

Colic surgery in horses – nurse's role in postoperative care

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ABSTRACT

Colic surgery in the horse is a major procedure, and the immediate and subsequent postoperative care provided by the hospital team is vital to ensure the horse's full recovery. The work is intensive by nature and the patient needs around-the-clock monitoring and care.

A nurse's role is essential as he or she is usually the primary care giver. It's important a nurse observes and notes subtle changes in the patient's demeanour, performs regular clinical exams and understands his or her nursing care has a pivotal role in the postoperative colic patient's successful recovery.

Keywords: colic, postoperative, nursing care, horse, monitoring

Panel 1. Clinical signs of colic

Mild

- Restlessness
- Flank watching
- Repeated curling of upper lip
- Pawing
- Stretching
- Tachycardia
- Quieter demeanour

Moderate

- Depressed demeanour
- Posturing to urinate
- Kicking at abdomen

Severe

- Sweating
- Rolling (violently)
- Tachypnoea

Colic is one of the most common emergencies in equine practice and it was estimated 7 to 9% of horses diagnosed with it would require surgical correction (Proudman, 1992).

Many factors will affect the successful surgical treatment of colic, including:

- early recognition for the need to refer for surgery
- the type of lesion present
- the skill of the surgeon and anaesthesia team
- the postoperative management and care of the patient

Panel 1 is a crude outline of the clinical signs, which are all interchangeable between mild to severe, depending on how stoic the patient is.

The main aims of immediate postoperative care of the colic patient are to re-establish normal function of the gastrointestinal tract and try to reduce the risk of reoccurrence of colic in the future.

Postoperative colic patients require intensive nursing care, which can include two-hourly checks, including physical exams and monitoring fluids (**Panel 2**).

Postoperative monitoring

One of the main duties of nurses in the postoperative period is to closely monitor the patient, and this involves observing it. Therefore, it is essential VNs are aware of subtle signs of pain and clinical signs of colic (**Panel 1**).

It's important to be aware of subtle changes in a patient's demeanour and attitude. Depending on

the patient's condition, colic checks and a physical exam are usually scheduled every 2 hours in the first 24-hour period after surgery. This may be extended to every 4 hours, depending on the horse's clinical progress.

Each check should be recorded and documented so changes in parameters can be easily identified. Any changes in attitude or physical parameters should be communicated with the veterinary surgeon in charge so he or she can decide whether changes to the treatment or management of the patient or further diagnostics need to be initiated.

IV catheter

Panel 2. Physical exam and colic check

Physical exam

- Heart rate
- Respiratory rate and effort
- Perfusion – mucous membranes (MM)/capillary refill time/jugular refill time
- Gastrointestinal motility
- Temperature (core and extremities – for example, lower limbs/hooves)
- Digital pulses
- Hydration status – MM(tacky/moist)/ skin turgor
- PCV and total protein – every 6/12/24 hours

Colic check

- General demeanour
- Pain assessment
- Faecal output
- Urination
- IV catheter site
- +/- gastric reflux
- Water/food intake (if applicable)
- Incision site
- Fluid input/output

Choice of catheter and care of the IV catheter (IVC) is important in postoperative colic. The type of colic diagnosed at admission, and how compromised a patient is, can determine if a long or short-stay catheter is placed.

It is beneficial to place a long-term polyurethane IVC in all colic patients as most will require analgesia, antimicrobials and IV fluid therapy.

Depending on the horse and how compromised it is on presentation will decide whether an over-the-needle IVC (for example, a Mila 14G, which can remain indwelling for up to five to seven days) or an over-the-wire IVC (for example, Arrow 14/16G, which has no specific time period) is placed.

A polyurethane IVC, while slightly more expensive, is less thrombogenic and can stay in for longer.

IVCs should be flushed with heparinised saline every four or six hours to check for and maintain patency. The IVC should also be monitored for signs of heat, swelling, pain and thrombophlebitis.

If any abnormalities are found, it should be removed immediately and replaced if necessary. If infection is suspected, the tip of the catheter can be tested for bacterial culture and sensitivity. All findings should be recorded.

If the horse is actively colicing and rolling, it may be beneficial to bandage the IVC site. This can help restrict movement or dislodgment and protect the IVC from contamination due to rolling in bedding and faeces.

IV fluid therapy

Many postoperative colics have compromised hydration status and water is withheld post-surgery or until normal gut motility returns, so most patients will receive IV fluid therapy (IVFT). Isotonic crystalloids are normally administered (Hartmann's solution/Vetivex 11 in 5L bags).

Daily maintenance in an adult horse is 2ml/kg/hour to 3ml/kg/hour or 50ml/kg/day to 60ml/kg/day, working out at about 1L/hour for a 500kg horse.

Electrolytes may be added to the fluids – for example, potassium chloride, calcium borogluconate or glucose. The need for supplementation of IVFT is dependent on daily blood electrolyte measurements.

Fluid input and output is monitored and recorded to ensure the patient is adequately hydrated. This is particularly important when a patient is actively refluxing. Depending on the amount of gastric reflux being produced, the IVFT plan may have to be adjusted.

PCV and total protein



A horse with IV catheter site thrombophlebitis.

PCV and total protein should be checked every 6 to 24 hours. How often this is required depends on patient stability, severity of disease and the duration of time since surgery.

It may be used as a rough guide for adjusting the rate of fluid administration, as well as the need for change in fluid type – for example, colloids/plasma in a horse that has developed hypoproteinaemia.

To avoid using the jugular vein to obtain a sample each time, the facial sinus may be used as only a small amount of blood is required. The facial venous sinus is found several inches below the eye where the transverse facial vein dilates.

If you draw an imaginary triangle from the medial and lateral canthus of the eye down to the facial crest, insert the needle about 1cm ventral to the facial crest.

A 23G/21G 1in needle with a 1ml or 2ml syringe can be used, dependent on how much blood is required.

Checking for gastric reflux



Checking for gastric reflux.

Placement of a nasogastric tube after surgery depends on whether small intestinal ileus was seen at surgery or is suspected in the postoperative period.

If a patient is producing gastric reflux, it may need to be refluxed at regular intervals; usually every two to four hours, depending on the amount obtained and patient comfort.

Heart rate should be taken before and after refluxing as a distended stomach may be a source of pain. The amount and appearance of reflux obtained is noted each time and will have repercussions on the IVFT.

Incisional care

Depending on the clinician preference, an abdominal support bandage can be used for 5 to 14 days postoperatively. A couple of different types of support bandage are on the market and they have two functions – to keep an incision clean and dry (especially if a patient lies down) and reduce peri-incisional oedema (Southwood and Wilkins, 2015).

The incision and bandage must be checked twice daily for discharge, oedema and incision

dehiscence. Gloves should also be worn when checking the incision.

The site can be palpated gently and evidence of pain on palpation may be an indication of infection. In stallions and geldings, it is important to check the bandage hasn't slipped caudally as it can easily be contaminated with urine.

Medication

Antimicrobials







From top: Hernia, abdominal and belly bandages.

As colic surgery enters the abdomen, it is classed as a “clean contaminated”/“dirty” surgery

(Tucker, 2010). Therefore, antimicrobial therapy is usually started pre-operatively and continues for three to five days depending on the type of colic surgery – for example, if it was a displacement or an enterotomy was performed.

Broad-spectrum antimicrobials are used, with the protocol in the author's hospital being procaine benzylpenicillin IM twice daily (20mg/kg) and gentamicin IV once daily (6.6mg/kg).

Analgesia

Most postoperative colic patients will receive analgesia in the immediate postoperative period. Flunixin meglumine (1.1mg/kg), an NSAID, is the most commonly used and known to reduce the effects of endotoxaemia.

Lidocaine constant rate infusions (CRIs) are frequently used in the uncomfortable postoperative colic patient. It provides analgesia, has anti-inflammatory properties and is thought to have prokinetic properties to help gut motility.

Nurses must monitor the CRI rate closely, as incorrect running, stoppage or slow administration means the drug is not reaching its therapeutic level and overdosing can cause stupor or collapse.

Postoperative feeding

Reintroduction of food should be customised to each patient, depending on the type of colic diagnosed at surgery.

As a rule, horses with a simple displacement or obstruction of the large colon can tolerate food reintroduction quite quickly, while those recovering from caecal and small colon impactions, small intestinal strangulation or that have undergone an enterotomy require a slower reintroduction.

The patient can be offered small amounts of water, followed by wet, sloppy, high-fibre mashes or handfuls of grass or soaked hay every four hours.

The amount to be fed may be gradually increased over time if the patient tolerates it and does not relapse.

During the refeeding period, the patient needs to be monitored for:

- inappetence
- colic
- tachycardia
- faecal output
- borborygmi

General nursing

Other general VN duties that can improve a patient's demeanour are daily grooming, walking out, having a clean, deep-bedded box and, if the patient has been starved for prolonged periods, rinsing its mouth out occasionally (Coulme, 2001).

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