
MANAGEMENT OF SAND COLIC IN A MULE - A CASE REPORT

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ABSTRACT

A twelve year old mule was presented with complaint of abdominal pain. Rectal examination revealed semi solid faeces and wavy sound was obtained on auscultation of lower quadrants of abdomen. The case was diagnosed as sand colic due to presence of sand particles in the faecal matter. The mule was treated with analgesics, psyllium husk, liquid paraffin and fluids. The mule recovered after one week.

Keywords: Dehydration, Fluid therapy, Liquid paraffin, Mule, Psyllium, Sand colic.

INTRODUCTION

Colic is a general term that implies abdominal pain and broadly used for a variety of conditions that causes equines to exhibit abdominal pain as clinical sign (Aiello *et al.*, 2016). Colic is not a common health

problem in equids when compared to other health-related conditions. But its potential for mortality make management of colic very important. Colic occurs mainly from conditions affecting the gastrointestinal tract, but occasionally could happen due to conditions involving other organs within the abdominal cavity (Gitari *et al.*, 2017). Colic caused from the accumulation of sand and small pieces of gravel in the large colon is a major problem for horses. In adult equines, sand consumption has been attributed to boredom or salt deficiency (Raofi *et al.*, 1996).

CASE HISTORY AND OBSERVATION

A twelve year old, 380 kg female mule was presented to the hospital with complaint of irregular bouts of pain. The mule was in good body condition with a body condition score of five. On clinical examination, the mule was showing a body temperature of 100.2°F, heart rate of 56



Fig. 1. General appearance of patient



Fig. 2. Presence of sand in the faecal matter

beats per minute, respiration rate of 30 breaths per minute and a capillary refill time of three seconds. The mule was having a total pain score of two, owing to tension above the eye area, strained

nostrils and flattening of the profile in facial conditioning as per horse grimace scale (Dalla Costa *et al.*, 2014). The mule was trying to sit down frequently and was shifting weight on its hind legs (Fig. 1).

The mucous membrane was pale and dry and the mule was 5-7% dehydrated as evident from skin tent test. Rectal examination revealed semisolid faecal balls. The representative sample of six faecal balls were checked for the presence of sand particles and was found to be containing sand particles and small gravel pieces (Fig. 2). Abdominal auscultation revealed wavy sounds in lower quadrants. The blood and serum biochemical values obtained are in Table 1.

TREATMENT AND DISCUSSION

The mule was treated with intravenous fluids (Inj. Ringers lactate @ 10 litre BID for 7 days), antibiotics (Inj. Oxytetracycline @ 10 mg/kg body weight IV BID for 5 days, Inj. Metronidazole @ 20 mg/kg body weight IV TID for 5 days), Inj. Sodium bicarbonate (7.5%) @ 50 ml IV OD for 3 days and Inj. Rantidine @ 0.5mg/kg body weight IV for 3 days. Luke warm water enema was given QID for 2 days. Psyllium husk was given orally through a nasogastric tube once daily (morning) @ 1g/kg body weight for 5 days followed by magnesium sulphate (0.5–1.0 g/kg body

Table 1. Haematological and serological parameters

PARAMETER	VALUE
Haemoglobin (Hb)	17.5g/dl
Total leukocyte count (TLC)	13 thousands/mm ³
Neutrophils	62 %
Lymphocytes	36 %
Eosinophils	01 %
Monocytes	01 %
RBC Count	11.2 millions/mm ³
Platelet count	2.40000/mm ³
Packed cell volume (PCV)	52 %
Alkaline Phosphate	184 U/L
Blood Glucose	8.2 mmol/L

weight daily). Liquid paraffin was given orally once daily (evening) @ 2 litre per day for 5 days. Examination of faeces on a daily basis revealed an appreciable reduction in sand particles post treatment. The colic symptoms were controlled by using Inj. flunixin meglumine @ 1.1 mg/kg body weight IV as on required basis. The mule started drinking water from the third day of admission and the colic symptoms reduced. The mule was provided with bran mixed with salt, jaggery and chopped grass as feed from 3rd day of admission. The mule was discharged and owner was advised to follow corrective management practices. Grazing to be allowed only on good quality pasture with no sand, limiting access to sandy areas, to include psyllium husk in feed once in a week and to thoroughly

check the feed material prior to preparation of feed.

Equines consume sand when hay is fed on the ground, when they graze grass covered by silt after flooding, or on roots mixed with soil of plants uprooted in short or overly grazed pastures, and when they drink from shallow muddy pools at times of fresh water unavailability. Some horses also have a habit of deliberately eating sand (Raofi *et al.*, 1996). The sand accumulates after reaching the cecum and large colon, subsequently due to gravity sand settle to the ventral portions of the large intestine. If the horse only ingests small amounts, most will be passed through the large intestine without any side effects. If consumed in large amounts, the sand accumulates in the large intestine and horses exhibit

symptoms. Due to the sand accumulation and irritation to the mucosal lining, water is not absorbed well, resulting in watery manure (Ragle *et al.*, 1989). PCV and Hb values were significantly increased in animals in colic and total white blood cells and glucose also showed higher values among horses in colic (Ismail and Suliman, 2014). The appearance of sand in the faeces and monitoring its quantity in faeces during treatment acts as a guideline for diagnosis and clearance (Ruohoniemi *et al.*, 2001). Faecal evaluation revealing sand, rectal palpation, abdominal auscultation, X-ray and ultrasonography are routinely used for diagnosis of sand colic (Walesby *et al.*, 2004).

Fluid therapy is recommended for equines in colic to combat hypovolemia and endotoxemia (Auckburally *et al.*, 2019). Even though many of the analgesics cause transient decrease in motility, pain management is an important part of managing colic, as pain itself can inhibit motility (Mama and Hector, 2019). Psyllium is believed to induce peristalsis and shorten the intestine passage time (Hotwagner and Iben, 2008). Psyllium is believed to have a better ability to penetrate, hydrate, and break up sand impactions than other laxatives (Edens and Cargile, 1997). Sullins (1990) recommended the use of repeated doses of Magnesium for 3 days due to its osmotic effect, and ability to

stimulate the gastrocolic response. Mineral oil could resolve firm sand impactions at a dose of 4 litres followed by 2–4 litres of water (Ruohoniemi *et al.*, 2001). Medical therapy continues to be an effective and appropriate treatment for most cases of colic, however, any equine that remains in pain despite appropriate medical therapy should be referred for possible surgical intervention.

SUMMARY

Sand colic occurs when equines ingest sand while feeding. The appearance of sand in the faeces is assessed for the diagnosis of the condition. The successful medical management of the condition in a mule is discussed.

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REFERENCES

- Aiello, S.E., Moses, M.A. and Allen, D.G. 2016. The Merck veterinary manual. USA. pp. 248-252.
- Auckburally, A., Petruccione, I. and Voss, S. 2019. Providing fluid therapy to equine colic patients. Part 2. *In Practice*, **41**(10): 500-512.
- Dalla Costa, E., Minero, M., Lebelt, D.,

- Stucke, D., Canali, E. and Leach, M.C. 2014. Development of the Horse Grimace Scale (HGS) as a pain assessment tool in horses undergoing routine castration. *PLoS one*, **9**(3). e92281.
- Edens, L.M. and Cargile, J.L. 1997. Medical management of colic. In: Robinson N.E. (ed), *Current Therapy in Equine Medicine*, W.B. Saunders Co., Philadelphia, pp. 182-191.
- Gitari, A., Nguhiu, J., Varma, V. and Mogo, E. 2017. Occurrence, treatment protocols, and outcomes of colic in horses within Nairobi County, Kenya, *Vet. Wld.* **10** (10): 1255-1263.
- Hotwagner, K. and Iben, C. 2008. Evacuation of sand from the equine intestine with mineral oil, with and without psyllium. *J. Anim. Physiol. Anim. Nutri.* **92**(1): 86-91.
- Ismail, S.H. and Suliman, S.E. 2014. Clinical, Haematological and Biochemical Studies of Colic in Draught Horses and Donkeys in Nyala. *Sudan J. Sci. Technol.* **15**(2): 49-59.
- Mama, K.R. and Hector, R.C. 2019. Therapeutic developments in equine pain management. *Vet. J.* **247**: 50-56.
- Ragle, C.A., Meagher, D.M., Lacroix C.A. and Honnas, C.M. 1989. Surgical treatment of sand colic. Results in 40 horses. *Vet. Surg.* **18**: 48-51.
- Raofi, A., Nadalian, M.G. and Sharifi, D. 1996. Sand colic in a mule: A case report. *J. Equine Vet. Sci.* **16**(12): 574-575.
- Ruohoniemi, M., Kaikkonen, R., Raekallio, M. and Luukkanen, L. 2001. Abdominal radiography in monitoring the resolution of sand accumulations from the large colon of horses treated medically. *Equine Vet. J.* **33**(1): 59-64.
- Sullins, K.E. 1990. Sand impaction. In: White, N.A. (ed), *The Equine Acute Abdomen*. Lea & Febiger, Philadelphia, pp. 376-377.
- Walesby, H.A., Blackmer, J.M. and Berthelot, A. 2004. Equine sand colic. In: *Compendium on continuing education for the practicing veterinarian-north American edition.* **26**(9): 712-721.