

Cranial Cruciate Insufficiency Update

Walter Renberg, DVM, MS, DACVS

Kansas State University

Manhattan, KS

Despite being one of the most common disease syndromes in small animal orthopedic practice, some of the most fundamental questions remain unanswered. The best surgery, the expected outcome, and even the cause of the problem cannot be answered definitively. This presentation will examine the current thoughts on managing cranial cruciate ligament disease and offer educated opinions from a practical perspective.

The diagnosis of a cranial cruciate ligament (CCL) injury is relatively straight forward based on the presence of cranial drawer motion or tibial thrust. Partial tears can often be diagnosed based on drawer with stifle flexion, but occasionally no drawer or thrust can be felt. In these cases, if the clinician strongly believes a partial tear is present (based on pain, effusion, medial buttress, history and signalment) then an exploratory surgery should be proposed to the owner. Alternatively, a period of approximately 4 weeks can be used to determine if the tear becomes easier to diagnose. Even partial tears can develop arthritis, so surgery should not be delayed for long. In cases with a confirmed diagnosis, surgery should be scheduled as soon as possible. Note that radiographs are not helpful in the diagnosis, but may give information pertaining to prognosis (e.g. degree of osteoarthritis), rule out other diseases, or be important for planning surgery (tibial plateau leveling osteotomy).

The remaining questions primarily revolve around treatment decisions. The smallest of dogs (less than 5-10 kg in the speaker's opinion) can be managed with restricted activity but will still likely do better with surgery. When performing surgery, it generally considered important to open the joint (arthrotomy or arthroscopy) to determine if meniscal injuries are present. At the same time, ligament remnants should be debrided and the cartilage health should be assessed.

The choices for surgical correction of CCL in dogs are myriad. I believe that of all the options, the lateral fabellar suture technique (lateral imbrication) is sufficient for most dogs that are otherwise healthy, are not working dogs (or high-level athletes) and are not overly heavy (due to breed or obesity). There is no precise weight cut-off for this procedure, but the larger the dog the more important post-operative care will be. For large dogs, obese dogs, high-level working or sporting dogs, and for those with other injuries (e.g. arthritis of contralateral limbs), a TPLO or tibial tuberosity (TTA) advancement is likely the best choice. The choice between a TPLO and a TTA is hotly debated and it is likely that the two procedures fulfill similar positions as to patient selection and outcome. The TTA may have a higher incidence of postliminary meniscal injuries and may not be as well suited for dogs with very steep tibial plateau angles.

The use of splints and braces to address CCL injury has recently received increased attention. Glowing anecdotal testimonials notwithstanding, at the present, there is insufficient evidence to support their use as a long-term treatment. Similarly, the use of stem cells and other alternative methods, while potentially helping with arthritic pain, should not be considered a viable therapy for surgery.