

**A study on Post-partal vaginal prolapse of a semi captive spotted deer (*Axis axis*)-A rare case in Bangladesh**



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**A study on Post-partal vaginal prolapse of a semi captive spotted deer (*Axis axis*)-A rare an case in Bangladesh**



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## Abstract

**Objective:** The present study aimed to describe a case of vaginal prolapse in a semi-captive spotted deer with its diagnosis, treatment and successful management.

**Materials and methods:** A 3 years old spotted deer was brought to the Teaching Veterinary Hospital (TVH) at Chattogram Veterinary and Animal Sciences University (CVASU) with a history of recumbence, recent calving of a dead kid and suspended mass from vagina. Physical examination reveals tachycardia and tachypnea. The swollen suspended mass from vagina was examined and the case was diagnosed as vaginal prolapse. The animal was subjected to low epidural anesthesia with 2% lignocaine hydrochloride. The hanging mass was reinstated after proper cleaning with normal saline and mild potassium permanganate solution and Quilled suture was applied. For post-operative management, DNS 5% (300 ml/i/v/ day), Calcium Borogluconate [Inj. Magical 20 (SK-F pharmaceuticals) 100 ml/day/i/v] and Drotaverine hydrochloride [Inj. No-spa 4ml/day/i/m (Ambee Pharmaceuticals)] was administer for 5 days.

**Results:** After one month follow up the deer was showing no sign of reoccurrence and no further complication was noticed. The vaginal prolapse was successfully managed with the described protocol.

**Conclusion:** Delayed diagnosis and management of vaginal prolapse may develop too many complications like septicemia and myiasis. So, early diagnosis and treatment of such condition is very much important.

**Keywords:** Spotted Deer (*Axis axis*), Vaginal Prolapse, Correction, Management

## CHAPTER 1: INTRODUCTION

Vaginal prolapses are common in all large animal species one of the crucial causes of reproductive failure of animals. It is frequently reported in cows (Wachida and Kisani, 2011), buffalos, does and ewes (Patra et al., 2014), less common in mare and rare in deer (Robling et al., 2012). It may be defined as inside-out protrusion of vagina from their normal anatomical position, through the genital opening (Noakes et al., 2009). Prolapse of the vagina generally occurs in the last trimester of pregnancy when placental estrogen production increases (Wolfe, 2009) resulting relaxation of the pelvic ligaments and adjacent structures (Hanie, 2006) but Yotov et al. (2013) reported vaginal prolapse in a non-pregnant heifer in Bulgaria. Though the actual etiology of vaginal prolapse is still unknown (Jackson, 2004), it is supposed to be attributed for poor uterine tone, discomfort or pain, forceful delivery associated with parturition, conditions that enhance abdominal pressure e.g. bloat, tympany (Ennen et al., 2011), feeding concentrate rich in estrogen, deficiency of certain macro and micro minerals (Miesner and Anderson, 2008). Animals with vaginal prolapse treated promptly recover without complication while delay in treatment could result in death of the animal. Successful treatment depends on the type of case, the duration of the case, the degree of damage and contamination. Several complications are reported secondary to vaginal prolapse. Some of them are hemorrhage, shock, septic metritis, low milk yield, infertility or death. Mortality due to vaginal prolapse has not been well documented in deer, only two known case of uterine prolapse has been reported in a free-ranging mule deer (Robling et al., 2012). Sometimes in delayed cases of vaginal prolapse, interferes with repositioning the prolapsed mass (Gyan et al., 2011). Following the replacement of prolapsed uterus, broad spectrum antibiotic therapy for three to five days will help in preventing secondary bacterial infection (Borobia-Belsué, 2006). The present paper describes the successful management of vaginal prolapse in a semi-captive spotted deer (*Axis axis*) presented to Teaching Veterinary Hospital (SAQTVH), Chattogram Veterinary and Animal Sciences University (CVASU).

## CHAPTER 2: MATERIALS AND METHODS

### 2.1. HISTORY AND CLINICAL EXAMINATION

A three (3) years old recently calved semi-captive spotted pet deer was admitted to Teaching Veterinary Hospital (TVH) at Chattogram Veterinary and animal Sciences University (CVASU). The deer weighed 20kg. The owner claimed that the deer had calved 3 days ago and unfortunately the kid had died. The deer was too weak to stand up as well as they have seen a mass coming out through the genital opening 1 day before. They tried to hold the mass by hands and kept it to its normal position but it recurred. Immediately after coming, the general physical examination e.g. temperature (100.4°F), heart rate (58 bpm), respiratory rate (78 bpm) was done. Then the hanging mass was examined and it confirmed as vaginal prolapse. The prolapsed mass was swollen and edematous (Figure 1a). The deer exhibited signs of depression. After that blood sample was collected into two vacutainers with and without anti-coagulant for estimation of serum calcium, serum phosphorus, Hb%, PCV etc.

### 2.2. TREATMENT AND MANAGEMENT

At first the perineal region of deer was washed with clean water (Figure 2). Then low epidural anesthesia was done at 1<sup>st</sup> intercoccygeal space using local anesthetic, 2% lignocaine hydrochloride (2ml) to prevent straining, easy control of tail and desensitization of pelvic region which facilitate easy manipulation of vagina into its original position. Then sub-sequentially, normal saline and mild potassium permanganate solution was used to clean the dirt. Afterward, ice was applied to reduce its volume (Figure 3). As the deer was unable to stand up, prolapsed mass was lifted with both hands and replaced to vagina by using thumb first in recumbent condition. Then 2% lidocaine hydrochloride was administered sub-cutaneously into the lips of vagina (Figure 4) where the needle was punctured. Quilled (Figure 5) suture was applied with nylon parallel to the vulva keeping space for its urination. It was advised to keep the suture for 15 days and then removed it. The owner was asked to take proper post-operative care for preventing recurrence. The deer was followed for next 1 month. It recovered successfully without any complication. As post-operative care, DNS 5% (300 ml/i/v/ day) for 5 days, calcium Borogluconate [Inj. Magical 20 (SK-F pharmaceuticals) 100 ml/day/i/v] for 5 days, Drotaverine hydrochloride [Inj. No-spa 4ml/day/i/m (Ambee Pharmaceuticals)] for

5 days was administered. For topical application at vulvar lips 5% Povidin iodine [Ointment viodin (Square pharmaceuticals)] was recommended.

		
<p>Fig 1: Deer with prolapsed vagina</p>	<p>Fig 2: Application of ice to reduce the voluminous mass</p>	<p>Fig 3: Cleaning dirt from mass</p>
		
<p>Fig 4: Site selection for inserting needle</p>	<p>Fig 5: Application of quilled suture</p>	



### CHAPTER 3: RESULTS AND DISCUSSION

In this clinical study, the clinical condition was identified correctly and successfully managed. The case was followed for next one month and no signs of reoccurrence and complication were noticed. But in some study it was reported that delay in correction of vaginal prolapse may lead to septicemic condition which is treated as life threatening condition (Bhattacharya et al., 2007). Vaginal prolapse commonly occurs during last trimester of pregnancy particularly in pluriparous animal as compared to heifer (Hasan et al., 2017). Our finding is not consistent with earlier report where the maximum number of such cases was noticed in the last 2 months of gestation (Noakes et al., 2001), whereas here the prolapse of vagina was seen immediate after parturition. It might be due to decrease in progesterone and production of relaxing and especially in the last two weeks of pregnancy (Henricks et al., 2011), may cause relaxation of the pelvic ligaments and surrounding soft tissue structures (Hafez and Hafez, 2000). High intra-abdominal pressure because of sudden change in feeding had also been mentioned by Hasan et al. (2017). From biochemical blood analysis it was seen that estimated value of serum calcium (6.7 mg/dl) and phosphorus (3.2 mg/dl), PCV (30%), Hb% (7.5) was somewhat less than the reference (Table 1) value. This might be a reason of prolapse which supports the finding of Paul et al. (2017) and Akthar et al. (2008). As the prolapse mass causes tenesmus, low epidural anesthesia is compulsory to reduce the restraining and assist in easy and quick return of protruding organ (Noakes et al., 2009). Xylazine is contraindicated during pregnancy, though in this case the deer was not pregnant which is similar with report of Fazili and Bhattacharyya (2008). According to Bhattacharya et al. (2012) vaginal prolapse had been managed successfully by administration of exogenous progesterone however in this case no exogenous progesterone was used as it is not available for animal in Bangladesh and deer had already been delivered. Again, Roberts (2004) did not recommend progesterone in late gestation as it might cause prolonged gestation. In this study, nylon size 0 was used for successful management of vaginal prolapse which agrees the study of Wachida and Kisani (2011). However, different authors used different suture material and technique for successful management during handling prolapse cases such as Sharma et al. (2017) and Lakde et al. (2014) applied rope truss as suture material and Patra et al. (2014) as well as Hasan et al. (2017) utilized retention suture or Buhner's suture technique for managing the prolapse cases.

Similarly, Ahmed and Jena (2015) managed prepartum recurrent recto-vaginal prolapse by using hidden vertical mattress suture of cotton material in a dairy cow.

Table 1: Haematological and serum biochemical parameters in spotted deer under semi captivity

Parameters	Estimated value	Reference value
Hemoglobin (g/dl)	7.5	8.5-12.5
Packed-cell volume (mm)	33.5	33-36
RBC count (x 10 <sup>12</sup> )	11.3	11-15
WBC count (x 10 <sup>3</sup> )	4	3.5-5.1
Neutrophil	50	48-56
Lymphocyte	43	41-47
Eosinophil	1	1-3
Monocyte	1	1-4
Basophil	0	0
Calcium (mg/dl)	6.7	8.28-10.68
Phosphorus (mg/dl)	3.2	3.58-4.78

Furthermore, modified mint chews method was used by Ezakial et al. (2018) to control chronic cervico vaginal prolapse in a post-partum Gir cow. Abdisa (2018) observed that modified Buhner's technique, using infusion set tubing as suture material resulted satisfactory result in preventing recurrence of the prolapse. Parental administration of antibiotic helps to control secondary bacterial infection (Borobia-Belsue, 2006), anti-inflammatory and antihistaminic drugs help to correct pain and inflammation. Since hypocalcaemia is the most common cause of uterine prolapse according to Arthur. (2001) and Manfield. (2006) which is also observed in this study resulting calcium Borogluconate therapy was given in the present study. Adequate fluid was also administered to save the deer from shock that was described by Raju et al. (2018).

## **CHAPTER 4: CONCLUSIONS**

Vaginal prolapse may cause temporary to permanent infertility, moreover death in long run in deer if delay in treatment or ignorance. Immediate diagnosis, correction, quick management and proper post-operative care prevent its recurrence as well as preserve its reproductive life. Here, we report the successful management of vaginal prolapse in a spotted deer using quilled suture.

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