

by Dr Max Hall

Minimally INVASIVE SURGERY for horses

If your horse requires surgery of any description you should always check if a minimally invasive approach is available. This may require referral to an Equine Specialist Surgeon. Specialists are veterinarians who have had up to 10 years additional training to a regular veterinary degree and are available in most states in Australia.

Laparoscopy:

Recently, Hoofbeats covered the use of laparoscopy for the treatment of cryptorchidism (Rigs) however it has many other uses (see previous Hoofbeats article *A Novel Technique for Castration of Rigs April/May 2016*). Laparoscopy is when a camera is placed into the abdomen of the horse - which has been distended with carbon dioxide - to visualise the internal organs. The laparoscope is attached to a video camera, which displays the image on a monitor screen. The entire procedure is done under sedation and local anaesthesia. Only small, 1-2cm incisions are required in most circumstances. Laparoscopic procedures in horses are less invasive and are associated with less postoperative pain and inflammation.

One of the latest advancements with 'key hole' surgery in the equine field is the use of laparoscopy to treat barren or sub-fertile mares. Debris within, or blocked oviducts, (the pipe that allows the egg to travel from the ovary to the uterus) are responsible for many failed pregnancies. Problems with the oviducts are usually a diagnosis reached after all other possible causes of infertility have been excluded.

The application of PGE2 gel onto the surface of oviducts is the treatment of choice for oviduct blockages. This medication will help the oviducts clear debris or blockages. The procedure



is done with the horse standing in stocks, via laparoscopy. Many recent studies have shown that blocked oviducts are responsible for failed pregnancies of barren mares.

Success rates (pregnancies) can be up to 90% of horses following application onto PGE2 gels on oviducts. Many of the horses treated are in their late teens and may have been barren for several years.

Mares can be inseminated during the same cycle as the procedure and, due to the procedure being 'key hole', they recover within days. Mares that obtain a pregnancy following the procedure are excellent candidates for the same treatment the following year.

Laser Surgery:

Lasers have made their way into the veterinary field. From sarcoids to upper respiratory tract surgery - they have many uses. Many lasers are available, however the two most commonly used are Nd-yag or diode lasers.

The removal of vocal cords, ventricles and treatment of soft palate problems are all possible. With the aid of local anaesthetic and sedation the laser fibre can be passed up an endoscope portal, which has been placed into the upper respiratory tract via the horse's nasal passage. The area of concern is then grasped with the aid of long forceps and the laser can be aimed to cut the problematic tissue. The surgical field is visualised on a monitor next to the standing animal. Once again, doing this with the aid of minimally invasive techniques avoids complications associated with healing incisions and recovery from general anaesthesia.

Dental Procedures:

The extraction of upper cheek teeth can be a complicated ordeal at the best of times. Many horses require their teeth surgically removed and or repelled from the sinuses. This can be very traumatic and complications often occur. A new technique is now available that is a minimally invasive transorbital approach, which allows extraction of upper cheek teeth. This is ideal for teeth that cannot be removed easily with molar extractors via an oral approach (loose teeth).

A small incision (1cm) is made into the cheek and a hole is drilled into the tooth under endoscopic visualisation. An anchor is then screwed into the tooth which is then removed via repulsion. It is an extremely effective and low-risk technique. Owners should consider this if upper cheek teeth require removal.



Preparing the instruments for laparoscopic surgery.



STANDING arthroscopic surgery: Proximal pastern bone fragments, which are within the fetlock joints, are ideal candidates for surgical removal using sedation and local anaesthetic. This is a very safe option for the horse as it eliminates all complications associated with general anaesthesia combined with the advantages of keyhole surgery. This horse was back competing within three months of surgery.



Arthroscopic surgery: A camera was placed into the fetlock joint of this horse to treat a bone cyst. Due to the location of the lesion, general anaesthesia was required for the surgery. Only 2 x 1cm incisions were required for this procedure. This horse was boxed for 4 weeks following this procedure.

Tenoscopic Surgery:

The most commonly accessed tendon sheath is the digital flexor tendon sheath. This runs down the back of the fetlock to the pastern in all four limbs. It contains the flexors tendons, annular ligaments and other important soft tissue structures.

Externally these swellings appear as 'windgalls'; which are rarely a problem. However, in some instances (lameness, infection or severe swelling) they require surgical treatment. A camera is placed into the sheath after it has been distended with sterile fluid. Small incisions then allow a camera to be placed into the sheath via small 1cm portals. This 'key hole' surgery technique excellent visualisation of all the structures within the sheath and allows accurate treatment.

Horses recover quickly and usually only require a few weeks of box and yard rest prior to being placed back onto pasture.

Arthroscopic Surgery:

Arthroscopic surgery has been available for many years now. The joints that can be accessed via arthroscopy include: coffin, pastern, fetlock, carpal, elbow, shoulder, hock, stifle, hip, mandibular and even articular facets joints within the neck.

Arthroscopy is when a small camera is placed into a joint and 'key hole' surgery is performed to treat problem joints. Previously, a large incision into the joint would have been required, which led to long healing times and permanent lamenesses. Nowadays with the use of arthroscopic cameras the prognosis for many conditions is excellent. Conditions that are commonly treated with arthroscopy include the removal of bone fragments (e.g. OCD fragments) or treatment of damaged soft tissue structures within joints (cartilage, ligaments and inflamed synovium).

Arthroscopic surgery can now be performed standing in some circumstances. For example the removal of proximal pastern fragments in fetlock joints.

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West Coast Veterinary Hospital is currently one of the few hospitals in Australia utilising Arthroscopic surgery.

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