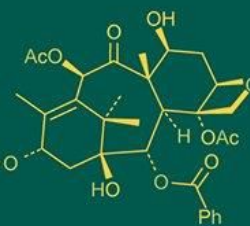
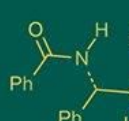


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Post-partum cervico-vaginal prolapse in a primiparous cow: Clinical intervention and outcome

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Abstract

Cervico-vaginal prolapse is the protrusion or eversion of the vagina along with the cervix through the vulva and is most commonly observed during the final weeks of pregnancy or a few months before calving. The condition is often associated with increased intra-abdominal pressure during pregnancy, hypocalcemia, and hormonal imbalances. A 3-year-old non-descript cow, which had calved 36 hours prior, had a history of straining and an edematous prolapsed mass hanging from the vulva, which appeared soiled, swollen, and reddish-pink in color. The animal was diagnosed with third-degree postpartum cervico-vaginal prolapse. The cow was restrained, and epidural anesthesia was administered to reduce straining and facilitate manipulation of the prolapsed tissue. The prolapsed mass was washed with a 1% potassium permanganate solution, hypertonic salt solution and gently repositioned back into its normal anatomical position. To prevent recurrence, a vulval retention suture was applied. Following the correction, the cow received supportive therapy, including antibiotics, antihistamines, analgesics, calcium supplementation, and fluid therapy for three days, which resulted in a favorable recovery. The suture was retained for seven days and removed once straining had ceased. The cow was monitored for one week and recovered successfully without further complications.

Keywords: Cervico-vaginal prolapse, epidural anaesthesia, post partum, retention suture

Introduction

Reproductive disorders in dairy animals have a substantial negative impact on both productivity and reproductive efficiency. Among these conditions, cervico-vaginal prolapse is regarded as a significant reproductive problem due to its detrimental effects on fertility, including delayed or irregular postpartum estrus, reduced conception rates, and prolonged inter-calving intervals (Sharma *et al.*, 2025) [12]. Cervico-vaginal prolapse refers to the displacement of the vaginal wall together with the cervix, resulting in their protrusion through the vulva and exposure of the vaginal mucosa to the external environment (Arthur, 2001) [1]. Cervico-vaginal (CV) prolapse is frequently encountered in cows, buffaloes, and sheep (Vaid *et al.*, 2018) [14]. Its occurrence has been extensively documented in cows (Arthur *et al.*, 1989; Roberts, 1971) [2, 10]. This condition is most frequently observed during the late stages of gestation or following parturition (Rasool *et al.*, 2022) [9]. Studies have indicated that prolapse of the cervix and vagina occurs more frequently in pluriparous animals, which may be attributed to weakening of the uterine ligaments and laxity of the vaginal tissues (Sharma *et al.*, 2025) [12]. The precise cause of cervico-vaginal prolapse remains unclear, as the condition is influenced by several predisposing factors. The most common predisposing factors for cervico-vaginal prolapse include endocrine disturbances, hypocalcemia, and increased intra-abdominal pressure during late gestation, and excessive perivaginal fat deposition (Umesh *et al.*, 2016) [13]. The condition is most frequently observed during the terminal phase of pregnancy or shortly after parturition. Additional contributing factors reported include calcium deficiency or imbalance in the calcium-to-phosphorus ratio, selenium deficiency, and chronic genital infections that lead to persistent irritation of the reproductive tract (Parikh *et al.*, 2018) [8]. Studies have shown a higher prevalence of prolapse in animals with elevated estrogen and reduced progesterone levels, especially during the final two weeks of gestation (Henricks *et al.*, 1972) [6]. Diets containing estrogenic compounds, such as clover pasture, soybean meal, or moldy maize and barley, may also contribute to a higher risk of genital prolapse (Bhattacharyya *et al.*, 2012) [4].

In cattle, postpartum vaginal prolapse generally develops due to excessive straining associated with vaginal injury or infection, often following difficult calving. Early clinical signs include repeated straining and partial protrusion of the vaginal mucosa. In advanced or neglected cases, the prolapse may involve the entire anterior vagina and cervix. The exposed tissue commonly becomes soiled, swollen and edematous, making it vulnerable to trauma and secondary infections, which further intensify the straining response (Roberts, 1971) ^[10]. Untreated cases may result in severe complications such as tissue edema, ischemia, lacerations, hemorrhage, systemic shock, and even death (Selvaraju *et al.*, 2019) ^[11]. However, timely intervention can lead to successful correction using relatively simple therapeutic approaches (Umesh *et al.*, 2016) ^[13]. This article presents a case report on the successful management of postpartum cervico-vaginal prolapse in a primiparous non-descript cow.

History and Clinical Examination

A recently calved three-year-old primiparous non-descript cow, was presented with history of straining, during which part of the vagina and cervix were hanging outside vulva. The cow gave birth to a male calf 36 hrs before. The feed and water intake, urination, defecation were normal. On clinical examination, the temperature of the cow (38.4 °C), heart rate and respiration rate were normal. The protruding mass was observed to be soiled, edematous, swollen, and reddish-pink in color (Fig. 1). The animal showed severe, persistent tenesmus. Based on the history and findings from clinical examination, the condition was diagnosed as third degree post partum cervico-vaginal prolapse.

Treatment

To minimize straining and facilitate manipulation, low caudal epidural anesthesia was administered to cow using 5 ml of 2% lignocaine. The prolapsed mass was thoroughly cleansed with 1% potassium permanganate solution and rinsed with a hypertonic saline solution (Fig. 2) to osmotically reduce edema and facilitate easier repositioning of the mass. With adequate lubrication, the prolapsed uterus was gently and carefully repositioned (Fig. 3), ensuring that all structures, including the cervix, were completely restored to their normal anatomical position. Following this, a vulval retention suture (Fig. 4) was applied to minimize the risk of recurrence.

Supportive and therapeutic management included intravenous administration of calcium borogluconate (350 ml Slow i/v) and Ringer's lactate (1.5 l). Antimicrobial therapy was given with strepto-penicillin at a dose of 12.5

mg/kg intramuscularly. Chlorpheniramine maleate (0.5 mg/kg i/m) and meloxicam (0.2 mg/kg i/m) were administered to control inflammation and discomfort. Additionally, vitamin B-complex (10 ml i/m) was given for three consecutive days. By the third day of treatment, the animal made a complete recovery. After seven days, vulval retention sutures were removed.

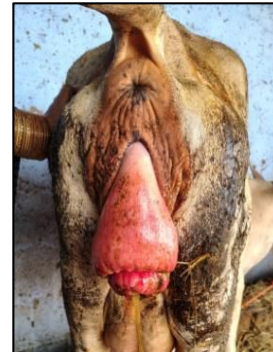


Fig 1: Prolapsed cervix and vagina



Fig 2: Washing the mass with hypertonic salt solution



Fig 3: Replacement of prolapsed mass



Fig 4: After applying vulval retention sutures

Discussion

Vaginal prolapse is a hereditary, chronic and recurrent condition that can lead to significant economic losses for farmers by affecting milk production in cows. This condition is considered an emergency and requires immediate attention to prevent further complications. Major factors contributing to cervico-vaginal prolapse include increased intra-abdominal pressure, excessive relaxation of pelvic ligaments and vaginal muscles due to elevated estrogen levels, and hypocalcemia. It most commonly occurs during the last trimester of pregnancy, particularly in pluriparous cows, compared to heifers (Noakes *et al.*, 2009)^[7]. Prompt treatment can help minimize complications, whereas delayed intervention may result in swelling, necrosis, inflammation of the prolapsed tissue, and even myiasis leading to a poor prognosis. The outcome of vaginal prolapse treatment depends on several factors, including the duration of the prolapse, the extent of tissue damage from trauma or lacerations, bacterial contamination, and involvement of other organs such as the urinary bladder (Beheshti *et al.*, 2011)^[3]. Genital prolapse can lead to septicemia and is therefore considered a potentially life-threatening condition (Bhattacharya *et al.*, 2007)^[5].

Epidural anesthesia is essential before manipulating the prolapsed tissue to control tenesmus. A caudal epidural block using 2% lignocaine hydrochloride provides effective regional analgesia, reducing straining and facilitating the repositioning of the protruded organs (Noakes *et al.*, 2009)^[7]. Several surgical techniques have been found effective for managing cervico-vaginal prolapse, including the rope truss method, horizontal mattress suturing, the modified Minchev's approach and Buhner's suture technique (Sharma *et al.*, 2025)^[12]. Supportive therapy with antibiotics helps prevent or control secondary bacterial infections, while anti-inflammatory and antihistaminic medications alleviate pain and inflammation. Cervico-vaginal prolapse imposes economic losses on farmers, making prompt intervention crucial. Timely repositioning of the prolapsed tissue, combined with the administration of antibiotics, anti-inflammatory drugs, antiallergic agents, and multivitamin-mineral supplements, promotes faster and more effective recovery. In contrast, delayed treatment can result in severe edema, necrosis, fatal septicemia, and a poorer prognosis (Bhattacharya *et al.*, 2007)^[5].

Cervico-vaginal prolapse is a significant reproductive disorder that results in economic losses for farmers. Early intervention minimizes complications, whereas delayed treatment leads to increased edema and tissue necrosis, resulting in a poorer prognosis. Successful recovery is achieved through timely repositioning of the prolapsed mass combined with appropriate therapeutic management, including the administration of antibiotics, anti-inflammatory and antiallergic drugs, as well as multivitamin and mineral supplementation.

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