

Equine Laser Surgery

LASER is the acronym for **L**ight **A**mplification by **S**timulated **E**mission of **R**adiation.

A laser generates an intense beam of light that for surgical purposes can be used to cut, seal or vaporise tissue. There are three different types of laser used: CO2, diode and Nd:YAG.

The CO2 laser heats up water within the tissue and vaporises it. This laser has the advantages of sparing surrounding tissue from heat damage and precise cutting capability.

Both diode and Nd:YAG deliver the laser down a fibre allowing it to be passed down a video-endoscope and used for endoscopic guided surgery. The laser energy is more easily absorbed by tissue than CO2 laser, resulting in increased risk of heat damage to tissue. The diode laser is becoming increasingly popular in large animal practice as it is small, portable and efficient.



CO2 LASER SURGERY

Endoscopic Laser Surgery

As the diode and Nd:YAG lasers can be passed down a video-endoscope, their use over recent years in endoscopically guided surgery has grown. Its main use is during surgery of the upper respiratory tract, where a number of conditions are treated under standing sedation:

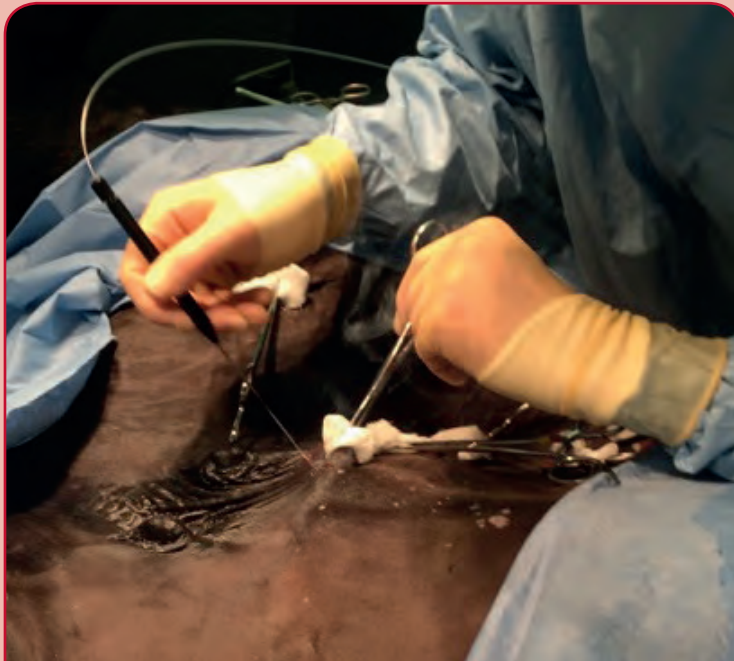
- to release epiglottic entrapment, a condition where part of the larynx gets caught under the soft palate ;
- to perform a Hobday procedure either on its own, or at the same time as a tieback procedure in order to treat recurrent laryngeal neuropathy (laryngeal paralysis/roaring);
- to treat horses who displace their soft palate during exercise;
- ethmoid haematoma – a mass that can grow in the nasal passages and sinuses;
- swellings or infections of the guttural pouches - two large chambers in the horse's throat;
- cysts or other masses in the upper airway.

Its use has also been demonstrated in neurectomy (denervating), breaking up bladder stones to ease their removal and during abdominal keyhole surgery (laparoscopy) to seal vessels and prevent haemorrhage.

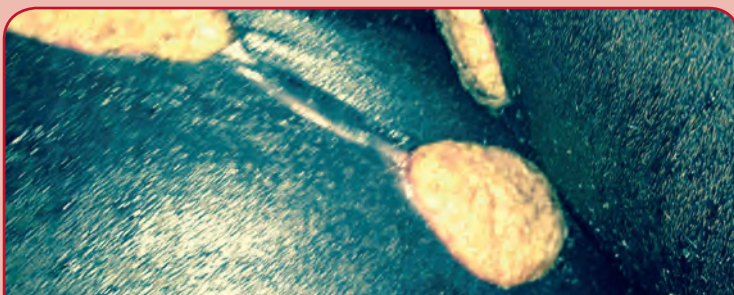
Benefits of Laser:

- minimizes the risk of spreading tumour cells during tumour removal;
- reduction in bleeding during surgery, as the laser will seal many small vessels while cutting;
- less pain, as the laser seals nerve endings as it cuts them;
- reduction in inflammation, swelling and postoperative infection at wound site (promotes fast and efficient wound healing);
- faster recovery, resulting from the combination of reduced bleeding, pain, inflammation and infection risk.





LASER SARCOID REMOVAL



7 DAYS POST OP



4 WEEKS POST OP

Skin tumours and wound management

By far the most common use of laser surgery in the horse is for the removal of skin tumours such as sarcoids and melanomas. This is especially useful for sarcoids, where standard sharp surgical removal has been associated with a high risk of tumour regrowth, due to seeding of tumour cells during cutting. The laser vaporises tissue and reduces the risk of seeding.

During surgery, the skin tumour is removed, leaving a wide skin border to minimise the risk of regrowth. Often with laser surgery wounds are not sutured closed; this is in part due to the large size of some tumours, where closing the skin would pull the wound edges too tight. Heat damage to the wound edges also means surgical closure doesn't always result in quicker healing time. Although these wounds can at first sight seem intimidating, due to their size and number following sarcoid removal, they usually heal rapidly with few complications.

Laser removal is associated with minimal pain, swelling and inflammation and reduction in postoperative infection. As such, we expect the majority of our patients to make a fast and uneventful recovery, enabling a swift return to work. For lesions on the face, the inside of the legs, belly and body, many patients only require a few weeks rest in a paddock before restarting work. For lesions in the axilla (armpit) or other high movement areas, patients will require more strict confinement to maximise the rate of healing. Where the wounds interfere with tack, return to work may be delayed until complete healing has taken place.

Recent studies have shown tumour remission rates post laser removal of greater than 90%.



XLEquine is a novel and exciting initiative conceived from within the veterinary profession made up of independently owned, progressive veterinary practices located throughout the United Kingdom, members of XLEquine are committed to working together for the benefit of all their clients.
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