

Type II rectal prolapses in vulnerable donkeys: three case reports
Prolapsos retais tipo II em asininos sob vulnerabilidade: relato de três casos
Prolapso rectal tipo II en burros vulnerables: reporte de tres casos

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Abstract

Rectal prolapse a rectal static disorder and is more common in donkey than in horses. The aim of this study was to relate the cases of three type II retained prolapses in northeastern donkeys (*Equus asinus*) that were vulnerable and mistreated, from the exploratory chain to decrease. Two males and one female, which were treated, exhibited an evolution of prolapse over 6, 24, and 96 h. Tachycardia and tachypnea were observed in the two cases with the shortest duration of prolapse evolution, for which conservative mechanical reversal was effective, without the need for a surgical procedure. Conditions differed between the heart rate and respiratory parameters in case with 96 h of evolution, or in those where it was necessary to use epidural anesthesia and sphincter suture with a tobacco bag pattern. The findings of this study reinforce the need to compile cases from the literature to establish a standard protocol for rectal prolapse in donkeys.

Keywords *Equus asinus*; Rectum; Protrusion; Mechanical reversal.

Resumo

O prolapso retal é um distúrbio estático retal e é mais comum em burros do que em cavalos. O objetivo deste estudo foi relacionar os casos de três prolapso retidos do tipo II em jumentos do nordeste (*Equus asinus*) vulneráveis e maltratados, da cadeia exploratória para o abate. Dois machos e uma fêmea, que foram tratados, apresentaram evolução do prolapso ao longo de 6, 24 e 96h. Taquicardia e taquipnéia foram observadas nos dois casos com menor tempo de evolução do prolapso, para qual a reversão mecânica conservadora foi eficaz, sem a necessidade de procedimento cirúrgico. As condições diferiram entre a frequência cardíaca e os parâmetros respiratórios nos casos com 96 h de evolução ou naqueles em que foi necessário o uso de anestesia epidural e sutura esfínteriana com padrão de saco de tabaco. Os resultados deste estudo reforçam a necessidade de compilar casos da literatura para estabelecer um protocolo padrão para prolapso retal em burros.

Palavras-chave: *Equus asinus*; Reto; Protusão; Reversão mecânica.

Resumen

El prolapso rectal es un trastorno rectal estático y es más común en burros que en caballos. El objetivo de este estudio fue relacionar los casos de tres prolapsos retenidos de tipo II en burros vulnerables y maltratados del noreste (*Equus asinus*), de la cadena exploratoria para sacrificio. Dos hombres y una mujer, que fueron tratados, desarrollaron prolapso a las 6, 24 y 96 horas. Se observaron taquicardia y taquipnea en los dos casos con menor tiempo de evolución del prolapso, para lo cual la reversión mecánica conservadora fue efectiva, sin necesidad de intervención quirúrgica. Las condiciones difirieron entre frecuencia cardíaca y parámetros respiratorios en los casos con 96 h de evolución o en aquellos en los que fue necesario utilizar anestesia epidural y sutura de esfínteres con patrón de bolsa de tabaco. Los resultados de este estudio refuerzan la necesidad de recopilar casos de la literatura para establecer un protocolo estándar para el prolapso rectal en burros.

Palabras clave: *Equus asinus*; Reto; Protusión; Inversión mecánica.

1. Introduction

Rectal prolapse is a rectal static disorder, which is more common in donkeys (*Equus asinus*) than in horses (Desmaizières, 2006; Mendonza et al., 2018). Rectal prolapse is subdivided into complete or incomplete prolapse, depending on the rectal layers involved and is classified into four types: I involves only the rectal mucosa and submucosa protruding through the anal sphincter; II represents the full thickness prolapse of the entire rectal ampulla or a portion of it; III involves the inclusion of part of the small colon intussuscepted in the rectum, without being projected by the anus; and IV involves intussusception of the peritoneal rectum and part of the smaller colon by the anus, which is more common in females affected by dystocic births (El-Karim, 1995; Robert et al., 2016).

These conditions are common in work donkeys, secondary to diarrhea, prolonged continuous coughs, high parasitic loads (mainly *Gasterophilus* and *Strongylus*), and malnutrition, but without a predisposition related to age or sex. They present primarily in cases of colds, obstruction of the urinary tract, rectal neoplasia, or a foreign body. The most common clinical signs are difficulty in defecation, proctitis, inability to control pelvic muscles, and severe pain (El-Karim, 1995; Getachew et al., 2012; Robert et al., 2016).

The treatment of rectal prolapse depends on the recognition of the type of prolapse, tissues involved, and degree of tissue damage, which can only be resolved with conservative mechanical reversion (cases type I and II) or surgery (type III and IV), by perineal surgery,

laparotomy, or video-laparoscopy (Santos Jr, 2005; Jena et al., 2013; Robert et al., 2016). The aim of this study was to present three cases of type II rectal prolapse in vulnerable donkeys.

2. Metodology

The article is a case report of three rectal prolapses that occurred with the rescued donkeys on Canudos-BA, the therapies in all three cases were a bit different, two of the animals were treated clinically and the third one needed surgery. The first clinical treatment were made first by doing the antiseptis using clorexidine soap, cryotherapy, and then washing the contents sing Lidocaine and Saline 0.9% followed by the mechanical reversion of the mucosa. The second treatment followed the same course but had recurrence of the prolapse, needing the prescription of antibiotic and AINES. The third case was surgical, and the animal had to be sedated using xylazine and epidural anesthesia. All procedures are described more accurately at the following topic.

3. Case Report

Three donkeys (one female and two males) were attended, aged between 3 and 13 years, and with low body scores, and all with clinical signs of rectal prolapse. The animals were on the receiving property of the donkey exploratory chain where they would be sent for slaughter, located in the city of Canudos, state of Bahia, Brazil. The property was temporarily banned because of reports of ill-treatment to animals and for the control of health risks. The origin and previous sanitary management of the animals were unknown, but the cases of rectal prolapse in the area were frequent, and the donkeys with the pathogenesis were primarily sent to slaughter (reducing financial losses) or died without any type of therapeutic intervention. All patients had type II rectal prolapse (Table 1).

Table 1: Clinical signs and parameters evaluated in donkeys with type II rectal prolapse.

Parameters	Donkey case reports		
	1	2	3
Sex	F	M ¹	M ²
Age (years)	3	9	13
Weight (kg)	80	112	140
Heart rate (bpm)	76	64	40
Respiratory rate (<i>f</i>)	38	32	22
Capillary refill (s)	2	2	2
Temperature (T°C)	37.2	37.6	37.0
Clinical signs	6h evolution Moderate pain	24h evolution Moderate pain and diarrhea	96h evolution Moderate pain, acute diarrhea, and lack of appetite

¹Stallion donkey; ²Castrated donkey
 Source: Authors.

In case 1 (female), local antisepsis was performed with water and chlorhexidine soap, cryotherapy with ice for 10 min, washing the contents with 400 mg of lidocaine in 500 mL of 0.9% saline, local lubrication with mineral oil, and mechanical reversion of mucosa, without any anesthetic or surgical procedure. Scopolamine (0.2 mg/mg/kg IM) in combination with flunixin meglumine (2 mg/kg IV) was administered, and the animal was kept under confinement and supervision for 72 h without recidive. Case 2 was a stallion and the therapeutic approach was the same, but there was a recurrence of prolapse at 12 and 18 h, requiring two new reversal procedures. The prescription of scopolamine (0.2 mg/ kg/ IM, every 24h, for 3 days) and flunixin meglumine (2 mg/ kg IV, for 3 days) was maintained, in addition to a dose of procain e penicillin (20,000 IU/kg IM), with reinforcement after 48 h. After 72 h of confinement without recurrence, the animal was discharged.

In case 3 (castrated male), the first approach adopted was the same as in cases 1 and 2, but an attempt of mechanical mucosa reversal did not have an effect, presenting three recurrences in 24 h. Thus, we decided to sedate the animal with xylazine (1 mg/kg IV) and epidural anesthesia between the second and third coccygeal vertebrae, as described by Matthews and van Loon (2013), with 2 mL of 2% lidocaine without a vasoconstrictor. After the procedure, a satisfactory reduction was achieved, suturing the anal sphincter in a tobacco suture pattern with nylon 1 suture, trying to avoid recurrences (Figure 1).

Figure 1: A, Donkey rectal prolapse type II, after cleaning (case 3). B, After the procedure, the appearance of the tobacco bag suture pattern.



Source: Authors.

The stitches were loosened twice a day and kept less tense during the night for 72 h after the procedure. After this period, the animal had loose threads until the fifth day when it was medically discharged. The therapeutic approach adopted was the same as in case 2.

4. Discussion

The three cases were of type II prolapse, probably the most common in donkeys. In these animals, several etiopathogeneses could be associated owing to the mistreatment to which the animals were submitted; however, cases 2 and 3 were accompanied by diarrhea with no predisposition associated with age or sex, as described by Desmaizières (2006). Animal coproparasitological examinations were not performed to associate prolapse with parasitic load, as verified by Robert et al. (2016). However, the group to which these donkeys belonged was diagnosed with a high parasitic burden of the superfamily *Trichostronglydae* (personal communication).

Regarding the physiological parameters, it was noted that in cases 1 and 2, with the evolution of 6 and 24 h, the heart rates (HR) were 76 and 64 bpm, which were higher than the

average for the species, from 36 to 52 bpm (Evans & Crane, 2018). In case 3, after 4 days of evolution, the HR was 40 bpm, suggesting chronicity can lower the HR in cases of prolapse. Regarding respiratory rate (RF), tachypnea was also more pronounced in cases 1 (38 mpm) and 2 (32 mpm), than in case 3 (24 mpm), which was within the normal range for species at 12 to 28 mpm (Evans & Crane, 2018). None of the animals had a temperature above 37.8 °C, indicating that even with 4 days of evolution, hyperthermia did not occur.

In the cases of type II rectal prolapses described in this report, the conservative mechanical reversion was primarily chosen after the control of edema by cryotherapy, instillation of a solution with lidocaine, and lubrication, which resulted in success in case 1 that was more recent. In case 2, with 24 h of evolution, there was no need for a surgical procedure, but diarrhea and the time of evolution resulted in three reversals, as well as the establishment of more prolonged therapy with an anticholinergic drug (scopolamine) and procaine penicillin. In case 3, with more than 24 h of evolution, it was necessary, in addition to the previously described procedures, to administer epidural anesthesia with a variation for donkeys (Matthews and van Loon, 2013), providing interruption of effort (tenesmus), and smooth replacement of prolapsed tissues. This made it possible to perform the tobacco bag suture technique to contain the rectum without any risk of prolapse.

5. Conclusion

From the three case reports of donkeys with type II rectal prolapse, it is noteworthy that tachycardia and tachypnea were observed in the two cases with the shortest evolution, in which conservative mechanical reversal was effective. In the case of the animal with a prolapse evolution over 24 h, a surgical procedure was necessary with no changes in HR and RF. The findings of this study reinforce the need to compile cases from the literature to establish a standard protocol for rectal prolapse in donkeys.

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