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Medical Nursing
Chaired by Bonny Millar

11.10–11.40
Nursing the post operative colic
Kelly Russell
Bell Equine Veterinary Clinic, 104 Butchers Lane, Mereworth, Maidstone, Kent ME18 5GS, UK.

Care of the post operative colic patient involves managing pain and ensuring that the patient is comfortable. It is very important to be able to recognise early clinical signs of abdominal and systemic post operative complications to enable prompt effective treatment.

The aim of post operative care is to:
• To control pain
• Support the cardiovascular status
• To identify and manage post operative complications.

Abdominal post operative complications may include:
• Pain
• Ileus

Systemic post operative complications may include:
• Peritonitis
• Anastomosis and enteromy failure
• Anterior enteritis
• Wound breakdown
• Diarrhoea

NOTES

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Nursing the sick foal

Gabriele Landolt

College of Veterinary Medicine and Biomedical Sciences, Colorado State University, Fort Collins, Colorado, USA.

Supportive and nursing care remains one of the most important and labour intensive parts of the treatment of the sick foal. Depending on the underlying disease process and clinical signs, supportive care of the equine neonate may include cardiovascular and respiratory support, antimicrobial therapy, seizure and pain control, as well as nutritional support. Hypothermic foals should be warmed using heat lamps, heating blankets, warm water bottles or heat packs. Heat packs can easily be made by soaking towels in water, placing them inside rectal sleeves, and microwaving them for 2–3 minutes (Vaala 2000). If fluid therapy is indicated, the use of a long-term polyurethane catheter is preferred. The goals of fluid therapy in sick neonates are to restore and maintain tissue perfusion and blood glucose levels. As fluid overload and subsequent development of pulmonary oedema is more likely to occur in foals than adult horses, neonates should be monitored carefully during fluid administration. Also, renal function should be monitored closely during fluid therapy. For rapid rehydration, nondextrate, balanced electrolyte solutions should be used. If dextrose containing fluids are used, the foal’s blood glucose concentration should be monitored frequently. Commonly found recommendations for glucose administration include using a 5–10% dextrose solution at a maintenance rate of 2–4 ml/kg bwt/h (Vaala 2000). If failure of passive transfer is present, administration of colostrum, equine plasma or plasma products should be initiated. For respiratory support, oxygen (3–6 l/min) can be administered using an intranasal cannula. The cannula should be inserted in the ventral meatus and advanced to the level of the medial canthus of the eye and sutured in place. If the foal is unable to stand, it preferably should be kept in sternal recumbency and turned every 2 h to avoid dependent lung atelectasis.

As critically ill equine neonates are highly susceptible to infectious agents, antimicrobial therapy is almost always initiated prophylactically even if there is no evidence of an existing infection. Commonly, a combination of a penicillin and aminoglycoside antibiotic is chosen in order to achieve the desired bactericidal, broad spectrum antimicrobial coverage. The treatment of seizures varies depending on their severity. For example, mild, brief seizures may not need to be controlled. However, as recurrent or severe seizure activity increases the risk of self-inflicted trauma, increases the foal’s energy needs, and hinders adequate nursing care, treatment may become necessary. Dizepam (0.1–0.2 mg/kg bwt) is commonly used for immediate control of seizures (Vaala 2000; Wilkins 2003). Control of severe or recurrent seizures often requires administration of barbiturates (for example phenobarbital at 2–10 mg/kg bwt i.v. q. 12 h administered slowly over 15–20 min) (Wilkins 2003). Body temperature, blood pressure and respiratory rate should be monitored in foals receiving barbiturates (Wilkins 2003). Pain control can be achieved by use of flunixin meglumine (1.0 mg/kg bwt i.v.), dipyrone (10–22 mg/kg bwt i.v.) or butorphanol (0.01–0.04 mg/kg bwt i.v. or 0.02–0.08 mg/kg bwt i.m.) (Vaala 2000).

Nutritional support is of utmost importance in sick neonates. The nutritional demand of ill foals is significantly higher than the energy and protein demand of a healthy neonate of equal age and development (McKenzie and Geor 2007). For example, a healthy Thoroughbred foal requires approximately 130–150 kcal/kg bwt/day, while a sick, convalescent or premature foal may need somewhere between 180 and 400 kcal/kg bwt/day (Ousey et al. 1996). Insufficient nutritional support does not only result in poor growth but also negatively affect immune processes. Furthermore, a malnourished foal is more likely to develop decubital sores and demonstrates poor wound healing. Nutritional support can be provided with either milk or parenteral nutrition.

Due to the risk of aspiration, foals that are laterally recumbent or comatose should not be fed orally. In addition, ileus is a common occurrence in hypothermic and hypotensive foals and enteral feeding in these foals can result in gastric distension, colic and diarrhoea, and may also contribute to the development of necrotising enterocolitis (McKenzie and Geor 2007). If the intestines are functional, the foal should be fed enterally at a 1–2 h interval. It is important to recognise that some foals may not tolerate the larger volumes associated with feedings at this frequency. In such cases, they may be fed by continuous administration of small volumes of milk by use of a feeding pump. If a foal can stand but not suckle, an indwelling nasogastric tube can be used. If the foal’s gastrointestinal tract does not tolerate normal enteral feeding amounts, total (TPN) or partial parental nutrition (PPN) may have to be added to the treatment. However, whenever possible, small volumes of enteral feeding should be continued because it supports normal intestinal function and reduces the risk of gastric ulceration.

Lastly, careful monitoring is as important as therapy in the care of the sick foal. While a routine management protocol should be established, protocols should be reassessed frequently and adjusted accordingly because of the dynamic nature of the intensive status of the foal. Frequency, type, and intensity of the monitoring depend on the foal’s condition and parameters to be monitored may include vital signs such as heart rate, respiratory rate, temperature, blood pressure, urine and faecal output, as well as blood glucose and IgG levels, packed cell volume, total protein, creatinine, electrolytes, acid base status and PaO2 (especially if the foal is on supplemental oxygen). Also, type and rate of intravenous fluids as well as daily volume administered, type and frequency of feeding, and bodyweight should be monitored and recorded.

References
The challenges of nursing the recumbent horse

Jo Gregory
Bell Equine Veterinary Clinic, Mereworth, Near Maidstone, Kent ME18 5GS, UK.

Nursing the recumbent horse can be a very difficult and challenging process. Nursing will be aimed at providing the best environment and supportive care to encourage the horse to stand again as soon as possible and, at the same time, trying to avoid complications. The intensive nursing care will primarily include protection of the horse and maintaining nutrition and hydration.

Causes
Recumbency can be caused by a number of things including neurological disorders and musculoskeletal traumas.

Decubital ulcers
Choosing the correct bedding for the recumbent patient will prevent these. Bedding should be thick, soft and absorbent.

Turning
Adult horses should be turned every 2–6 h to avoid or decrease the onset of decubital ulcers. It will also help ventilation and perfusion of the lungs, thereby decreasing the risk of pneumonia.

Hydration
Recumbent horses should be kept hydrated by offering them water by mouth or using fluid therapy either intravenously or by nasogastric intubation.

Urination
With or without the use of intravenous fluid therapy, the horse will need to urinate. The horse may be able to do this unaided, therefore to prevent urine retention, urinary catheterisation may be required.

Nutrition
Recumbent horses may still have a good appetite and can eat without aid. Others will need to be provided with adequate nutrition. This can be achieved by the use of nasogastric tubes and liquid diets. Parental diets may also be used.

Defaecation
Faecal retention and impactions may occur in recumbent horses. Liquid diets or laxatives can be used to aid faecal output.

Respiration
Pneumonia can be a common problem with recumbent horses, especially in dysphagic patients. Antimicrobial drugs can used to prevent this.

Ophthalmic disease
The eyes of the recumbent patient should be examined regularly. They should be checked for corneal ulceration and this in turn should help prevent ocular trauma.

Physiotherapy
Physiotherapy is very important for recumbent horses to keep limbs supple and to aid good circulation. Slings can be used but is only recommended in some cases.

Slings
Slings can be used in certain cases. A liftex or an Anderson sling could be used.

Further reading

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Further reading
Nursing complications after diagnostic procedures: Nerve blocks

Lucy Middlecote
Hartpury College, Hartpury House, Gloucester, Gloucestershire GL19 3BE, UK.

The presentation will begin with some examples of equine patients/cases that are most likely to require nerve blocks. It will focus on some of the most commonly used nerve blocks in equine practice to facilitate discussion of relevant nursing complications that may arise as a result of treatment.

There will be mention of various nursing complications following nerve blocks including the importance of identification of abnormalities and clinical signs of infection.

The presentation will predominantly cover the importance of management and handling of patients that often become stressed, difficult or even aggressive as a result of the procedures being carried out.

There will be reference to the results of a questionnaire completed by nurses from a variety of equine veterinary practices, which has given insight into providing information on various practice protocols, and given examples and opinions on complications that can arise in practice.
Before discussing the subject of care and complications with a catheter it is important to think about placement of a catheter in the first instance. Considerations should include reasons for placing a catheter, the use it will receive, such as for drug administration or fluid therapy, how long it is expected the catheter will be in use for, and the position of the catheter on the horse.

Once it is decided that i.v. access is required for several incidences that require repeated episodes of venipuncture then a catheter may be required to be placed.

Aseptic placement is paramount to minimise the risk of complications later. Have everything ready and within reach before you start the procedure to prevent contamination of the site, whether to wear gloves as oppose to washing of hands only is a matter of debate, adopt a protocol that is without interruption to minimise excessive handling of the site and catheter. Clip and scrub as you would for a surgical incision. A small cut down is generally recommended for long stay polyurethane catheters to reduce tissue drag and kinking.

Teflon catheters being inherently rigid should not be left in situ for more than 24 h as the risk of thrombogenicity is increased with the intimacy of the catheter and internal vessel wall. Taking this into consideration it must be remembered that all catheters have a thrombogenic potential in the fact that they can cause turbulence and will come into contact with the vein so causing damage and possible clotting. Multi-port catheters may be suitable for horses that may require fluid therapy as well as drug administration, reducing the necessity of removing and re-attaching drip lines and therefore decreasing the risk of infection. Over-the-wire catheters may be a better choice for placement in foals as long-term use is normally required.

Securing the catheter in place prevents movement at its insertion so causing minimal skin trauma that can leave scarring and delayed healing once the catheter is removed. One way extension sets should be employed with long stay catheters to prevent the administration of air, the extension should be checked regularly for failure of the valve to prevent the same, and changed every few days. Multiple injections through the bung should also be avoided and any signs of wear should warrant replacement. Flushing the catheter with heparinised saline each time a drug is administered is a must; if the catheter is not to be used for 8 h then the heparin bung should be flushed through during this time.

In conclusion, be well prepared when placing the catheter, develop a protocol, stick to it and minimise the risks. Be vigilant once the catheter is in place and take action if you suspect that there is a problem occurring.