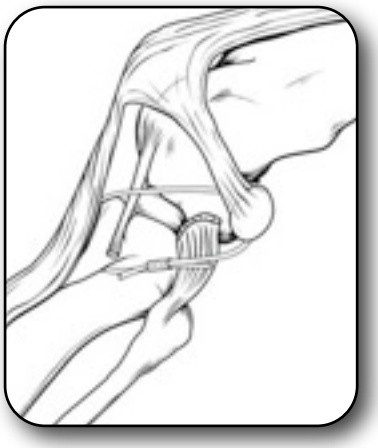
Options for Cruciate Ligament Repair in Dogs

Dr. Charles A. Kuntz, DVM, MS, MACVSc, Diplomate of the American College of Veterinary Surgeons, Registered Specialist of Small Animal Surgery, Fellow of Surgical Oncology

Cruciate ligament rupture is the most common orthopaedic disease seen in dogs. Traditionally, it was thought of as a specific injury resulting from acute stress on the knee causing an acute ligament tear. More recently, theories of an abnormal slope to the tibial plateau have been developed which probably more accurately address the inciting cause.

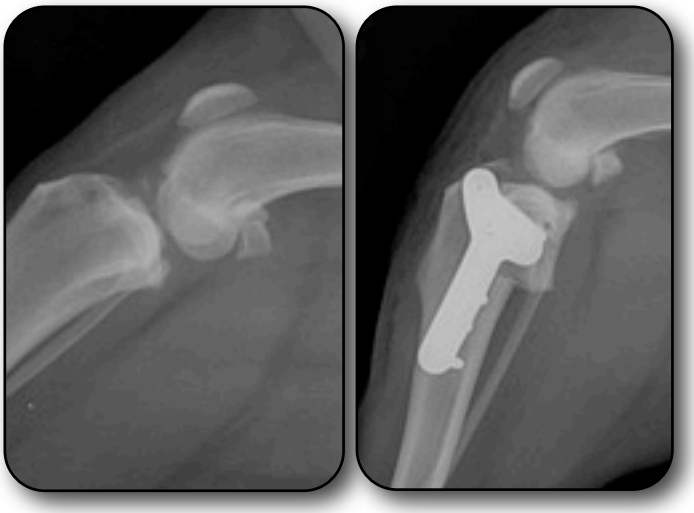
When the tibial plateau is tilted backwards, the femur tends to slide "downhill" putting stress on the cruciate ligament. Repeated stress ultimately results in failure. Studies have shown that in dogs weighing less than 15 Kg, conservative (non-surgical) management is often appropriate. This involves weight-loss, pain relief, cartilage protectants and exercise modification (physiotherapy). In dogs weighing over 15 Kg, non-surgical management is only associated with a 40% success rate. Surgical management results in an 85-95% success rate depending on issues like body weight and proportions, rehabilitation and surgical technique used.

Dr. Charles Kuntz regularly performs three different techniques for cruciate ligament repair. There are advantages and disadvantages to each. The traditional technique for cruciate ligament repair is called **extracapsular repair.** It involves replacement of the ligament with a piece of nylon. Advantages of this technique include technical simplicity, infrequency of complications and cost. These are most commonly done at primary care veterinary clinics with good success. The primary disadvantage is a much higher incidence of severe arthritis when compared with other procedures. It is most appropriate for small to medium sized dogs with a moderate level of activity.



The second commonly performed technique is called the **TTA or tibial tuberosity advancement** procedure**.** It is a fairly new procedure which has had very favourable results. In this procedure, the tibial crest is advanced forward so that the patellar tendon acts like the cruciate ligament. The primary advantage is very rapid recovery, when compared with any other repair technique. The disadvantages include relatively short track-record and potential for meniscal injury. The meniscus is a shock-absorber between the femur and the tibia. A meniscal release procedure can prevent this damage in the future. Results to date are very encouraging and we have been particularly impressed with the speed of recovery.

The third procedure is the **TPLO or tibial plateau leveling osteotomy**. This procedure has been around for around 20 years and the results are as good or better than anything else published to date. This procedure is based on the fact that the tibial plateau in cruciate-deficient knees is tilted backward, causing excessive tension on the cruciate ligament. The top of the tibia is cut and rotated to make the cruciate ligament obsolete. The advantage of this



procedure is the excellent outcome. The disadvantage is cost when compared with the other procedures.

Why have the surgery done by Specialty Surgery for Animals?

At Specialty Surgery for Animals, we pride ourselves in excellence, compassion, integrity and experience. You can be assured that we will do everything in our power to achieve a great outcome. First, your surgeon, Charles Kuntz, is a registered specialist in Small Animal Surgery. He has operated on over 1,400 knees for a variety of orthopaedic conditions with excellent success rates.

At Specialty Surgery for Animals, all patients have onsite- 24 hour monitoring after surgery. This means that issues including administering pain relief, addressing toileting needs and making sure your pet is clean and dry are attended-to promptly as they occur. Because we limit the number of patients having surgery on any one day, you can rest assured that your pet's needs are addressed and the nurse will not be distracted by emergencies or by having too many patients under his/her care.

Anaethesia

At Specialty Surgery for Animals, we put great emphasis on having safe and effective anaesthesia. We have received comments from human anaesthetists that our practices here rival those in human hospitals. In achieving that end, we have the best equipment that money can buy for monitoring and administering anaesthesia. All patients are placed on a ventilator and have vital signs including electrocardiography, pulse oximetry, thermography, blood pressure and capnography measured, as well as inspired oxygen, tidal volume, minute volume and airway pressure. The use of an epidural markedly reduces the requirement for anaesthetic drugs.

Pain relief

Specifically relating to pain relief, we think that the belief that animals need to feel some pain to keep them from injuring themselves is cruel and archaic. In the ideal situation, ***the patient feels no postoperative pain at all***. All patients having knee surgery can receive an epidural which provides complete pain relief throughout the surgery and for 24 hours after surgery. During this time period, a narcotic is administered as-needed for additional pain relief. They also receive a narcotic patch which provides time-released pain relief for 4 days postoperatively. All patients are administered antiinflammatories for the postoperative period and can be prescribed other oral medication if needed as well.

Patient warming

Patient hypothermia is a common complication of general anaesthesia. Preventing hypothermia has many benefits. These include increased patient comfort, reduction in infection rates, more rapid recovery from anaesthesia, and a greater rate of healing and recovery. Here at Specialty Surgery for Animals, we go to great lengths to make sure that your pets stays warm during and after surgery. These include short operative time (given Charles extensive surgical experience), avoidance of drugs which cause hypothermia and low blood pressure, close monitoring of anaesthetic depth, active patient warming using a heated surgical table and forced warm air, the use of heated blankets, and making sure that your pet stay clean and dry during and after surgery.

Biography:

Charles graduated from the University of Florida in

1990. He then did an internship at the Animal Medical Center in New York City. He completed a residency and Master's degree in surgery at Virginia Tech in 1994 and achieved specialty board certification in surgery in 1996. He did a one year fellowship in cardiovascular research and surgery. He completed a fellowship in surgical oncology at Colorado State University, and is one of 20 people world wide to have received this training. He was then a professor of Orthopedic Surgery at Colorado State University before he left for Northern Virginia where he started a surgical referral practice which was among the busiest in the Washington DC area. Charles moved to Australia 4 years ago and is the director of SouthPaws Specialty Surgery for Animals in Melbourne.

Charles has published many scientific articles, summary articles, abstracts, proceedings and book chapters on topics of surgical oncology and general and orthopaedic surgery. He was the chairperson of the oncology section of the National Meeting of the American College of Veterinary Surgeons. He is the section editor of the oncology section of the current edition of Slatter's Textbook of Small Animal Surgery. He was the surgical expert on panel discussions of feline vaccine associated soft tissue sarcomas at recent meetings of the American College of Veterinary Surgeons and the American College of Veterinary Internal Medicine. He was asked to write a chapter for a human surgical oncology textbook in bone cancer because of his reputation and expertise in cancer surgery. He started and currently runs Australia's first deep radiation therapy unit for animals. He has 5 United States patents for devices used in the treatment of diseases in animals. He has personally operated on over 5,000 patients with cancer with local cure rates of over 95%. Charles has been seen on "Talk to the Animals", "Animal ER", "A Current Affair", "National Nine News", "The Today Show" as well as numerous appearances on ABC radio. He receives referrals from all over Australia and consultations by phone and email world-wide.