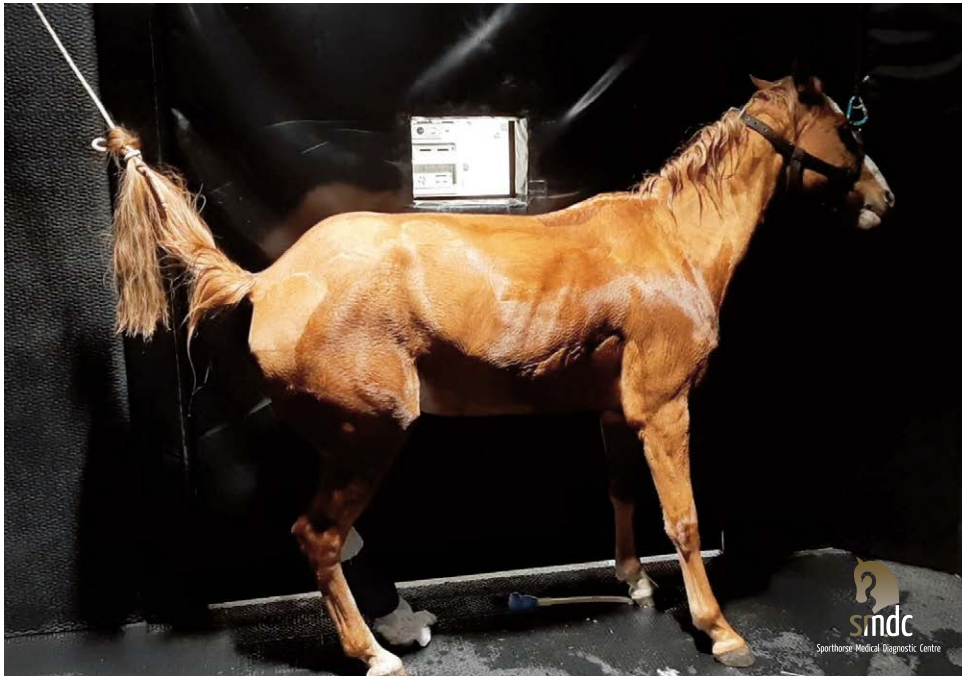


Standing surgical and diagnostic procedures



This horse that is waking up from general anesthesia is assisted with the head and tail rope system.

You might think that for every surgical procedure a horse has to undergo, it needs general anesthesia. This was for a long time the reality in most cases, but things have changed. During the last decades, more and more surgical (and also diagnostic) procedures can also be performed in the standing horse. In order to be able to safely do this, both for the horse and for the surgeon, proper sedation and local anesthesia are needed.

About the anesthesia

Sedation is a state of decreased consciousness, something that you might know from your own veterinarian, dentist or farrier. Local anesthesia is the technique of desensitising peripheral nerves (or joints) in order to allow painful procedures without the horse being aware of it. Because of their weight and flight instincts, horses have a higher risk of developing complications from general anesthesia, compared to for instance companion animals like dogs and cats or compared to humans. Therefore, owners can sometimes be afraid of having their horse to undergo a general anesthetic procedure. The fact that more and more

procedures can be performed in the standing horse means that the risks for complications is consequently decreasing. However, not all surgeries can be performed in the standing horse (like for instance colic surgery that can only be performed with the horse lying on its back). In order to decrease the anesthetic risk for horses that do need to undergo general anesthesia, ongoing research and technological advances into improved anesthetic protocols are continuously being performed.

A safer way to go

From clinical science, we know that the recovery phase of general anesthesia is one of the most essential and dangerous parts of the anesthetic procedure in horses. Therefore, a continuous search for improving the safety of recovery is also ongoing. An example of assisting the horse when it is waking up from anesthesia is to guide it with ropes that are attached to the halter and the tail. Scientific studies have shown that the quality of recovery improves when assisted techniques are used. Recent research shows that the risk that horses undergo when faced with an anesthetic procedure has steadily and significantly decreased over the last decades, mostly due to the aforementioned improvements in protocols, knowledge and technological advances. These new studies also show that performing surgical and diagnostic procedures in the standing sedated horse is even safer. The biggest advantage of performing these procedures in the standing horse, is that it doesn't need to



Laparoscopic castration in the standing sedated horse.



The horse is sedated and wears ear plugs and a mask, while the CT-scanner slides over the head and the first part of the neck to perform CT images of the affected structures.

recover and regain standing position. Furthermore, the negative influences on circulatory and respiratory systems are way smaller in standing sedated horses, compared to recumbent anaesthetised horses. This means that when your horse can be diagnosed or surgically treated while remaining standing, the risks of developing complications are much smaller.

More possibilities

As mentioned in the introduction, during the last decades, there have been big advancements in the possibilities for diagnostic and surgical procedures in the standing horse. In practice, this means that various surgical procedures that previously were only possible in the anaesthetised horse, are nowadays performed in standing horses. The approach of combining deep sedation with a local anesthetic, for instance during standing ophthalmic procedures, has become increasingly popular in everyday equine practice. For most standing ophthalmic procedures, such as enucleation (removal of an eye) or corneal surgeries, specific nerve blocks can be performed. With the combination of such a nerve block (leading to complete loss of pain sensation in the specific surgical location) and a proper amount of sedation, invasive surgical

procedures can be performed with the horse being awake, quietly standing due to the sedative drugs and not feeling anything. In the last years, various scientific publications have appeared on the use of ultrasound guidance for improving the safety and efficacy of the local anesthetic techniques. Ultrasound guidance means that the placement of the needles that are used to infiltrate the nerves to be desensitized is facilitated by means of an ultrasound machine. In this way, the placement of the needle close to the nerve is facilitated and the risk of placement in close blood vessels is minimised. Another example of commonly performed standing procedures is the extraction of diseased teeth in horses while comfortably standing in stocks and not feeling anything from the potentially painful procedure. Also, laparoscopic procedures can be performed in the standing horse, for instance to perform laparoscopic castration in stallions with an undescended intra-abdominal testicle. By using a minimally invasive technique that uses a small camera that can be brought into the abdomen to search for the non-descended testicle and ligate the spermatic cord (a so-called laparoscopic technique), the surgical procedure is minor and the horse does not need to be brought in general anesthesia. This

example is shown in the second photo on the previous page. Together with the possibility to perform surgery in the standing sedated horse, the possibility to perform high-quality modern diagnostic procedures like scintigraphy, CT- or MRI-imaging in the standing sedated horse is also growing. Previously we had to anaesthetise horses to perform for instance CT-imaging of the head, proximal neck or distal limbs, nowadays we are able to perform these scans in the standing horse. This means that instead of needing a general anesthesia including the recovery, we can now perform similar scans in less time with a reduced risk of developing complications. When the area of interest for CT-imaging is more focused on the distal neck, the stifle or for instance the pelvis, these modern scans can produce very quick high-definition scans that only require very short durations of general anesthesia. This is also a big improvement for the horses, as the risk of ending up with anesthesia-related complications is directly related to the duration of the anesthetic procedure. Minimising the duration of anesthesia therefore also improves the safety of the procedure. By using standing procedures where possible and keeping the anesthesia times as limited as possible when standing procedures are not feasible, we have been able to improve the safety of both surgical and diagnostic procedures in horses. The search for further improvements will continue! ■

THE VETERINARIAN



Dr. Thijs van Loon

ABOUT SMDC

Sporthorse Medical Diagnostic Centre (SMDC), based in the Netherlands, is a multidisciplinary centre of excellence where all orthopedic diagnostic and treatment modalities can be utilized in combination with experience, extensive knowledge and individual attention. Dr. Bergman, Dr. van Toor, Dr. Cokelaere, Dr. van Schie, Dr. van Loon, Dr. Hoogelander and Dr. van Veggel dedicate their time to optimize sporthorse performance while considering all factors which might influence it. Their caseload contains horses showing lameness but also includes horses with spine related problems, prepurchase examinations as well as preventative sporthorse care. www.sporhorsemdc.com