DIAGNOSTIC & SURGICAL ARTHROSCOPY

Endell Equine Hospital
Salisbury



What is arthroscopy?

Arthroscopy is a minimally invasive ('keyhole') surgical technique used to examine and treat joints and other synovial structures. At Endell Equine Hospital, we have a state-of-the-art arthroscopy system incorporating a 4K video camera, arthroscopes and specialised surgical instruments, all of which can be introduced through incisions of approximately 5 mm.



The arthroscope provides a magnified, high-definition view inside the joint, allowing the surgeon to examine structures including the articular cartilage, bone surfaces, ligaments and other soft tissues in considerable detail.

Arthroscopy is an important part of modern equine orthopaedic surgery. Compared with traditional open surgery, the small incisions result in less disruption of the surrounding tissues and generally allow faster healing and recovery. Perhaps more importantly, arthroscopy provides direct visualisation of abnormalities and, in many cases, enables diagnosis and treatment to be performed during the same procedure. Arthroscopy is performed under general anaesthesia, allowing the joint to be examined and treated in a controlled surgical environment.



Importantly, arthroscopy is not used purely for surgical treatment. It can be an extremely valuable diagnostic technique, particularly for conditions that cannot be adequately identified using other forms of diagnostic imaging.

The same principles and equipment can also be used to examine tendon sheaths and bursae. Examination of a tendon sheath is known as tenoscopy, while examination of a bursa is known as bursoscopy.

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Diagnostic imaging techniques such as radiography, ultrasonography and MRI provide valuable information about joint abnormalities, but there are circumstances where these investigations cannot provide a definitive diagnosis.

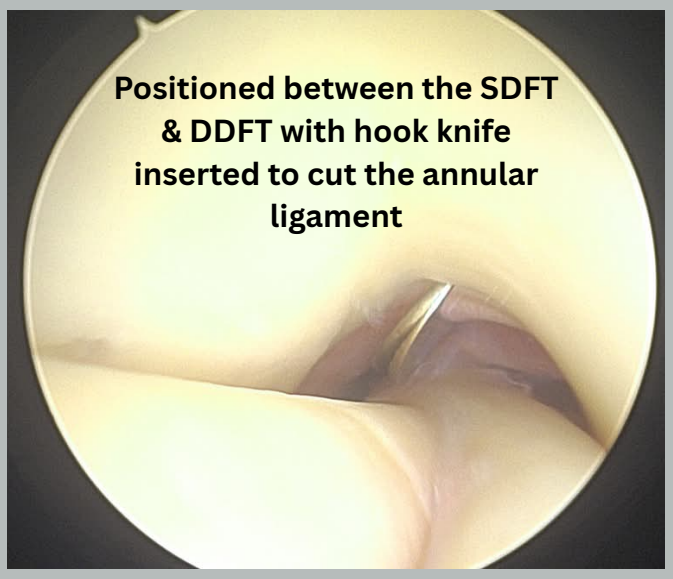
Diagnostic arthroscopy enables us to directly examine the structures within a joint. This can identify abnormalities that are difficult, or sometimes impossible, to demonstrate with diagnostic imaging alone. If a treatable abnormality is identified, it can often be adressed during the same procedure.

Common abnormalities identified during diagnostic arthroscopy include:

- Cartilage injuries
  - Damage to the articular cartilage can be extremely difficult to diagnose using other imaging techniques and is an important finding in some cases of joint-related lameness, particularly within the stifle. Arthroscopy allows the cartilage surface to be inspected directly, the extent of any damage assessed and treatment performed where appropriate.
- Soft tissue injuries
  - Injuries to ligaments, menisci and other soft tissue structures within a joint can be difficult to fully assess using diagnostic imaging. Arthroscopy provides direct visualisation of these structures and allows the extent and significance of an injury to be assessed.
- Tenoscopy
  - The digital flexor tendon sheath is the tendon sheath most commonly examined using tenoscopy. As the structures within the sheath are predominantly soft tissue, tenoscopy can provide an exceptionally detailed assessment of the superficial and deep digital flexor tendons, manica flexoria and associated structures.



Abnormal cartilage in a stifle



Positioned between the SDFT & DDFT with hook knife inserted to cut the annular ligament

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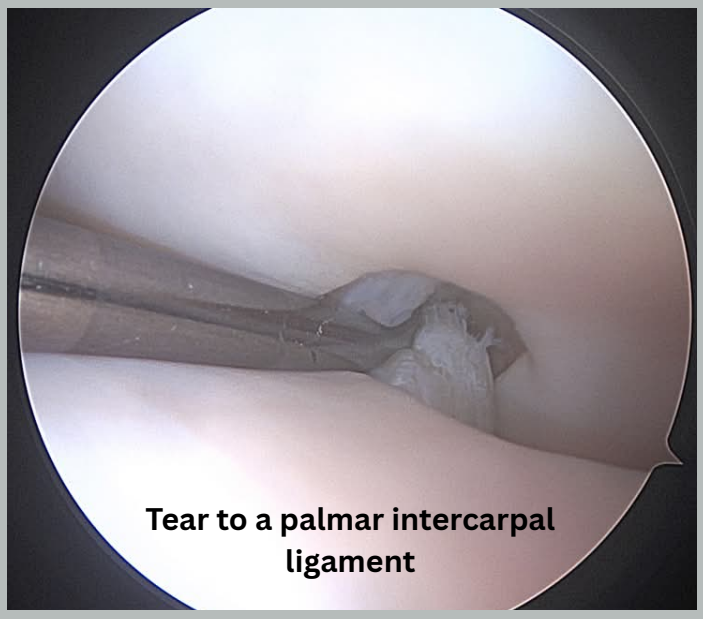
Arthroscopy is used to treat a wide variety of conditions, ranging from developmental abnormalities in young horses to traumatic injuries, soft tissue damage and joint infections.

Osteochondral fragments:

Osteochondrosis dissecans (OCD) is a developmental condition affecting the formation of cartilage and underlying bone within a joint. In some horses, this results in the formation of cartilage or bone fragments, often referred to as OCD fragments or 'chips'.


Fragment in a hind fetlock joint

Bone fragments can also develop following trauma, particularly in athletic horses.
Arthroscopy enables these fragments to be removed through small incisions. At the same time, the remainder of the joint can be thoroughly examined and any associated abnormalities treated where appropriate.


Tear to a palmar intercarpal ligament

Soft tissue injuries:

Some injuries to ligaments, menisci and other structures within joints are best assessed and treated arthroscopically. Examples include injuries to the medial meniscus within the stifle and the palmar intercarpal ligaments within the carpus (knee).

Treatment depends on the structure involved and the severity of the injury, but may include removal or debridement of damaged tissue.

Cartilage injuries:

Articular cartilage provides the smooth surface that allows the bones within a joint to move against one another with minimal friction. Damage to this cartilage can result in inflammation, pain and lameness and may contribute to the development of osteoarthritis.

Arthroscopy allows areas of damaged cartilage to be identified and assessed directly. Where appropriate, unstable or damaged tissue can be removed or debrided.

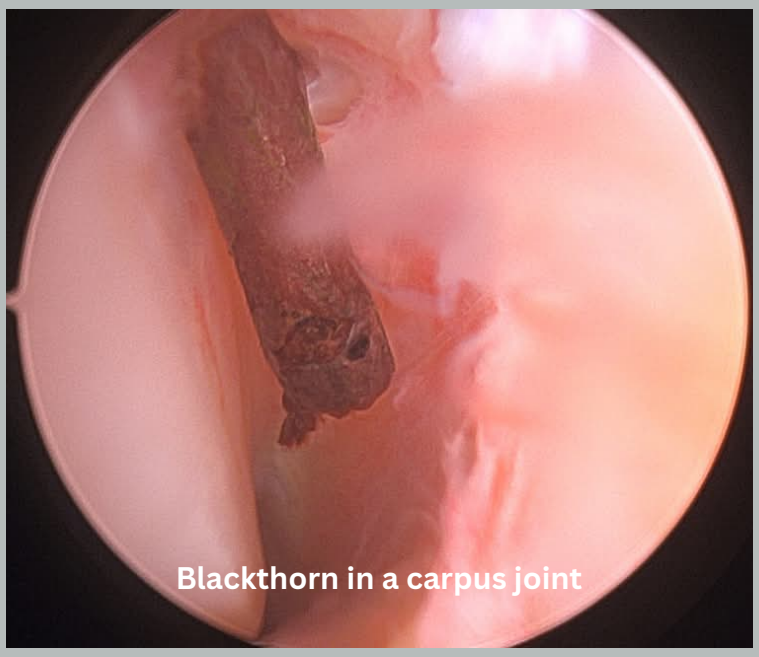
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Joint infections (septic arthritis):

Joint infections are serious conditions requiring prompt treatment. Infection and the resulting inflammation can rapidly damage the articular cartilage and other structures within the joint, potentially resulting in permanent lameness and, in severe cases, euthanasia.

Arthroscopy enables the joint to be thoroughly flushed (lavaged), while also allowing infected, damaged or devitalised tissue to be identified and removed.
In some cases, infection follows penetration of the joint by a foreign body, such as a blackthorn. Arthroscopy can allow the foreign material to be directly identified and removed.



Blackthorn in a carpus joint



Torn manica flexoria

Tenoscopy:

There are several tendon sheaths within the horse's limbs, including the digital flexor tendon sheath (DFTS), carpal sheath and various extensor tendon sheaths. The same equipment used for arthroscopy can be introduced into these structures to investigate and treat abnormalities.

Tenoscopy of the digital flexor tendon sheath is one of the most common procedures we perform. Treatment may include debridement of a tendon injury, removal of a torn or damaged manica flexoria, or cutting the palmar annular ligament.

Bursoscopy:

Bursae are small, fluid-filled structures that reduce friction where tendons and other tissues move over underlying structures. Examples include the navicular bursa within the foot and the calcaneal bursa at the point of the hock. Bursoscopy may be used to investigate lameness arising from these areas or to treat infection within a bursa.

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Recovery and Prognosis

Post-opeartively, the horses will have bandages on for 2 weeks and typically there will be some sutures that need to be removed 2 weeks after surgery. It is essential the bandages stay in place and keep the incisions covered for the entire time, as if any contamination got to the incisions, there is a risk of joint infection, which can be devastating.



All horses will have a period of box rest immediately after arthroscopic surgery, while the sutures are present and they are bandaged. The diagnosis from surgery then helps guide the rehabilitation plan and if further box rest is required.

Recovery following arthroscopy varies considerably depending on the underlying condition and the treatment performed. One of the benefits of arthroscopy is that establishing an accurate diagnosis allows us to formulate the most appropriate treatment and rehabilitation programme for the individual horse.

Following relatively straightforward procedures, such as removal of an uncomplicated osteochondral fragment, horses may return to exercise after a relatively short period of controlled rehabilitation.



More significant cartilage damage, soft tissue injuries and complex conditions may require a substantially longer and more controlled rehabilitation programme.

Some horses require intra-articular medication following surgery to complement the healing process, this will be advised at the time of surgery.

Although arthroscopy is minimally invasive, it is still a surgical procedure and complications can occur. These include infection, swelling, problems with incision healing and the risks associated with general anaesthesia. The specific risks, expected recovery and prognosis will be discussed with you based on your horse's individual condition.

For further information, or to discuss whether arthroscopy may be appropriate for your horse, please contact the Andrew Jones at the hospital 01722 710046

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