

Equine Arthroscopy Course, November 4th - 6th, 2004

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Each year Colorado State University (CSU) runs equine surgery and medicine continuing education courses for veterinarians. Courses in basic and advanced arthroscopy are held in Fort Collins, at the CSU Veterinary Teaching Hospital. The lectures are presented by leading equine surgeons, starting with the basics, progressing to advanced equine arthroscopic techniques. Practical sessions are designed to allow hands on experience with the latest equipment, under the guidance of specialist surgeons. A summary of the main points covered in the course is outlined below. Information on course schedules for 2005-2006 can be found on the CSU web site, www.colostate.edu.

Major advances in treating developmental and acquired joint disease have been made following the development of arthroscopy in the horse. Prognosis has been improved and the potential for complications significantly reduced. Techniques for treating osteochondral 'chip' fragments of the fetlock, carpus, tarsocrural, and stifle joints are now commonplace in equine surgery. Other less commonly affected joints are the shoulder, interphalangeal joints, elbow and hip.

Indications for arthroscopic surgery most commonly include joint associated lameness with fragments identified on x-rays. Horses with lameness referable to a joint with no radiographic changes, but significant effusion, are also candidates for diagnostic arthroscopy in some cases. Intra-articular ligament damage, for example medial palmar intercarpal ligament tearing, may not be evident with x-rays or other diagnostic imaging modalities, but can be detected during arthroscopy.

As with persistent effusion of a joint, persistent synovial sheath effusion can be investigated by using diagnostic tenoscopy. The carpal canal is commonly affected by persistent synovial effusion. Tenoscopic techniques are described to evaluate the deep and superficial digital flexor tendons for longitudinal tears, and the back of the radius for osteochondromas or physal exostosis. The digital flexor tendon sheath can also be evaluated for deep digital flexor tendon tears, intrathecal masses or annular ligament constriction. Diagnosis of these conditions can assist in the treatment and/or prognosis

Arthroscopic surgery of the stifle joints was covered extensively in the course material. The stifle joints are well suited to arthroscopy, as arthrotomy previously performed in this location was often subject to high morbidity. Arthroscopy provides a feasible and effective way to diagnose, and potentially treat, many conditions of the stifle that may otherwise go undiagnosed. Anatomical structures difficult to evaluate clinically, such as the medial and lateral menisci and their associated ligaments, and the cranial and caudal cruciate ligaments, are at least partially accessible with arthroscopy. The femoropatellar joint in particular, has a good prognosis for return to athletic function after surgical treatment for OCD of the trochlear ridges, even if the lesions are quite severe. Unlike the hock, where tarsocrural OCD is often accompanied by fetlock OCD, it is infrequent to

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have OCD elsewhere when stifle OCD is present. Motorized equipment such as the synovial membrane resector, is of particular use to allow visualisation in the stifle joints.

The femorotibial joints can be examined from cranial and caudal approaches, and both approaches should be performed for a complete diagnostic arthroscopy of these joints. Subchondral bone (SCB) cysts can be assessed and treated, by debridement of the cyst and lining. More recently newer techniques such as bone graft and fibrin glue, or intra-lesional corticosteroids (triamcinalone) have been used to treat SCB cysts of the medial femoral condyle of the femur, however it is too early to tell if current treatment recommendations should be altered.

Use of the micro-fracture technique (creating pin point defects in the SCB plate using a small punch to allow delivery of marrow derived reparative cells to the area) is recommended with articular cartilage damage when the SCB plate is intact. Gene therapy is an ongoing area of research, for example use of insulin-like growth factor (IGF-1) and gene therapy in combination with inflammatory cytokine antagonists, such as interleukin-1 receptor antagonist (IL-1RA). Articular cartilage grafting, and the use of mesenchymal stem cells are also exciting possibilities for cartilage resurfacing.

Postoperative rehabilitation was discussed. Although the risk of joint sepsis following arthroscopic surgery is low, it is a potential complication. The chances of a postoperative joint infection occurring can be reduced by client education and strict adherence to discharge advice. Sutures that are not removed at an appropriate time (ie: 7-10 days after surgery) or that are improperly removed, can result in subcutaneous and/or intra-articular infection. Careful attention to bandaging and management of the incisions under the supervision of a veterinarian is imperative. Stall rest with hand walking is essential for the first month, with other rehabilitation techniques used during the next 2-4 months of rehabilitation depending on the condition. The under water treadmill is an attractive alternative to swimming pools and offers reduced weight bearing for treadmill training in the early post operative period. Acoustic shockwave therapy as an adjunctive treatment for osteoarthritis and joint disease was also mentioned, and was presented at the 2004 AAEP meeting in Fort Collins. Use of combinations of chondroprotective drugs such as polysulphated glycosaminoglycans, hyaluronic acid, pentosan polysulphate, glucosamine and chondroitin sulphate can be useful in improving the quality of the repair tissue and reducing clinical signs associated with cartilage damage.

Diagnostic and therapeutic arthroscopy has revolutionised the management of equine joint disease, particularly in performance horses. Where a prompt return to racing is desired, minimally invasive arthroscopic techniques, on appropriately selected cases, provides the best chances of a successful outcome for exercise associated osteochondral fragments or fractures.

The course was comprehensive and motivating and was attended by veterinarians from both private practice and universities. It is a highly recommended course for those interested in equine surgery and arthroscopy. I would like to thank the NZERF for assisting with travel within the United States to attend this course.