

Nutritional management in a horse after caecocolic intussusception with almost total typhlectomy: a case report

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Introduction

Caecocolic intussusception in the horse is a condition believed to result from abnormal intestinal motility, moving ingesta from the apex of the caecum into the caecal base and right ventral colon (Milne *et al.*, 1989). Factors believed to predispose to this condition include infestation with parasites (Owen *et al.*, 1989; Mair *et al.*, 2000), caecal abscesses (Pearson *et al.*, 1971) and motility-modifying drugs (Pearson *et al.*, 1975). Clinical signs can be diverse. While certain horses suffering from caecocolic intussusception will develop acute colic, other will present with intermittent abdominal pain (Gaughan and Hackett, 1990). Treatment requires surgery, and, depending on caecal compromise and whether the intussusception can be manually reduced, partial or complete typhlectomy may be indicated (Hubert *et al.*, 2000). Unfortunately, there is very little information available at this time about optimal nutritional management after typhlectomy in the horse. And as there is no indication of caecal regrowth in horses, as opposed to rabbits (Herndon and Hove, 1955), it is yet important to take some nutritional considerations into account after large partial caecum amputation.

Case history

A 492kg 17-year-old Haflinger gelding was presented at the Faculty of Veterinary Medicine of Ghent University with complaints of acute colic. Clinical examination resulted in a presumptive diagnosis of caecocolic intussusception, which was later on confirmed by exploratory laparotomy. The detected intussusception could be reduced manually during surgery, but the affected caecum was severely oedematous and showed significant irritation at serosal level. Therefore, a large partial typhlectomy was performed, only leaving the base of the caecum in situ. Postoperative recovery after the two-hour surgery was uneventful.

Nutritional management

Whereas immediate post-surgical support in typhlectomized horses aims to maintain current bodyweight, the long-term goal is to obtain and maintain an optimal body condition score. Since decreased digestibilities of energy, protein and dry matter can be a consequence of equine caecal amputation (Sauer *et al.*, 1979), a 20% increase above maintenance energy requirements was provided post-op to try and maintain current body weight, as well as a protein supply well above NRC (2007) requirement. Having almost lost its entire caecum, the horse was initially fed short-cut and pelleted roughage in order to reduce the physical and mechanical load on the remaining colon, as is common practice in diet formulations for horses suffering from right dorsal colitis (Cohen *et al.*, 1995). A dry matter amount of 1% on ideal bodyweight of roughage (dried short-cut grass, non-molassed beet pulp and alfalfa pellets) was provided, as this is the minimum recommended value to maintain gastrointestinal health (Geor and Harris, 2007). A high-energy/high-protein concentrate, specifically formulated to provide nutritional support to pregnant or lactating mares (Pavo PodoLac-stalseizoen) was advised to focus primarily on small intestinal digestion. The diet was divided in four meals a day to reduce starch intake below 1 g/kg bodyweight per meal, which is recommended in colic prone horses (Durham, 2013). Furthermore, feeding small but frequent meals may also aid better digestion and absorption (Harris, 2007). Corn oil was added to the diet to further increase energy intake, finally

resulting in a total dietary crude fat of 5.5% (DM basis). This vegetal oil was gradually introduced to allow the horse to get used to its taste, and to monitor faeces for any sheen on the fecal balls, as this could be a sign of some fat escaping digestion (Kronfeld *et al.*, 2004). Additionally, a *Saccharomyces cerevisiae* supplement (Yea-sacc¹⁰²⁶, 4x10⁹CFU) was added to the ration in order to help support hindgut fermentation (Medina *et al.*, 2002), along a general vitamin and mineral supplement to ensure NRC (2007) nutrient requirement minimums, including a safety factor of 1.2, were met. To prevent peroxidation, an additional requirement of 1 IU of vitamin E per ml of added vegetal oil was taken into account when calculating NRC vitamin E requirements (Harris, 1999). Furthermore, water and a salt lick were provided *ad libitum*. Finally, all straw was removed from the stable to prevent any long-stem roughage intake.

Follow-up

All diet components were introduced gradually over the course of five days, and were well tolerated. Ten days after the surgery, the horse was discharged from the hospital. As the horse continued to recover at home, the post-operative diet was maintained. After the horse remained doing well for a whole month on the new diet, a slow transition towards a more traditional diet containing long stem roughage was made. Afterwards, the post-operative diet ingredients were gradually decreased in order to remain on an all-grass hay diet only (supplemented with a forage balancer). Six months after the surgery, the horse remains doing well, and even presented slightly overweight. Evaluation of more horses with the same condition is however necessary to determine long-term success of this nutritional approach to large partial typhlectomy in the horse.

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