

Short Communication

Correction and management of uterine prolapse in a Holstein Friesian cow

Pranab Paul¹, Md. Monir Hossan², Saroj Kumar Yadav¹ and Tanjila Hasan^{1*}

¹Department of Medicine and Surgery, Faculty of Veterinary Medicine, Chittagong Veterinary and Animal Sciences University, Khulshi, Chittagong-4225, Bangladesh

²Veterinary surgeon, Manikganj Sadar, Manikganj, Bangladesh

*Corresponding author: Tanjila Hasan, Department of Medicine and Surgery, Faculty of Veterinary Medicine, Chittagong Veterinary & Animal Sciences University, Khulshi, Chittagong-4225, Bangladesh. Phone: +8801735509192; Fax: +880-031-659620; E-mail: tanjila.cvasu@gmail.com

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Abstract: A three years old Holstein Friesian (HF) cow with a history of premature calving was brought to the clinics of Veterinary college and Research Institute, Nammakal. The cow showed protrusion of mass through the vulva after its first calving. On clinical examination animal was apparently healthy and confirmed as uterine prolapse. The Uterine prolapse was corrected manually following proper precautionary measures. To prevent the recurrence, Buhner's suture was applied. Animal had an uneventful recovery.

Keywords: Holstein Friesian cow; uterine prolapse; buhner's suture

1. Introduction

Uterine prolapse is the protrusion of the uterus from the vulva with the mucosal surface exposed (Gustafsson *et al.*, 2004; Kornmatitsuk *et al.*, 2004). Uterine prolapse occurs most often immediately after parturition and occasionally up to several hours afterward. The presence of a part of the fetal membrane in the genital passage induces strong tenesmus and prolapse. Various predisposing factors have been suggested for uterine prolapse in the cow, e.g. hypocalcaemia, prolonged dystocia, fetal traction, fetal oversize, retained fetal membranes, chronic disease and paresis (Risco *et al.*, 1984; Reynolds *et al.*, 1984; Ishii *et al.*, 2010; Aoki *et al.*, 2010). Prolapse of the uterus at post parturient period through the genital passage and its expulsion outside the body is a frequent sequel to protracted dystocia. Uterine prolapse has been recorded in all species of animal, although most commonly seen in pluriparous dairy cows occurring immediately after parturition and occasionally after several hours (Roberts, 1971; Simon *et al.*, 2015). Incidence of post partum uterine prolapse varies from 6.6 % to 12.9 % (Nanda and Sharma, 1982). In the period immediately after prolapse the tissues appear almost normal, but within a few hours they become enlarged and edematous. Some animals will develop hypovolaemic shock, secondary to internal blood loss, laceration of the prolapsed organ or incarceration of abdominal viscera (Ramsingh *et al.*, 2013; Mohan *et al.*, 2013). It is regarded as a veterinary emergency because without treatment, the cow is likely to die (Murphy and Dobson, 2002; Miesner and Anderson, 2008). The method of raising the rear end of the cow using a tractor was reported as a quick, easy and essentially practical method of dealing with a prolapsed uterus (Ishii *et al.*, 2010; Aoki *et al.*, 2010). This case report describes the successful correction of uterine prolapse in a cow.

2. Case presentation & history

The three years old primiparous HF cow was presented with history of protrusion of mass through the vulva since seven hours after parturition. She delivered a male calf. On gynaeco-clinical examination the cow was apparently healthy with moderate tenesmus and the physiological parameters were within the normal range. The prolapsed mass was larger, longer (hanging down to the hocks when standing) (Figure 1), more deep red in

colour and covered with foetal membranes. The prolapsed mass was also edematous, engorged and soiled with faeces, straw, dirt and blood clots.

3. Surgical management

a. General approach

Before to the treatment physical examination was done and recorded the temperature, pulse rate, respiration rate, body weight etc. Blood sample was collected for the estimation of hemoglobin, ESR, total count of RBC, total count of WBC, PCV, lymphocyte, neutrophil, eosinophil, monocyte, basophil, serum calcium, serum magnesium, serum phosphorus, S.GOT and S.GPT.

b. Correction of uterine prolapse

Caudal epidural anesthesia was done with 5ml 2% lignocaine HCl for prevention of straining. Then the partial foetal membrane was carefully separated avoiding damage to maternal caruncles and bleeding. The tissue debris was removed by washing and cleaning the prolapsed mass with water (Figure 2). The prolapsed mass was thoroughly irrigated with 1:1000 potassium permanganate solutions (Figure 3). With gloved and lubricated hand, the everted uterus was pushed through the vagina by manual pressure to regain its normal position (Figure 4 and Figure 5). To prevent further complications, intrauterine four Furea boli were kept in uterus. Re-occurrence of prolapse due to tenesmus was prevented by applying Buhner's suture (Figure 6). The suture was removed after 14 days. The cow recovered uneventfully without any complications (Figure 7).

c. Post operative care

Calcium borogluconate solution [45ml, intravenously], antibiotic [Streptopenicillin, 7.5ml, intramuscularly], antihistaminic [20ml, intramuscularly] and dextrose saline [(20%) 2000ml, intravenously] were injected for 7 days.

3. Results and Discussion

The cow showed good recovery without recurrence and other complications. The suture was removed after two weeks. The incidence of uterine prolapse registered frequently in cattle and sheep (Bhattacharyya *et al.*, 2012; Fazili *et al.*, 2012). It is generally noticed during immediately post-partum especially after dystocia (Sah and Nakao, 2003). But in the reported case, the prolapse was observed in HF cow after normal parturition of a male calf. The objective in the treatment of uterine prolapse was replacement of the organ to its original position and prevention of recurrence. The usual sequel of uterine prolapse is haemorrhage, shock, septic metritis, peritonitis, infertility or death. Bhattacharya *et al.* (2012) reported 9.09% mortality rate and 18.18% cows developed metritis. However, careful removal of dung and dirt materials using potassium permanganate solution prevented the uterine infection in this case as noticed by Simon *et al.* (2015) and Gupta *et al.* (2015). Elevation of hind quarters helps in repositioning of prolapsed uterus with good recovery rate (Ishii *et al.*, 2010; Aoki *et al.*, 2010). It was observed that the hygienic handling, proper management and treatment should definitely prevent further reproductive tract damage and aid in quick recovery.

In this case hematological parameter showed low serum calcium level (7.5 mg/dl) (Table 1) indicating hypocalcaemia. Decreased level of calcium can lead to reduced vaginal and uterine muscle tone which predisposes the animal to prolapse (Noakes *et al.*, 2009). Based on the results of the present study, deficiency of calcium (7.5 mg/dl), magnesium (1.6 mg/dl) and phosphorus (3.2mg/dl) might be the possible factor that leads to prolapse of genital track in cow. Besides biochemical observation, the blood sample was also tested to detect different blood parameters (Table 2). The result showed that there was increased level of ESR (12 mm in 1st hour) and decreased PCV (22%). According to Jain (1986), ESR increases in inflammatory conditions and in acute generalized infection. This result is in agreement with those of Kinney (1967), who stated that the decrease in PCV in prolapsed animals might be due to possible release of antidiuretic hormone as a result of stress.

Table 1. Biochemical blood analysis in cow suffering from uterine prolapse.

Name of the test	Result	Normal Range
Serum calcium	7.5	9.7-12.4 mg/dl
Serum magnesium	1.6	1.8-2.3 mg/ dl
Serum phosphorous	3.2	5.6-6.5 mg/dl

Table 2. Routine blood test in cow suffering from uterine prolapse.

Name of the test	Result	Normal Range
Hemoglobin	8	8-15 gm%
ESR (Wintrobe tube method)	12	6-10 (mm in 1 st hour)
Total count of RBC	5	5-10 million/ cumm
Total count of WBC	6	4-12 thousand/ cumm
PCV	22	24-46%
Lymphocytes	72	45-75%
Neutrophils	25	15-45%
Eosinophils	6	0-20%
Monocytes	3	2-7%
Basophils	1	0-2%

**Figure 1. Hanging prolapsed uterus.****Figure 2. Cleaning the prolapsed mass with water.****Figure 3. Application of potash water in the uterine mass.****Figure 4. Application of lubricant in the uterine mass.****Figure 5. Repositioning the prolapsed mass.****Figure 6. Applying Buhner's suture.**



Figure 7. Recovered cow.

4. Conclusions

Uterine prolapse may appear in peri-parturient period. Diagnosis and treatment of uterine prolapse is very much important task. Delayed in correction may cause some critical condition such as edema, fibrosis, necrosis, septicemia. So the farmers and veterinarians should be careful about early recovery of the condition which will save the cow from life-threatening condition.

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Conflict of interest

None to declare.

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