Proceedings of the 10th International Congress of World Equine Veterinary Association

Jan. 28 – Feb. 1, 2008 - Moscow, Russia

Next Congress:

WEVA 2009 Congress
Guanujá-SP, Brazil. September 24-27, 2009

Reprinted in IVIS with the permission of the Conference Organizers http://www.ivis.org/
THE 1 MAN ROPE ASSISTED RECOVERY FROM ANAESTHESIA IN HORSES

Hans Wilderjans, Diplomate ECVS
Dierenkliniek De Bosdreef, Spelonckvaart 46, 9180 Moerbeke-Waas, Belgium

In most equine hospitals, assisted recovery is only performed to recover horses after difficult orthopaedic procedures, or for horses with myositis or neurological problems. Fracture repair is not a common surgical procedure in most hospitals and for this reason assisted recovery is not a routine procedure for most equine surgeons and anaesthetists.

Two types of recovery are generally used: rope assisted recovery within the recovery room and warm water pool recovery.

Pool recovery is uncommon in the majority of European equine hospitals, due to the high cost of facilities, personnel and time. However, it can be invaluable and lifesaving in the recovery of proximal long bone fracture repairs in adult horses. A warm water pool with Jacuzzi jets can also be used for therapeutic treatment of post surgical or ideopathic myositis.

By contrast, rope assisted recovery can be used in almost any recovery room. Provided some basic safety guidelines are followed, rope assisted recovery using a tail rope and head rope is safe and atraumatic for both the horse and the handler. This talk will explain what equipment is needed and how to do it practically. It will also review basic safety guidelines.

Since 1998, we have used rope-assisted recovery on all horses recovering from general anaesthesia in Dierenkliniek De Bosdreef/De Morette. We have recovered more than 7000 horses and have a recovery complication rate of almost zero.

The system we use can be fitted in any recovery room, requires only one handler, is cheap to purchase and has minimal maintenance costs.

The major aim of assisted recovery is to prevent the fright and flight behaviour when the horse is regaining consciousness. This behaviour will stimulate the horse to stand up before regaining full body control. A combination of excitement and ataxia will lead to self-inflicted injuries (fractures, bruising, muscles sprains, wounds, luxations, implant failure).

Injuries during recovery are also related to the size and the temperament of the patient, the type and duration of surgery and the experience of the anaesthetist.

To prevent self-inflicted injuries there are a number of actions that should be taken before, during and just after the surgery to decrease excitement and ataxia during the recovery.

1° the anaesthetic protocol used will influence the recovery. Sedation during recovery is helpful, especially after isoflurane anaesthesia. Induction with agents such as guaiphenesin/thiopentone can lengthen the recovery especially after a relatively short procedure.

2° Good postoperative analgesia is important. Less pain means less stimulation to get up and results in a quieter horse during recovery. The use of perineural or intra-articular analgesia is also useful to reduce distal limb pain.

In cases of fractures or joint instability, a good immobilisation of the affected leg is mandatory.

It is also important to give the analgesia before the pain begins (pre-emptive effect) i.e. during the premedication.
3° **Empty the bladder before recovery.** The horse will be more comfortable and the recovery floor less wet and slippery. Catherise the bladder at the beginning of the procedure if possible.

4° **A quiet environment is important during recovery.** Dim the lights, reduce the noise and if necessary, plug the ears with cotton-wool to reduce stimulation.

5° **Good recovery surface.** Make sure that the horse lies comfortably in the recovery room on a non-slippery surface. Support the head to prevent fascial paralysis e.g. using an inflated car inner tube. This is important during assisted recovery because the horse is wearing a head collar. Use a head collar without metal rings to prevent fascial paralysis.

6° **Positioning.** The operated leg should be positioned uppermost if possible. When using assisted recovery the legs should be facing the wall to which you are recovering the horse. The horse should be positioned close to the back wall of the recovery room. This allows for a bit of space to move forward when the horse is standing up. During recovery they always move forward.

7° **Respiratory support.** Make sure you always have an open airway during the recovery. Recover the horse with an endo- or naso-tracheal tube. Nasal obstruction will lead to excitement. A second important respiratory support is oxygen. Hypoxaemia is likely to develop during recovery, as the horse ceases to receive high oxygen levels. Continue to deliver high flow rates of oxygen (15-20 L/min) while the horse is in lateral recumbency.

8° **Sedation.** This is almost always carried out prior to assisted recovery. However sedation should not prolong the recovery. We prefer to use xylazine in IV bolus. Detomidine and romifidine are longer acting and so prolong the recovery. Following painful orthopaedic procedures, the combination of alpha-2 agonists with opioids is useful e.g. xylazine with butorphanol or buprenorphine.

9° **Manually assist the recovery using a head and tail rope.**

To be able to perform a save and controlled head and tail rope assisted recovery, the following items should be present:

- Metal rings bolted through the wall positioned at ± 2 m 20 high (above horse’s head).
- Locking carabiners.
- Mountaineering rope (10-11 mm diameter).
- Self-braking belay descender device (grigri).
- Strong nylon recovery head collar without metal rings.

During this talk the use of these items will be demonstrated. The success and ease of assisted recovery lies in the use of a self braking descender devise by which 1 person can control the tail rope of any size horse pulling back on the tail rope.

Depending on the size of the recovery room, an indoor (handler standing in recovery room) or outdoor (handler standing outside the recovery room) assisted recovery can be performed. In developing our assisted recovery system, the aim was to create a system which is safe for both horse and handler and which can be performed by only one handler.

**What is the aim of AR?**

1. You want the horse laying down in lateral or sternal recumbency as long as possible (control excitement).
2. You want the horse to get up only when it is fully capable of standing.
3. Ideally the first attempt to get up should be the only and successful attempt.
4. By pulling the tail rope you assisted the horse in lifting up its hind quarters.
5. Once up and standing, both head- and tail rope should stabilise and support the horse against a wall of the recovery room until the horse can stand stable unaided and has regained his muscle strength (control ataxia).

Like all techniques in life it requires time and practice before one is comfortable with the technique. For this reason it is very important that you only "try" this system on your occasional long bone fracture, with previous practise. When recovering a long bone fracture repair, it should be a routine job for all the people involved. Therefore, they should already know what to expect and what to do.

During the talk the practical tips of manually assisted recovery will be discussed.

Head and tail rope are guided through metal rings bolted through the wall of the recovery room. Use nylon mountaineering rope of 10-11 mm, a nylon head collar without metal rings and a belay devices to guide and control the head and tail rope. An emergency quick release locking device is needed on the tail rope. We use a Petzl Grigri, the use of which will be demonstrated.

Over the last 7 years we have recovered 58 fractures repairs. Four of those had to be put down after recovery (3 implant failures, 1 cannon fracture within the cast after repair of a medial condylar fracture).

In more than 7000 non-fracture patients recovered in this way, none have had to be treated/euthanased for injuries sustained during the recovery period e.g. fractures, luxations, muscle sprains or serious wounds.

This type of assisted recovery system is a very valuable and safe way of controlling recovery from general anaesthesia. In the recovery from horses with proximal long bone fracture repairs (radius, tibia) warm water pool recover is still ideal. However, this type of recovery will certainly reduce the recovery risk to a great extend when compared to "non aided" recovery.

Indoor assisted recovery using head and teal rope. The use of a self-braking descender devise on the tail rope prevents the horse of injuring the handler and enables 1 person to control any size horse pulling back on the tail rope.