

CAESARIAN SECTION AS A LAST RESORT TO TREAT A NON REDUCIBLE  
CERVICO-VAGINAL PROLAPSE IN FULL TERM PREGNANT  
PLURIPAROUS BUFFALO COW: A CASE REPORT

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**ABSTRACT**

A twelve years old pluriparous cow was subjected to a complete vaginal prolapse since 48 h with lacerated, dry and edematous cervico-vaginal mucosa. Several trials to reduce the prolapsed part using ordinary manual replacement were imposed but failed due to the large size of the prolapsed part and the increased abdominal pressure due to full term pregnancy occupying the abdominal cavity leaving no space to the prolapsed part. Caesarian section was suggested as a last resort to treat the prolapse. Left upper flank approach for the caesarian section was performed in the standing position. After extracting the dead fetus, the prolapsed part was replaced and settled.

The vulval lips were sutured using sterile gauze tape and Gerlach needle. The operated cow was followed and its future fertility was assured 3 months later with no further complications. It can be suggested that caesarian section can be the last resort to treat old non reducible vaginal prolapse in full term pregnant buffalo cow.

**Keywords:** *Bubalus bubalis*, buffalo, cervico vaginal prolapse, reduction, full term of pregnancy, Cesarean section

**INTRODUCTION**

Prolapse of the vagina means outward protrusion of the vaginal floor, the lateral walls and a portion of the roof of the vagina through the vulvar lips. Rarely, the entire vagina and cervix (identifiable by the cervical rings) are prolapsed out through the vulva. The basic cause appears to be the weakening or relaxation of the constrictor vestibuli muscle and atony of the vaginal musculature. Prepartum vaginal prolapse is by far the most common maternal gestational complication in the water buffalo (Nanda and Sharm, 1982). Cervico-vaginal prolapse is less common in buffalo compared to the vaginal prolapse (Khan *et al.*, 1984; Shah and Nakao, 2003). The incidence of prepartum cervico-vaginal prolapse has been described to be higher (3 to 13%) in water buffalo (Shah and Nakao 2003; Pandey *et al.*, 2006). Vaginal prolapse occurs during the last 2 to 3 months of pregnancy. It is probably due to softening of the tissue resulting from increased estrogen concentration during the last part of pregnancy (Ali and Derar, 2015; Kumar *et al.*, 2015). Most of vaginal prolapses concern older females and females in very good body condition. Etiologic factors of prepartum vaginal prolapse in

buffaloes may be attributed to nutritional imbalance, hormonal imbalance, seasonal-managemental factors and hereditary predisposition (Bhatti *et al.*, 2006). Prepartum vaginal prolapse often terminate in uterine prolapse post-partum resulting from the influence of parturition.

The prolapsed vagina is sometimes limited and visible only when the female is in the sitting position. However, with increased inflammation and edema of the tissue, the prolapsed part of the vagina increases in size and becomes permanently exteriorized. Prolonged periods of prolapse lead to increased inflammation of the prolapsed tissue and even severe necrosis of the vaginal mucosa. The prognosis for the life of the fetus and dam is relatively good if the condition is treated early. Treatment consists of replacing the prolapsed part of tissue after cleaning it with a mild antiseptic solution or physiological saline and maintaining it in place with a vulvar suture using Gerlach needle and gauze or by Buhner method. More advanced cases of prolapsed vagina with increased tenesmus may require epidural anesthesia. The animal should be monitored regularly and the suture removed if signs of impending parturition are observed. In the present report, a case of non reducible cervico-vaginal prolapse in a multiparous buffalo cow is presented and its handling is discussed.

## CASE HISTORY AND CLINICAL OBSERVATION

A twelve years old multiparous non-lactating buffalo cow was admitted to the Veterinary teaching clinic of Assiut University with a main complain of a 48 h long standing large and voluminous cervico-vaginal prolapse. The

cow is full term pregnant and signs of approaching parturition were obvious including relaxation of the pelvic ligaments, enlargement of the udder and erection of the teats. Colicky pain and straining started since 3 days followed by the prolapse of the cervico-vaginal part of the tract. The prolapsed part was neglected till the admission to the clinic. General health examination of the animal was carried out to ensure systemic involvement. The animal was hypothermic and restorative fluid (normal saline and Dextrose solutions) was recommended before handling the prolapsed part. The fetus was diagnosed dead using both rectal and ultrasonographic examinations and its anterior extremities were palpated in the pelvic cavity prepared for normal delivery. The prolapsed part was edematous, large, dry, and voluminous. The outer mucous membrane was leathery and had spongy texture. The cervical plug was removed and one or two fingers could be lodged in the external cervical os (Figure 1).

## CLINICAL MANAGEMENT

Manual trials were exerted (Figure 2) to reduce the prolapsed part after posterior epidural anesthesia and application of 10% tannic acid solution.

However, the trials failed to reduce the size of the prolapsed part or to replace it inside the pelvic cavity. A decision had been made for the extraction of the fetus through a cesarean section. The decision had been taken due to the lack of cervical plug and the probability of secondary infection raised the concern of systemic involvement due to the expected fetal decomposition. After that, the reduction of the prolapse was assisted through the laparotomy incision (Figure 3).

After the extraction of the fetus through laparohysterotomy, the prolapsed vagina was replaced inside the pelvic cavity with assistance from the surgical incision (Figure 4).

A vulval suture then followed to prevent

recurrence of the prolapse using Gerlach needle and gauze in an interrupted mattress suture fashion (Figure 5).

Post-operative treatment included administration of systemic antibiotic (procaine



Figure 1. A long standing untreated vaginal prolapse in a 12 years old multiparous buffalo cow. Note the dry lacerated leathery prolapsed vagina and the external cervical OS (arrow).



Figure 2. Trials to reduce the prolapsed part after posterior epidural anaesthesia and application of astringent (tannic acid solution on the wrapped prolapsed vagina without success).



Figure 3. Delivery of the dead fetus through laparohysterotomy.



Figure 4. Reduction of the prolapsed part through the caudal aspect of the animal assisted by traction of the posterior tract via the abdominal incision.



Figure 5. Vulval suture using Gerlach needle and Gauze to prevent the recurrence of the prolapse.

penicillin 30000 IU/kg and dihydrostreptomycin 10 mg/kg, Pen Sterpt, Norbrook, Northem, Ireland) and anti-inflammatory (phenylbutazone 4.4 mg/kg, Phenylarthritis, Vetoquinol, Lure-France) were administered, im, daily for 5 and 3 days, respectively. The animal received 50 IU oxytocin to help the uterine involution. The female fetus weighed 40 kg and delivered dead. The mother animal kept under observation for one week and milked daily. Three months later, the animal showed estrus, mated by a fertile bull and got conceived.

## DISCUSSION

The current report presented an old long standing case of pre-parturient cervico-vaginal prolapse which was not possible to be treated without the surgical intervention to extract the fetus to provide a roomy space for the reduction of the prolapsed vagina inside the already occupied pelvis by the large size of the full term fetus.

Postulated etiologies for a higher incidence of prepartum vaginal prolapse in water buffaloes at some locations include low levels of plasma copper, selenium and zinc, low levels of serum calcium and phosphorus (Bhatti *et al.*, 2006) and increased levels of plasma estradiol during late gestation cause relaxation of the pelvic ligaments and adjoining structures (Kumar *et al.*, 2009). When the animal lies down the intra-abdominal pressure (especially during pregnancy) is transmitted to the flaccid pelvic structures tending to force the relaxed and loosely attached vaginal floor and walls through the vulva. Anatomic features of buffaloes prone to vaginal prolapse include high placement of the tail, short pelvis inclined towards the caudal end, scythe-shaped limbs and the pelvic floor which is much shorter than the extension of the vagina (Ali and Derar, 2015). Less common etiological factors described for vaginal prolapse in the buffalo include vaginitis and urinary tract infection. A hereditary predisposition to prolapse is known in buffalo although the heritability is

considered to be low.

The pathogenesis and development of the prolapse is progressive; it starts with the exposure of some of the vaginal mucous membrane. The prolapsed mass moves in and out as the buffalo gets up and lies down. The exposed mucous membranes dry out and become irritable, leading to straining and greater exposure of the mass. The prolapsed tissues become edematous, leading to further circulatory impairment and more swelling. Ultimately the cervix and occasionally the intestines and bladder may become involved (Veeraiah and Srinivas, 2010). When the prolapsed mass remains outside its normal location, it becomes progressively inflamed and edematous. A prolapse may sometimes recover spontaneously after parturition; however it is likely to reoccur in subsequent parturitions (Purohit, 2009). The method of treatment selected for handling prolapse of the vagina and cervix will vary with the severity of the condition, the stage of pregnancy and the ability of the owner to care for and observe the animal until after parturition. Replacement of the prolapse back to its normal position should be the first objective of therapy. The use of epidural anesthesia in reducing straining before replacement must be limited to some specific cases as epidural anesthesia would diminish the genital contractions that are helpful in repositioning of the organ after replacement. The objective of treatment is to maintain the organ in its normal position till a normal parturition. Thus a vulvar truss is of practical value in pregnant dairy buffaloes and is a frequently used method for prevention of recurrence of cervico vaginal prolapse (Kumar and Singh, 2009).

A wide variety of suture patterns have been suggested for retaining the prolapsed organ in place including the Buehner suture, the bootlace suture, flessa sutures, and an interrupted horizontal

mattress pattern suture. Often, when the care after placement of these sutures is not proper, or the straining is violent, the sutures do not hold well, frequently resulting into tearing of tissues and/or contamination of the suture area. Umbilical tape is useful for purse string sutures commonly used in buffalo (Ali and Derar, 2015). Constant straining is a common problem after replacement of the prolapsed organ. The use of proper lubrication, anesthetic jellies, emollient creams and mild sedatives before replacement often reduce this straining. Other methods suggested to reduce straining include epidural anesthesia.

In the present case, a CS to extract the fetus had been decided after the failure of manual reduction of the prolapsed part. It has been reported earlier that termination of pregnancy in advanced pregnant buffaloes with recurrent cervico-vaginal prolapse is recommended (Murugeppa, 1998). Caesarian section is a radical procedure in such cases regardless the fetus is live or dead after the cervical seal has been removed. Concerns about secondary infection after cervical dilatation are crucial factors in this respect. In such cases the surgical interference to extract the fetus is considered emergency treatment and life saving procedures.

In spite of many techniques described, the therapy of prepartum vaginal prolapse is sometimes imperfect. The more promptly the prolapse is replaced and ample care provided, the more is the likelihood of therapeutic efficiency, and similar views has been expressed by other workers (Shah and Nakao, 2003; Kumar and Singh, 2009). Care of animals with prolapse include little exercise, feeding of less bulky diets, avoidance of estrogenic feeds (if being fed) and frequent observation of these animals. On the light of the present report we suggest that the extraction of the fetus in full

term buffalo cow is recommended in non reducible cervico-vaginal prolapse. It is considered as an emergency treatment and life-saving procedure.

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