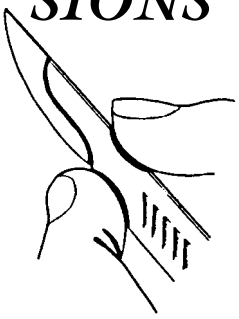
DIMENSIONS IN SURGERY



by SCOTT ANDERSON, DVM, Diplomate of the American College of Veterinary Surgeons, Diplomate of the American College of Veterinary Emergency and Critical Care, Diplomate of the American Board of Veterinary Practitioners
PHIL GILL, DVM, Diplomate of the American College of Veterinary Surgeons
LARRY LIPPINCOTT, DVM, Diplomate of the American College of Veterinary Surgeons
MARY SOMERVILLE, DVM, Staff Surgeon
SHARON SHIELDS, DVM, Staff Surgeon
RAVIV J. BALFOUR, DVM, Diplomate of the American College of Veterinary Surgeons
ERIN WILSON, DVM, Staff Surgeon

Dimensions in Surgery completes its 15th year!

Surgical Case Report:

Cranial Cruciate Ligament Rupture: Stabilization Using a Lateral Suture

EMPHASIS:

In veterinary practice, the most common orthopedic condition requiring surgery is injury of the cranial cruciate ligament. For larger patients (greater than 50 lb.), numerous techniques have been reported. For small patients stabilization with a lateral suture (from the lateral fabella through a hole drilled in the tibial tuberosity) is the standard technique. In this paper, we will describe this procedure.

PREOPERATIVE DIAGNOSTICS:

1. Physical examination.
2. Two-view radiographs of the pelvis and stifles.

AXIOM: *Be sure that all other orthopedic abnormalities that could produce lameness (i.e. a concurrent patellar luxation) have been ruled out.*

AXIOM: *Be sure to evaluate the opposite stifle. Bilateral cruciate ligament injuries are common.*

3. Minimum database: CBC, serum chemistry profile and urinalysis.

PREOPERATIVE CARE:

1. Indwelling cephalic catheter.
2. Intravenous anesthetic induction protocol (Ketamine/Valium, Propofol, etc.)
3. Endotracheal intubation and inflate cuff.
4. Isofluorane inhalant anesthesia to effect.
5. Lead II ECG and pulse oximetry monitoring during prep and surgery.
6. Clip and prepare the limb circumferentially.
7. Cephalexin 20 mg/kg IV immediately preoperatively.

SURGICAL TECHNIQUE:

1. Lateral parapatellar incision, starting just proximal to the lateral fabella, extending to the middle portion of the tibial tuberosity.
   (See Figure 1).

AXIOM: *The incision should be curvilinear, as shown.*

2. Routine lateral parapatellar approach to the stifle, incising the lateral joint fascia and joint capsule to invade the joint.

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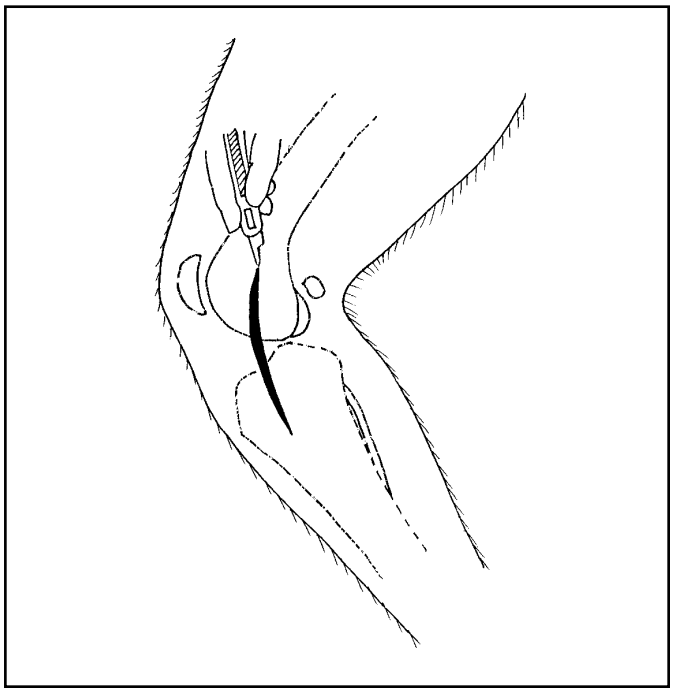

Figure One: This schematic drawing depicts the lateral aspect of the left stifle. A curvilinear skin incision begins at a point just distal to the medial portion of the tibial tuberosity and ends at a point just proximal to the lateral fabella.

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3. Debride the torn remnants of the cruciate ligament.
4. Examine the menisci and remove any torn or damaged portions.

AXIOM: *We often perform a "meniscal release" in larger patients, but meniscal tears are quite uncommon in smaller (less than 50#) patients. Therefore, we do not routinely perform this procedure in patients of this size.*

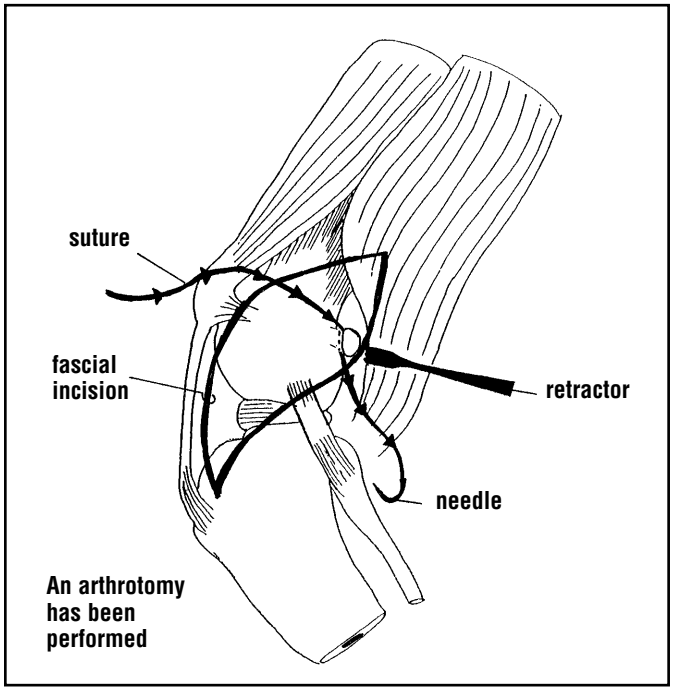

Figure Two: This schematic drawing depicts the passage of a ligature passer or a swedged on needle behind the femorofabellar ligament.

5. Bluntly dissect deep to the biceps muscle, to expose the lateral fabella.
6. Using a ligature passer (or, with a swedged-on needle) pass a suture around the femorofabellar ligament. *(See Figure 2).*

AXIOM: *Monofilament nonabsorbable material such as nylon, polypropylene, or polybutester (Novafil) should be used.*

AXIOM: *Braided multifilament material has a significant risk of eventual infection and fistulous tract formation; this is extremely rare with monofilament material.*

AXIOM: *Multiple strands of monofilament material can be placed if warranted; this does not increase the risk of fistulous tract formation.*

7. Grasping the tip of the suture in a hemostat, bluntly pass the suture under the distal end of the patellar tendon. *(See Figure 3).*

AXIOM: *Obviously, if the suture were placed over the anterior surface of the tendon, it would cause pressure necrosis of the tendon postoperatively.*

8. Drill a hole through the tibial tuberosity, slightly distal and caudal to the insertion of the patellar tendon. *(See Figure 4).*
9. Pass the suture material through this hole.

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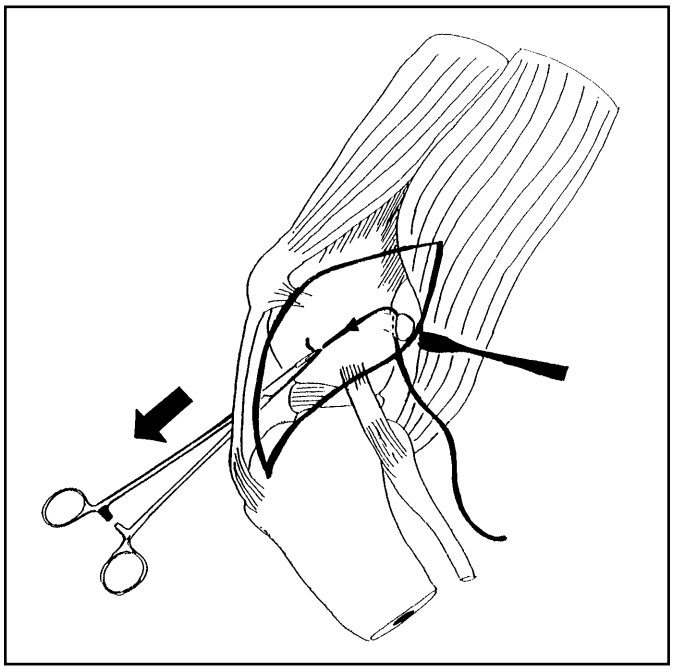

Figure Three: This schematic drawing depicts the suture tip being grasped by a hemostat and the suture is bluntly passed under the patellar tendon.

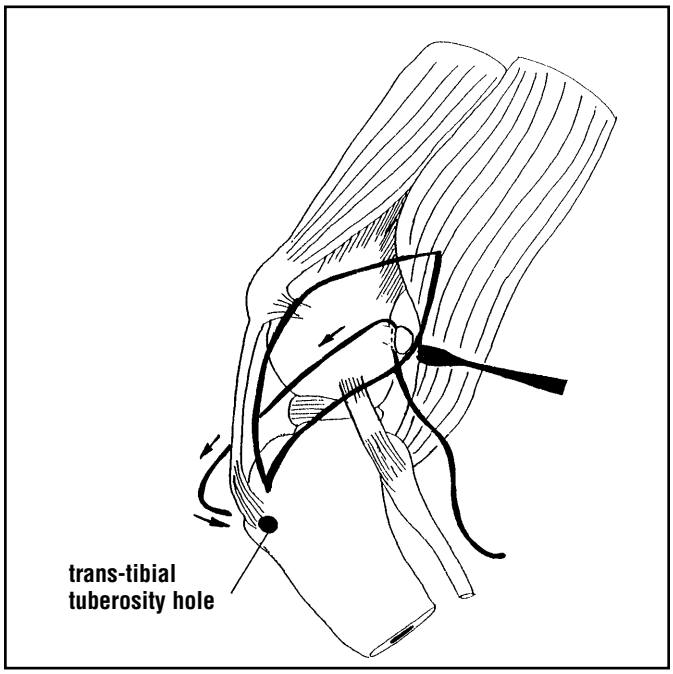

Figure Four: This schematic drawing depicts a hole that has been drilled through the tibial tuberosity slightly distal and caudal to the insertion of the patellar tendon.

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10. Pass a curved hemostat deep to the biceps femoris tendon of insertion and the anterior tibialis muscle, and grasp the end of the suture. *(See Figure 5).*
11. Draw the suture through. *(See Figure 6).*
12. Using 3-0 or 4-0 monofilament absorbable material, close the joint capsule.
13. Tie the lateral suture, with sufficient tension to eliminate the anterior drawer sign. *(See Figure 7).*

AXIOM: *Some surgeons advise placing another similar suture from the medial femorofabellar ligament to the tibial crest. We do not routinely do this.*

14. Routine closure of the lateral joint fascia, subcutaneous layer and skin.

POSTOPERATIVE CARE:

1. Suture removal 2 weeks postoperatively.
2. Cephalexin l0 mg/kg p.o. for 5 days postop.
3. Pain management using oral, injectable, or transdermal analgesics as needed.
4. Limit the activity to single room confinement indoors, and very short leash walks outdoors during the next 6 weeks.

PROGNOSIS:

Optimistic with greater than 90% of patients returning to full weight bearing after 8-12 weeks of healing.

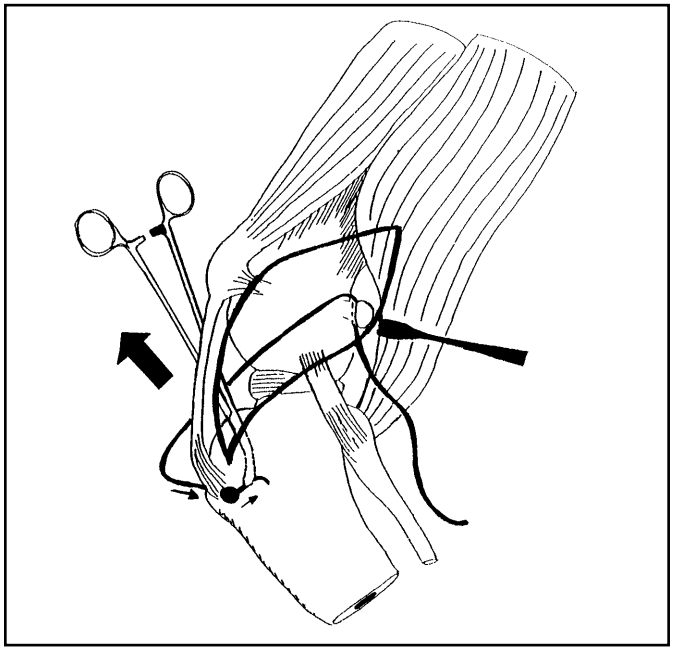

Figure Five: This schematic drawing depicts the passage of a curved hemostat deep to the insertion of the biceps femoris muscles and the anterior tibial muscle. The hemostat tips grab the end of the suture that was passed through the hole in the tibial tuberosity. The forceps pull the suture into the fascial opening.

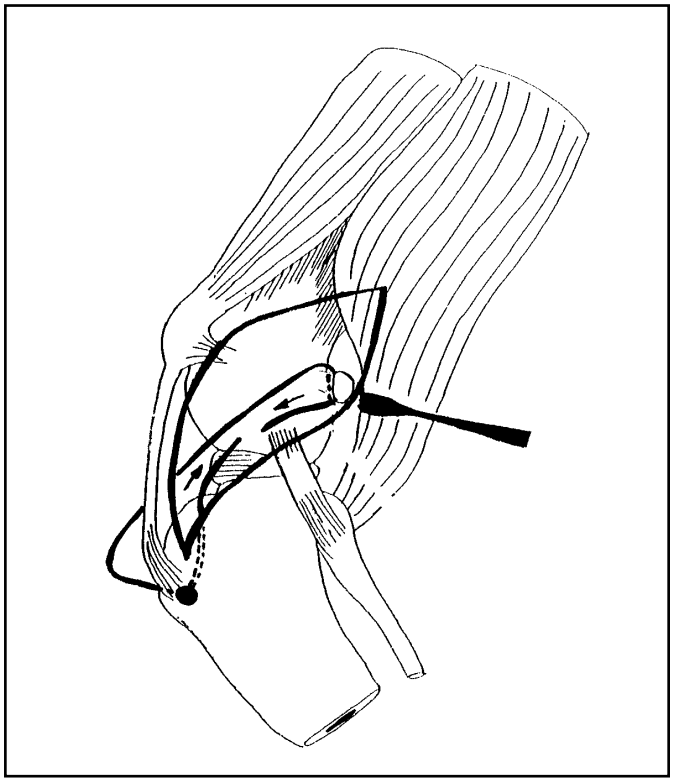

Figure Six: This schematic drawing depicts both ends of the passed suture being pulled toward each other.

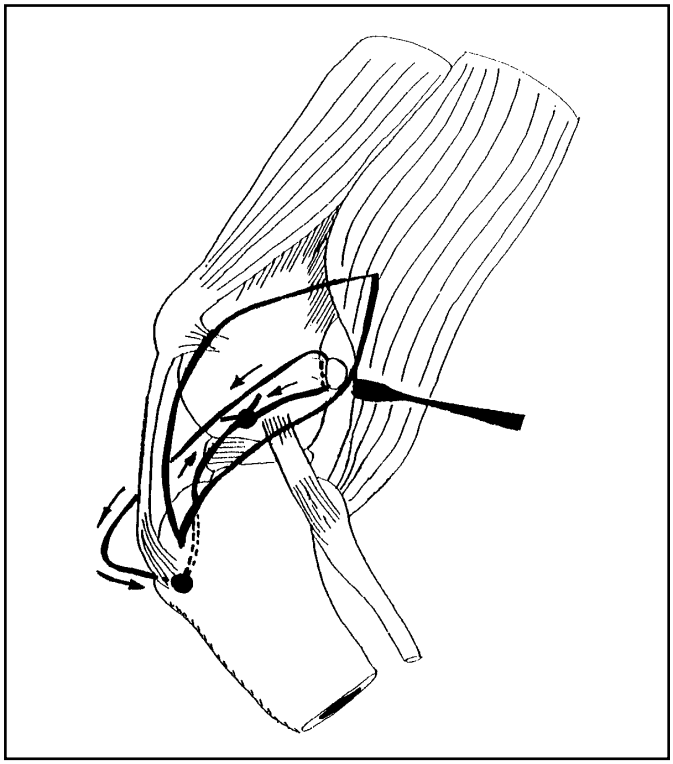

Figure Seven: This schematic drawing depicts the tying of the suture ends with sufficient tension being applied to the eliminate the anterior drawer reflex.

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AUTHOR'S NOTE

If you have any questions concerning this paper, additional references, surgical supplies or sources of products mentioned or used in this protocol, please FAX us at 1-310-479-8976. We will answer your questions promptly.

Coming Attractions

In the past, numerous techniques have been used in the surgical treatment of prostatitis, prostatic abscesses and prostatic cysts. Partial or complete prostatectomy, marsupialization, or debridement and drainage have all been advocated; unfortunately all of these techniques are associated with complications such as incontinence, cyst or abscess recurrence, etc.

More recently, prostatic omentalization has been described. In this procedure, after opening and draining any cystic cavities or abscesses within the prostate, a portion of the omentum is passed through the prostate by blunt dissection. This improves the vascular supply to the affected tissue and prevents re-formation of a closed cystic/abscess cavity.

Next month, we shall present our protocol for Prostatic Omentalization.