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Case Report

Surgical Management of Type I Rectal Prolapse in a Horse

Abstract

Background: Rectal prolapse is a medical and surgical emergency that occurs across various domestic animals; however, reports in horses are rare. This condition often arises due to excessive straining, which can result from factors such as constipation or nutritional imbalances. This case report describes the successful management of type I rectal prolapse in a 3-year-old horse.

Method: A 3-year-old, 300kg horse presented with a doughnut-shaped, bloody mass protruding from the anus. A physical examination confirmed type I rectal prolapse. The prolapsed mass was thoroughly washed with normal saline, disinfected with chlorhexidine, and reduced in size using granulated sugar to minimize edema. The mass was then gently re-positioned into the pelvic cavity. A purse-string suture was applied around the anal orifice to prevent recurrence. The treatment plan included systemic administration of antibiotics and anti-inflammatory drugs, along with intravenous lidocaine to reduce pain and aid in prolapse reduction.

Result: The horse stopped straining within three days of treatment. The purse-string suture was removed seven days post-procedure. No signs of recurrence or complications were observed, and the horse made a full recovery weeks after the procedure without re-occurrence.

Conclusion: This case demonstrates the successful conservative management of rectal prolapse in a horse through timely intervention.

Keywords: Rectal Prolapse, Horse, Purse-String Suture, Constipation, Nutritional Imbalances.

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Background

In horses, the rectum is located at the caudal part of the gastrointestinal tract, bordered caudally by the anal sphincter, and extends about 30 cm cranially towards the oral cavity (Freeman, 2019). Rectal prolapse is one of the surgical emergencies in horses and it's a condition in which there is protrusion of the rectal mucosa through the anal sphincter [22]. In animals including horses, rectal prolapse is associated with conditions that cause excessive straining or tenesmus [11,22]. These conditions include colitis, colic, diarrhea, constipation, rectal foreign body, urinary tract obstruction, intestinal parasitism, dystocia, and retained fetal membranes [1,3,19,22,]. Rectal prolapse has been reported more in mare than stallion [1,22]. Rectal prolapse in horses is grouped into types I-IV based on severity and anatomical organ affected with types I and II being the most common [1,5,11]. In Type I which is also known as incomplete prolapse, only the rectal mucosa and submucosa protrude through the anus and appear as a large, soft, doughnut-shaped swelling [11]. In Type II rectal prolapse which is referred to as the complete prolapse, there is complete prolapse of the whole rectal or part of rectal ampulla making the ventral portion of the prolapsed tissue thicker than the dorsal portion []11. In the case of Type III rectal prolapse, there is intussusception of the small colon into the rectum which does not protrude through the anal sphincter while rectal prolapse is classified as type IV if the peritoneal part of the rectum and part of the intussuscepted small colon protrude through the anus [11]. Diagnosis of rectal prolapse is usually due to the presence and protrusion of a cylindrical and/or elongated reddish mass through the anus [1]. This can however be differentiated from ileo-ceco-colic intussusception by failure to pass a linear instrument through its opening due presence of fornix [5]. Rectal prolapse can occur in all animals with varying prevalence in different animals [1,2,11] This report presents a case of Type I rectal prolapse that was managed surgically with excellent recovery in a horse.

Case Presentation

A 3-year-old horse weighing about 300 kg body weight was reported to Vetland Veterinary Hospital with a history of straining and a protruding intestinal mass from the anus having bloody discharge. The protruding mass was noticed about 24 hours before the presentation. The horse was among 24 horses used for shows by a resort center and are being fed with wheat bran majorly with occasional access to grasses. They are being dewormed, vaccinated, and treated regularly. The horse was apparently healthy with a pinkish ocular mucous membrane. The capillary refill time was less than 2 seconds. The pulse rate (52 beats per minute) and respiratory rate (20 cycles per minute) were within normal range. Horse was found straining and restless. The mass was edematous, pinkish, and cylindrical with a doughnut appearance at the perineal region (Figure 1). It was grossly contaminated

Figure 1: A cylindrical doughnut-shaped rectal mass protruding from the anus.

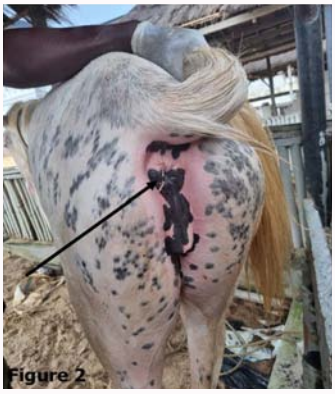

Figure 2: The Purse-string retention suture after returning the mass into the pelvic cavity.

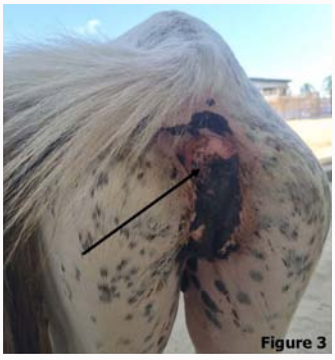

Figure 3: The anal region of the horse after the suture was removed and the case.

with few areas of lacerations. The feces were well formed, firm, and dry and were examined physically for the presence of worms but none were found. The feed of the horses was examined and some parts of the feed in the store were moldy. A diagnosis of type I rectal prolapse of secondary to suspected moldy feed and dry fecal materials. The horse was administered 2% lidocaine HCl (ProviveR, TakPharmaceticals Limited, India) at 1.3mg/kg intravenously bolus followed by 0.03mg/kg/minutes as constant rate infusion to provide gastrointestinal analgesia while standing chemical restrain was achieved by intramuscular injection of 1mg/kg 2% xylazine hydrochloride (Xylased, Bioveta, Ivanovice, Czech Republic). The mass was washed with normal saline (Unisal® Unique Pharmaceutical Ltd, Sango Ota, Ogun State Nigeria) to clear off the dirt and thereafter disinfected with diluted chlorhexidine gluconate (Saro LifeCare Limited, Nigeria). The lacerations were closed with size 2-0 chromic catguts suture. Thereafter, the mass was rubbed with granulated sugar to reduce the level of edema and after the mass had considerably reduced in size, it was gently pushed inward. A purse-string suture technique using size 2 Silk multifilament suture (Fantastik, Shenzhen, China) was applied to retain the mass with the pelvic cavity (Figure 2). Additionaly, 1% Hyoscine butylbromide (Buscopan, Shijiazhuang G-house Trading Co. ltd, China) at 0.25mg/kg was administered intravenously three times daily for 3 days to reduce the straining. Liquid

paraffin (MOKO® Invesa, Industrial Veterinaria Spain) of 1000ml was administered orally twice daily for 3 days to soften the feces. A systemic antibiotic 20% enrofloxacin (Floxinor, Jubaili Animal Health, Abuja, Nigeria) was administered at 5mg/kg intravenously for 3 days. 0.2% Dexamethasone (Dexanor, Jubahili Animal Health, Abuja, Nigeria) was also administered intravenously once to reduce inflammation, edema and pain. The horse handler was advised to let the horse have access to enough water, less wheat bran, and more grasses. They should also get rid of the moldy bran and not feed it to the horses again. The horse stopped straining after the third day and the retention suture was removed 7 days post-suturing (Figure 3). The horse was evaluated 4 weeks post-suture removal and there was no recurrence and the horse recovered fully.

Discussion and Conclusion

Rectal prolapse is a surgical emergency in animals that should be promptly managed once reported. It was observed that the horse in this case was straining prior to the occurrence of rectal prolapse and rectal prolapse has been reported to be associated with various causes of prolonged straining or tenesmus [3,11,22]. The etiology of prolonged straining and subsequent rectal prolapse, in this case, is unclear as the history revealed that the animal was dewormed recently and there was no diarrhea. However, there is the possibility that feeding the animal dry wheat bran with some part moldy may have resulted in constipation leading to tenesmus. This was similarly observed by [1] in a colt that suffered from rectal prolapse. Delay in prompt management may result in edema, laceration, ischemia, hemorrhages, and tissue necrosis with poor prognosis [11,20]. In this present case, although edema, lacerations, and hemorrhages were observed, the early intervention helped in achieving a good prognosis unlike in the case of [11] in which the animal eventually died despite intervention because it was reported 5 days after the occurrence. The present case was diagnosed as type I rectal prolapse based on the history, clinical signs of tenesmus, and doughnut-cylindrical appearance of the rectal mass. This was similarly reported by [1] in the curly colt and therefore corroborated the fact that type I and II rectal prolapses are the most common in horses [5,11]. Application of purse string retaining suture following replacement of prolapse rectum has been regarded as the treatment of choice for rectal prolapse [1,4,12,16]. Type I and II rectal prolapses have been reported to respond adequately to manual reduction and medical management if the tissue has not gone necrotic [5]. Similar treatment with manual reduction, placement of purse string retaining suture, and medical management with antibiotics, analgesic, anti-inflammatory, and antiperistalsis were adopted in the management of this case with a favorable outcome. It is noteworthy in this case report that the administration of intravenous lidocaine was pivotal in handling, and reducing the prolapse and eventual uneventful recovery. Lidocaine is an analgesic agent that blocks sodium channels, prevents the propagation of action potential, and nerve impulses, and consequently generates sensory and motor blockade for local and regional anesthesia [6]. Several authors have reported the importance of lidocaine epidural analgesia in perineal and reproductive as well as gastrointestinal tract surgery where it's used to reduce tenesmus in addition to analgesic effect [8,10,14,5,]. In this case management, rather than epidural injection of lidocaine, intravenous administration was used. This was done to ease the handling of the horse which was restless due to gastrointestinal pain. Also to prevent ataxia and recumbency that sometimes ensue after administration of epidural lidocaine in animals [10]. Intravenous administration of lidocaine is used in human and veterinary patients, to reduce intraoperative and postoperative pain, promote gastrointestinal tract motility, and reduce the release of endotoxin and inflammatory mediators [9,13,17]. In horses, intravenous lidocaine at a bolus rate of 1.3-2mg/kg provides sedation, visceral analgesia, and anti-inflammatory and endotoxemic effects, making lidocaine a popular choice for the management of colic pain [14]. This was observed in this case as the prolapse reduction was easier with a combination of intravenous lidocaine and standing chemical restraint with xylazine. The recovery was uneventful and could be because intravenous lidocaine shortens the duration and severity of postoperative ileus and gastrointestinal pain, thereby improving survival times [13]. Even though disorientation, vocalization, seizures, vomiting, muscle twitching, respiratory depression, bradycardia, decreases in cardiac output, and hypotension are reported adverse effects of intravenous lidocaine [18], these were prevented by slow administration of the lidocaine over 5 minutes period. These adverse effects are most commonly reported after IV administration of large bolus doses of lidocaine [21]. This case report describes a case of rectal prolapse in a horse due to excessive straining that may have arisen due to constipation as a result of feeding dry and moldy wheat bran. Successful management was due to early presentation, proper handling, and prompt management.

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