

## RECURRENT VAGINAL PROLAPSE IN A POSTPARTUM RIVER BUFFALO AND ITS MANAGEMENT

N. Yimer\*, S.Z. Syamira, Y. Rosnina, H. Wahid, K. Sarsaifi, M.M. Bukar and K.C. Yap

### ABSTRACT

This article presents a case report based on a river buffalo cow with a history of recurrent vaginal prolapse following a normal parturition. After clinical examination, the buffalo was diagnosed with first grade vaginal prolapse. Following administration of epidural anesthesia (Lidocaine), the area of vulva was aseptically prepared and a modified boot-lace retention suture was applied using nylon tape to prevent recurrence of the prolapse. Because of a foul smell lochia detected and for prevention of further contamination, antibiotic was administered. The buffalo was also treated with anti-inflammatory drug and drugs useful to help muscle tonicity and retention of reproductive organs in place. Two weeks later suture was removed and the animal recovered successfully with no recurrence reported after that. Though vaginal prolapse in buffalo has been reported to be most common during last trimester of pregnancy or associated with dystocia, the present case shows that it can also occur following normal parturition.

**Keywords:** river buffalo, vaginal prolapse, postpartum, modified boot-lace suture

### INTRODUCTION

Genital prolapse, including vaginal prolapse in ruminants, is considered as an emergency maternal disorder that needs immediate attention before any further complication that can lead to a poor prognosis. Vaginal prolapse in buffalo has been reported to occur mostly during the last trimester of gestation (Sah and Nakao, 2003; Akhtar *et al.*, 2012) or immediately after parturition usually associated with dystocia. However, incidence of vaginal prolapse was reported to be rare after 48 to 72 h of parturition (Roberts *et al.*, 1986; Yotov *et al.*, 2013). Genital prolapse represents the most common disorder in river buffalo followed by retention of fetal membranes and dystocia (Samad *et al.*, 1987). Of the total 42.9% recorded obstetrical problems in buffalo, pre-and postpartum vaginal prolapse accounted for 67.3% and 21.7%, respectively, whereas the remaining 11% exhibited postpartum uterine prolapse (Samad *et al.*, 1987). Prolapse of the vagina is among the major reproductive disorders in buffaloes that severely affect productivity and future reproductive performance through reduced conception rate and prolonged calving interval causing heavy economic losses to farmers (Akhtar *et al.*, 2012).

Handling and treatment of vaginal prolapse varies depending on the duration and severity of

the condition at the time of presentation. A clinical evaluation and grading system for vaginal prolapse in cattle was described by Wolf and Carson (2009), which can be also applied in buffalo. The aim of reporting the present case is to share the response of treatment of a recurrent postpartum vaginal prolapse in river buffalo without prior problem of dystocia and retention of fetal membranes.

### **CASE HISTORY AND DIAGNOSIS**

An adult River Buffalo weighing about 500 kg and with a history of normal calving 5 days before visit was clinically examined. After the day of parturition and with fetal membranes has been removed normally, the owner noticed a mass of the vagina and cervix protruded out and swollen. The owner then attempted to replace back the prolapse in place after reducing the swelling by applying ice. However, the owner noticed the vaginal prolapse coming back again being visible more prominently when the animal was lying down and 5 days later informed the Veterinary Hospital at the Faculty of Veterinary Medicine, Universiti Putra Malaysia for further examination and treatment. Upon physical examination, the buffalo had a body temperature of 38.1°C, bright and alert with pink mucous membrane and capillary-refill-time less than 2 seconds. On gynaeco-clinical examination, lochia with foul smelling discharge was detected. In a standing position, there was no sign of cervical prolapse but with quite redundant ventral aspect of the vagina and lateral wall of the vulva. Therefore based on the history and clinical signs, the case was diagnosed as grade I vaginal prolapse characterized by intermittent prolapse occurring commonly when the animal lying down.

### **TREATMENT AND DISCUSSION**

The objectives of the treatment were to retain the vagina in position and prevent recurrence of the prolapse and possible infection. The buffalo was restrained in a standing position and the site of epidural anesthesia was prepared aseptically. A 4 ml of 2% Lignocaine was injected at sacro-coccygeal junction (Figure 1a) to prevent excessive straining and pain while suturing the vulvar labia. Then, the perineal area including the vulva and posterior portion of the vagina was washed and cleaned by using plain water. After a routine skin preparation was done by scrubbing the perineal area with diluted chlorhexidine and wiped with alcohol and povidone iodine, a modified boot-lace retention suture using a nylon tape without using eyelets such as hog rings or sutures was applied. Prior use, the tape was soaked in diluted chlorhexidine for disinfection. Before the suture was applied, 3 parallel stab incisions were made on both sides of the perivulvar area starting near the dorsal commisure of the vulva (Figure 1b). Starting from the top, both ends of the tape was then threaded through the tissue in the opposite direction using Buhner's needle apposing the vulval lips and a note was made leaving ventrally 1/3 of the vulval opening for urination and discharge of lochia (Figure 1c, d, e).

As part of the medical treatment, penicillin-streptomycin (Pen-Strep) 1 ml/25 kg, 25 ml, deep IM SID was administered as a prophylaxis and treatment of bacterial infection. Oxytocin 3 ml, IM, once was given to increase uterine muscle tone and promote evacuation of lochia. Theracalcium 20 ml, IM, once was also given as supportive therapy for possible deficiency of calcium and to promote uterine muscle tone. Lower calcium concentrations were reported in buffaloes suffering from vaginal

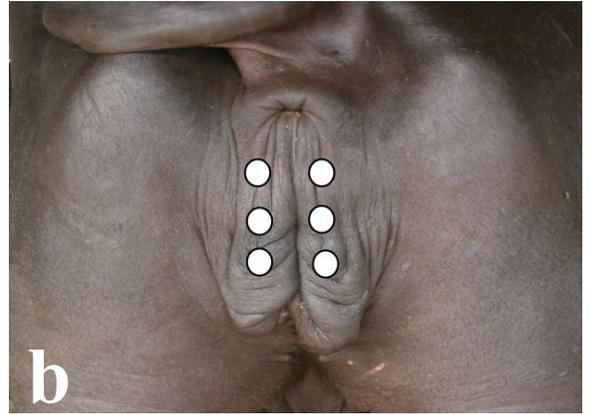


Figure 1. a) Injection of epidural anesthesia. b) Sites of stab incisions on both sides of vulva. c) Buhner's needle penetrating through vulva. d) Threading the nylon tape through the stab incisions in opposite direction and placing boot lace suture like pattern. e) End of suture with note at the end and leaving an opening of the vulva at ventral aspect.

prolapse (Mandali *et al.*, 2002; Ahmed *et al.*, 2005). Lastly, Flunixin Meglumine 1.1 mg/kg, IM once was also prescribed as an anti-inflammatory and analgesic. The buffalo showed excellent response to the treatment and the suture was removed after 2 weeks. The animal recovered successfully and no recurrence of vaginal prolapse was noted even when the animal is lying down. In addition, there was no subsequent infection after the vaginal prolapse.

The success of treatment of vaginal prolapse depends on many factors including the duration, severity of damage due to traumatic laceration, bacterial contamination and involvement of other organs such as cervix and urinary bladder (Miesner and Anderson, 2008; Beheshti *et al.*, 2011; Yotov *et al.*, 2013). The current case was presented as minor degree of recurrent prolapse without much complication and hence response to treatment was quite good. Four grades of vaginal prolapse ranging from intermittent type that commonly occurs while the animal is lying down (Grade I) to a more severe form of prolapse characterized by additional problems of trauma, infection and necrosis, have been described in cattle (Wolfe and Carson, 1999).

There is high chance of grade I prolapse to advance to more severe forms if left untreated immediately. In the current case, we believe that the farmer's initial attempt to replace the prolapse by reducing the swelling using ice probably have helped to prevent further complications and contributed to the treatment success. The involvement of the farmers as in this case is something to be encouraged; however, they need to be educated on proper and hygienic handling of the prolapse to prevent contamination. We suspected the foul smell lochia, a possible indication of uterine infection, encountered partly as a consequence of unhygienic handling of the prolapse when they

replace it first time. Azawi *et al.* (2007) reported 2.4% of buffaloes with vaginal prolapse were predisposed to uterine infections. Gram negative anaerobes and other facultative pathogens including *Arcanobacterium pyogenes* have been indicated to cause uterine infections (Dharani *et al.*, 2010). This indicates also the importance of prescribing antibiotics during treatment of vaginal prolapse.

One of the objectives of treatment of vaginal prolapse is to prevent recurrence. Various techniques such as rope truss (Dharani *et al.*, 2010), horizontal mattress suture (Singh *et al.*, 2011) and Buhner's suture (Hooper, 2007; Yotov *et al.*, 2013) are among the techniques reported before; Buhner's suture being the most commonly used. In the present case we used a modified boot-lace suture using nylon tape as retention suture to prevent recurrence and worked successfully. Compared to the Buhner's suture, this technique appears to be easier to apply and doesn't impair much blood circulation and cause edema. Buhner's technique is basically a purse string type suture and it can impair circulation and induce oedema, which in turn may result in cellulitis and infection of vulva (Hooper, 2007).

Exact etiological factors of vaginal prolapse had not been ascertained (Dharani *et al.*, 2010) however it appears to be multifactorial. Relaxation of pelvic ligament and surrounding soft tissues and alterations in antepartal metabolism of vaginal connective tissues have been quoted as main reasons for vaginal prolapse that commonly occurs during the last months of pregnancy (Ennen *et al.*, 2011 and Yotov *et al.*, 2013). Among the predisposing factors that have previously suggested include high levels of estrogens around parturition, increased intra-abdominal pressure (Roberts, 1986), altered micro- and macro mineral metabolism (Bhatti *et al.*, 2006), foods

containing phytoestrogenic substances (Miesner and Anderson, 2008) and genetic predisposition. The present case encountered following a normal parturition and with no history of retention of fetal membranes. Based on the response to the treatment and the history, relaxation of pelvic ligaments and surrounding tissues and deficiency of macrominerals especially calcium linked to pregnancy and milk production could be the most likely predisposing factors of the current vaginal prolapse.

In conclusion, the current case is an evidence for the occurrence of vaginal prolapse in buffalo during the postpartum period with no history of dystocia or retention of fetal membranes. It also demonstrates the importance of farmers in providing first aid to emergency vaginal prolapse and preventing further complications and the need to educate them on proper handling while waiting for a veterinarian to attend the case. Moreover, the case also demonstrates the role of modified boot-lace suture without using eyelets that can be applied easily for the treatment and prevention of recurrence of grade I vaginal prolapse, together with other medical supportive therapies.

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