



Case Report

Management of Chronic Diarrhea in an Adult Horse

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ABSTRACT

Chronic diarrhea could be a challenge from both the diagnostic and therapeutic point of view. This case report will discuss the clinical approach to the evaluation of chronic diarrhea with the production of free fecal water in an adult horse. The discussion of this case report may provide further information and describe a possible therapeutic option with sulfasalazine, focusing on the nutritional management of chronic diarrhea in adult horses. Nutritional management could be of higher importance for horses that suffer from this problem because it improves the well-being of the hindgut environment. In the present case report, motility abnormalities were identified without other physiological disturbances of colonic function or a decrease in body weight, and the priority was the following: (1) rebalancing of the diet to the real nutritional requirements of the patient, (2) avoiding excess carbohydrate from both forage and concentrate, (3) selecting the right proportion between good quality first-cut meadow hay and grounded and pelleted meadow hay that helps to reduce mechanical and physical load of the colon and could help in the formation of more homogeneous digesta, (4) reducing the stress with adequate feed consumption time, meal size, and time spent in a overgrazed paddock, and (5) increasing the proportion of omega-3 fatty acids in the diet. With the nutritional plan and management and the initial use of sulfasalazine, the horse maintained a good quality of the feces with a reduced or absent production of the free fecal water.

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1. Introduction

Diarrhea that persists for weeks or months is a frustrating problem from the diagnostic and therapeutic point of view, both for the owner and the clinicians. In this condition, feces are soft and watery, and the amount excreted is greater than normal [1]. Horses not only have the production of watery feces, but also can have “free fecal water” where horses could even produce normal feces; however, before, after, or during, or independent from defecation, fecal water is produced and pollutes the tail and legs, and may even cause skin lesions [2]. Diarrhea, to be considered ‘chronic’, has to have been present for at least 7 to 14 days [3]. In some

cases, the diarrhea will persist for weeks or months, with recurrent attacks of changed feces texture from “cowpat” consistency to real watery diarrhea, separated by periods of relatively normal fecal consistency. In the adult horse, chronic diarrhea is almost invariably associated with large intestinal (cecal and colonic) disease. It could be caused either by physical damage to the colonic wall or physiological disturbances of colonic function [3]. The causes of chronic diarrhea could be different, and in general could be due to inflammatory causes or imbalance of the normal physiological processes. Among inflammatory causes, different etiologies could be involved such as infection (bacterial or parasitic) and infiltrative disorder with involvement of the hindgut (alimentary lymphosarcoma, multisystemic eosinophilic epitheliotropic disease, proliferative enteropathy, and granulomatous enteritis); other causes of inflammation could be related to the ingestion of sand or the use of nonsteroidal anti-inflammatory drugs

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(NSAIDs) [4,5]. Noninflammatory causes could be related to alteration of the fermentation of the microorganism in the hindgut or extraintestinal causes like heart failure, liver disease [5], motility abnormalities, or other physiological disturbances of colonic function that lead to an idiopathic dysfunction of the hindgut.

However, many of the causes and mechanisms of chronic diarrhea are poorly understood, and horses affected by chronic diarrhea are often diagnostic and therapeutic challenges. A definitive diagnosis of the cause of chronic diarrhea will be achieved in only 60–70% of cases, and in many of these, it will only become apparent at postmortem examination [3].

The aim of this case report is to describe the clinical approach to the evaluation of chronic diarrhea in an adult horse and the treatment proposed for the problem using a nutritional point of view.

2. Case Description

2.1. Signalment and History

A 12-year-old Württemberg warmblood horse, used for leisure eventing competitions, was evaluated for a history of chronic diarrhea and persistent free fecal water. A precise history record was available for the previous years. Since the time of purchase at age of 8 years, the horse had soft (“cowpat consistency”) or watery feces with the production of free fecal water also independent from defecation. Initially, the owners related these episodes to “stressful” events such as changes in the management of the barn where the horse was stabled. According to the owner, the horse always had a normal appetite, good demeanor (calm and quiet), and a good body condition. The horse’s vaccination history was adequate. Anthelmintics were routinely administered in a proper manner, and a fecal parasite examination was performed at least once a year.

The horse always manifested the problem in a cyclic way: first, the owner recorded an increase of free fecal water; this was followed by an increase of defecation episodes (5–6 times in an hour); and after a few days, watery feces or diarrhea was observed. Different feeds were tested by the owner, but no constant improvement was seen. The problem was always present; however, the owner reported an increase of the fecal water and the worsening of consistency of the feces when the batch of forage, usually consisting of first-cut meadow hay, was replaced with the first-cut hay mainly composed of ryegrass (*Lolium multiflorum* Lam. ssp. *italicum*).

No improvement was also obtained using prebiotics like fructo-oligosaccharides or inulin and probiotics like *Lactobacillus* spp. However, the use of fresh baker’s yeast, *Saccharomyces cerevisiae*, at a dosage of 100 g/d was reported to be beneficial because the feces returned to normal consistency even if the fecal water was still reasonably present. Treatment with NSAIDs for a lameness problem (phenylbutazone 2.2 mg/kg intravenously once a day for 3 days) was administered in the spring of the same year, but no association was recorded with the aggravation of the problem. A change in management routine (related to a new barn manager and a new routine) aggravated the situation, and the horse was brought for examination.

2.2. Feeding Plan

At the time of the visit, samples were taken to perform feed analysis. The horse was fed with 9 kg of first-cut meadow hay of medium quality (6.5% crude protein [CP], 0.1% crude fat [CF], 33% crude fiber [CFb], and 6.7% ash as fed basis), 1.5 kg of cereal-based concentrate (12.4% CP, 3.5% CF, 9.1% CFb, and 8.4% ash as fed basis), 1.5 kg of alfalfa and oat straw chaff (12.8% CP, 32% CFb, and 11% ash as fed basis), and 120 g of soya oil. The ration was provided in four meals. No ryegrass hay was available at the time of the first visit.

2.3. Physical Examination

At physical examination, the horse had a BCS of 7 on a nine-point scale and a body weight of 620 kg; its coat was in good condition. All the organs functioned normally, with no sign of dehydration, normal capillary refill time, and normal rectal temperature.

The horse continuously presented “cowpat” consistency feces alternated with watery diarrhea and free fecal water with or independent from defecation. This was confirmed by the presence of dirty bedding and walls and wet tail and hind limbs. The frequency of defecation was increased up to 5 to 6 times in an hour. During the production of free fecal water, the horse presented repeated tail swishing (tail movement to the left or the right) and alternate rhythmic movement of the hind limbs. Colic was never manifested, but the horse seemed to be a little apathetic and had some difficulties to be collected during flat work. No signs of surgery were present on the abdomen.

Examination of the digestive system showed normal appetite, normal oral cavity, dentition, and mastication; auscultation revealed an abdominal motility that was increased in the left upper and lower quadrant, but normal on the right abdomen.

2.4. Diagnostic Procedure

Differential diagnosis, common causes of chronic diarrhea, and procedure considered in the present case report are reported in Figure 1. Abdominal radiography was not considered because of the size of the horse. Rectal biopsy or exploratory laparotomy was refused by the owner because of the risks involved. The owner did not agree for liver biopsy because of the risks involved and the lack of biochemical indications for liver problem. A sugar absorption test was attempted but abandoned because of the horse’s temperament. Fecal examination excluded infective causes or sand ingestion and also was performed to evaluate the visual pattern of the feces and pH. The pH was determined immediately after defecation by mixing equal amounts of feces and double-deionized water and submerging the pH paper. The mean value obtained from three different samples was 6.4.

Hematological and biochemical parameters performed at the time of the visit (December 2009) are reported in Table 1. The analysis of the previous 3 years is also given. All hematological and biochemical parameters were within normal reference ranges.

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