

Controversies in RCCL Repair

Objections of the Presentation

To review the popular methods, pro's and con's of arthrotomy, cranial cruciate debridement, meniscal release, and RCCL repair techniques. To address the issues of evidenced based medicine in clinical decision making for RCCL patients in everyday practice.

Key Points of the Presentation

- It has long been considered “standard of care” to perform an arthrotomy of the stifle during RCCL repair.
- Many surgeons have believed that debridement of the torn ends of the ligament was necessary as it cut down on inflammation of the joint during the postoperative recovery period.
- Meniscal release was presented by Slocum after the introduction of the TPLO as being necessary to prevent further trauma to the medial meniscus after TPLO. Others have adopted it as part of any repair method.
- Evidenced based (EBM) medicine is becoming more popular in justifying what we do as veterinarians for our patients. EBM is lacking for most repair methods for RCCL repair in the dog.

Overview

Many articles exist on the “right” and “wrong” way to address RCCL issues in small animals. While many of them proclaim to have confounding evidence suggesting that their study supports their theory, other articles will refute the same evidence a short time later. Controversial issues in RCCL repair include: should we perform an arthrotomy? Should we perform a meniscal release? What is the “right” repair method?

Should I do an arthrotomy & debridement in every case of RCCL?

Lineberger et al (VCOT 2005) compared two different techniques of TPLO in which one group received an arthrotomy with debridement of the RCCL, while the other group received a modified “mini” caudomedial approach to the joint, simply for the purpose of performing medial meniscal release. The progression of osteoarthritis was judged to be significantly less with a mini approach than with a standard craniomedial arthrotomy.

Hoelzler et al (Vet Surg 2004) compared 2 groups of dogs in which the CCL was transected through an open arthrotomy or arthroscopic approach. These stifles were stabilized using 2 lateral extracapsular fabellar-tibial sutures. The conclusion of the study was that significant differences were seen between the arthroscopy and arthrotomy groups for peak vertical forces, vertical impulse, comfortable stifle range of motion and flexion, and thigh circumference data. This suggests that the CCL remnant may not contribute significantly to the radiographic appearance of osteoarthritis in the stifle following joint stabilization.

In cases of partial RCCL, some surgeons prefer not to debride the RCCL, and forgo meniscal release. In these cases, it has been my observation that some go on to become full tears, and this alone may in fact result in chronic residual stifle pain. Further, if the stifle becomes more unstable as a result, theoretically the meniscus would be subject to tearing.

Meniscal Release

Medial meniscal damage has been reported following TPLO, fibular head advancement, and lateral suture methods. This is an important differential in chronic residual pain following any of these procedures.

Slocum developed the meniscal release procedure as an integral part of TPLO to allow the caudal horn to freely slide further caudally, avoiding significant impingement. The consequences of meniscal release are poorly documented, and in fact many surgeons prefer not to cut across a perfectly intact medial meniscus, particularly in the cases of partial RCCL.

The primary mechanism of medial meniscal injury in the unstable stifle is thought to result from excessive caudal sliding of the femoral condyle as a result of loss of the restraint provided by the CCL. The lateral meniscus may undergo stretching as the femur moves caudally with the menisiofemoral ligament attached to the lateral meniscus.

In a study by Pozzi et al (2005), medial meniscal release results in a focal area of high pressure in the caudal region of the medial tibial condyle, in fact an increase of 2-fold. Medial meniscal release also caused a greater increase in cranial tibial thrust in the RCCL stifle. CTT and the displacement of the caudal pole of the meniscus following TPLO were lessened, suggesting the incidence of late meniscal injury should be lessened following the procedure.

Which Technique?

Evidence based medicine (EBM) is the integration of clinical expertise, patient values, and the best evidence into the decision making process for patient care. In applying EBM to RCCL repair, there is no single technique that has enough data to recommend it will consistently return a dog to normal function after RCCL repair (Aragon et al, Vet Surg 2005)

The mere existence of so many repair methods for RCCL in the dog should indicate to the practitioner that the best method may be the one you have the best results with. While anecdotally, we may all feel that TPLO is the gold standard, many of us still use the lateral suture method with good results. One study by Lazar et al (Vet Surg 2005) demonstrated that osteoarthritis scores of dogs that had lateral suture repair were higher than dogs with TPLO at 6 month postoperative evaluations, success rates with RCCL repair are reported to be > 95% regardless of the technique employed.

Decision making for your clients should be based on:

- (1) Patient size – those less than 15 kg may benefit equally from conservative management as compared to surgical intervention
- (2) TPLO is expected to be associated with at least some increased of complications, and certainly an increase in cost. The overall complication rate of TPLO is reported to be from 26-34% and will certainly be associated with an increase in cost to the client.
- (3) TTA being a “new comer” on the block currently has a much lower complication rate, perhaps in the 5-10% range. Long term studies are lacking at this point.
- (4) Reportedly, 33% of dogs will tear their opposite CCL within several years of the first. Owners should be apprised of this.

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