgical images. Kits and packs as listed are supplied with Titanium buttons.

To place an order contact our Vi Advisor Team on 0345 130 9596 or email info@vetinst.com

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