

Arthroscopic Surgery for Equine Joint Conditions

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Arthroscopic surgery (arthroscopy) is minimally invasive surgery in which a rigid endoscope attached to a camera is inserted into the joint via a small incision. The surgeon can then view the inside of the joint on a video monitor. Arthroscopy has many advantages over traditional joint surgery (arthrotomy) primarily in that the joint does not have to be opened fully. Rather the entire procedure is performed using two small incisions; one for the scope, and one for the instruments used to treat the lesion present. Because the joint does not have to be completely opened, the recovery time is usually significantly reduced, and the success rate may be greater due to a decrease in trauma to the connective tissues around the joint.

The first human arthroscopic surgery was performed at the University of Tokyo in 1918. It was many years later before the procedure was being performed clinically in the horse (mid 1970's). The technique has progressed rapidly in equine patients, and by the early 1990's arthroscopy became the accepted way of performing almost all joint surgery in the horse.

Arthroscopic surgery can be used for diagnostic or therapeutic purposes. With the advent of the MRI, arthroscopic surgery in humans is almost exclusively therapeutic in nature. In the horse however, arthroscopy is still commonly used to help diagnose joint disease; especially injury to soft tissue structures that will not show up with traditional radiography (such as meniscal or cruciate injuries in the stifle). As MRI becomes more common place in equine veterinary medicine, and new technology allows for the larger equine joints to be imaged, then we will likely see a shift to strictly therapeutic use of the arthroscope in the horse. At this time however, if your horse's lameness has

been isolated to a specific joint, and radiographs and ultrasound are inconclusive, then an arthroscopic evaluation of the joint is often indicated to determine if there is cartilage or soft tissue damage that could not be visualized via conventional diagnostic methods.

Although arthroscopic surgery is a valuable diagnostic tool in equine veterinary medicine, the primary use of the arthroscope in the horse is for therapeutic purposes. Arthroscopic surgery is commonly used to treat developmental orthopedic disease (DOD) in young horses such as osteochondrosis (OD) or osteochondritis dissecans (OCD). It is also used commonly in equine athletes who have sustained chip fractures (osteochondral fragments). Although chip fractures can occur in any equine athlete, they are most commonly seen in race horses, and the primary joints affected are the knee and ankle (carpus and fetlock). In cases of OCD or chip fractures, the horse is placed under general anesthesia, the affected joint is prepared for surgery, and two small incisions (less than 1 cm in length) are made in the skin overlying the joint. One incision allows placement of the arthroscope in the joint so the surgeon can visualize the lesion, and the other incision allows the instruments to be placed in the joint to allow chip fracture removal or debridement of an OD lesion.

Arthroscopic surgery is also a valuable tool for surgeons repairing bone fractures that communicate with the joint. With the use of the arthroscope, the surgeon can view the fracture reduction to ensure that the joint surface has been reconstructed as close to normal as possible. Step defects (incongruent joint surfaces on either side of the fracture line) can cause significant degenerative joint disease (arthritis) after the fracture has healed. Therefore, the ability to visualize the joint surface with the arthroscope after fracture reduction, but before implant (screw or plate) placement is critical to maximize the chance of a successful return to athletic soundness.

Another diagnostic as well as therapeutic use of the arthroscope is in

lacerations or puncture wounds that enter a joint or tendon sheath. The surgeon can evaluate the affected synovial structure for visible contamination or foreign bodies, as well as assess injury to the cartilage or soft tissue structures within the joint/sheath. The arthroscope allows for high volume lavage of the contaminated/lacerated synovial structure. This lavage, in combination with local and systemic antibiotic therapies, can enhance successful resolution of infection that may be a result of the laceration or puncture.

Equine surgeons have embraced the use of the arthroscope for joint conditions over the past several decades. As compared to arthrotomy, our equine patients benefit from a decrease in morbidity (operative or postoperative complications), as well as a quicker return to athletic soundness and often a longer athletic life. Many advances have been made with the use of the arthroscope since its introduction to equine surgery in the 1970's. It can now be used in most equine joints as well as many other synovial structures such as the digital tendon sheath, the navicular bursa, the carpal canal, etc.

Contact Brandon Equine Medical Center at 813-643-7177 or email info@brandonequine.com with any questions regarding this topic.

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