Case Report

Animal Reproduction Update
Year 2026, Vol.6 (1)

Successful Pharmacological Induction of Parturition in a Primiparous Holstein Friesian Crossbred Cow with Prepartum Vaginal and Rectal Prolapse: A Case Report

Al Wasef[1], **Md Rashedul Islam**[2], **Radisa Islam**[3], **Most Sumaiya Binte Shahid**[3], **Rupsana Perven Borsha**[4] and **Uday Kumar Mohanta**[1*]

[1]Department of Microbiology and Parasitology, Faculty of Animal Science and Veterinary Medicine, Sher-e-Bangla Agricultural University, Dhaka-1207, Bangladesh

[2]Department of Surgery and Theriogenology, Faculty of Animal Science and Veterinary Medicine, Sher-e-Bangla Agricultural University, Dhaka-1207, Bangladesh

[3]Faculty of Animal Science and Veterinary Medicine, Sher-e-Bangla Agricultural University, Dhaka-1207, Bangladesh

[4]Department of Anatomy, Histology and Physiology, Faculty of Animal Science and Veterinary Medicine, Sher-e-Bangla Agricultural University, Dhaka-1207, Bangladesh

***Correspondence:** <ukmohanta.mipa@sau.edu.bd>

Received: 8 February 2026 **Accepted:** 29 June 2026 **Published:** 2026

DOI: https://doi.org/10.48165/aru.2026.6.01.03

ABSTRACT

A two-and-a-half-year-old primiparous Holstein Friesian crossbred dairy cow was presented at the Upazila Veterinary Hospital, Manoharganj, Cumilla, Bangladesh. The affected dam exhibited vaginal prolapse and secondary rectal prolapse associated with persistent abdominal straining for eighteen hours. Moreover, per vaginal examination, the confirmed closed cervix and the prolapsed tissues were edematous and exposed, requiring immediate intervention. As the cow was full-term pregnant, pharmacological induction of parturition was initiated using cloprostenol sodium and dexamethasone to relieve intra-abdominal pressure and facilitate fetal expulsion. Labor commenced approximately 24 hours post-induction. The calf's head was deviated downwardly, and it was corrected manually. Then, an alive male fetus was born with assistance. Following treatments, the cow recovered uneventfully, with spontaneous retraction of the prolapsed tissues and no recurrence of uterine prolapse. This case underscores the clinical value of timely parturition induction in managing advanced vaginal prolapse and preventing severe maternal complications in late-gestation dairy cows.

Keywords: Primiparous; Induction parturition; Vaginal prolapse; Rectal prolapse; Clorprostenol; Dexamethasone

INTRODUCTION

Induction of parturition in cattle is a valuable obstetrical intervention used in the management of late-gestation complications such as prolonged gestation, hydropic conditions, fetal abnormalities, and maternal health threats (Noakes et al., 2019). Among these complications, vaginal prolapse is a common and potentially life-threatening condition in cows, particularly in dairy breeds such as Holstein Friesians (Tuji and Kitessa, 2021). Antepartum vaginal prolapse in animals is a serious condition that can result in significant production losses and may lead to the death of both the newborn and the mother if not promptly and properly managed (Islam and Khan, 2010). Vaginal prolapse occurs due to elevated estrogen and relaxin, increased intra-abdominal pressure, weakened pelvic support structures, and anatomical predispositions (Jackson, 2004; González-Martín et al., 2026). When the prolapse becomes severe and irreducible, it leads to further complications such as trauma, bacterial infection, or even secondary rectal prolapse (Jackson, 2004;

Hasan et al., 2017). In such circumstances, the timely induction of parturition facilitates fetal delivery and relieves continuous pressure and strain, thereby allowing easier management of the prolapsed tissues (Roberts, 1986). The success of parturition induction depends on the proper selection of pharmacological agents. Cloprostenol sodium, a prostaglandin $F_2\alpha$ analogue, induces luteolysis and cervical softening, while dexamethasone mimics a fetal cortisol surge, triggering parturition (Lewing et al., 1985). The combined use of these agents is effective in the induction of parturition within 24–72 hours when the fetus is viable and the placenta responsive (Noakes et al., 2019). The use of parturition induction and subsequent obstetrical management helped prevent further complications and ensured a favorable outcome. This case report presents a unique scenario of a primiparous Holstein Friesian cow at term with a closed cervix and concurrent severe vaginal and rectal prolapse.

Case history and diagnosis

A two-and-a-half-year-old Holstein Friesian primiparous cow, approx. weighing 205±5 kg, based on breeding records, was expected to calve (282 days) and was presented to the Upazila Veterinary Hospital with an eighteen-hour history of continuous and forceful abdominal straining (Fig. 1A). The owner reported progressive protrusion of vaginal tissues for the last three days (Fig. 1A). However, the cow was straining severely for eighteen hours, now accompanied by mild rectal prolapse, despite the absence of active labor pain (Fig. 1B). On clinical examination, the cow exhibited second-degree vaginal prolapse, where the entire vaginal wall was exteriorized and congested, accompanied by mild rectal prolapse. The prolapsed tissues were grossly edematous, erythematous, and contaminated with feces. After vaginal examination, the cervix remained tightly closed, and no fetal parts were palpated. Prevaginal examination revealed a full-term pregnancy without cervical dilation. Fetal movements were sluggish when it was palpated. However, the cow appeared visibly distressed, anorexic, and reluctant to rise. Based on these findings, the case was diagnosed as a full-term pregnancy complicated by failure of cervical dilation and a third-degree vaginal prolapse, along with a rectal prolapse. After observing the cows' conditions, immediate induction of parturition was performed to avert further complications and expedite delivery.

Fig 1. A: Severe abdominal straining B: Vaginal prolapse induced rectal prolapse

Fig 2. A: Manual traction of a live fetus B: Delivered a male live fetus

Obstetrical management

Prolapsed tissues were thoroughly lavaged with diluted povidone-iodine (Viodin-10 Vet, Square, Bangladesh). Cold therapy was applied intermittently to reduce edema and inflammation. Then, a caudal epidural anesthesia was administered using 5 ml of 2% lignocaine hydrochloride (G-Lidocaine, Gonoshasthaya, Bangladesh) to control tenesmus and facilitate obstetrical manipulations. Following adequate anaesthesia, the everted tissue was carefully repositioned to its normal anatomical position. A Buhner's suture was not applied, considering the cow was in first-time parturition and imminent delivery was anticipated. Subsequently, 2 ml of cloprostenol sodium (Prostenol, Tecno, Bangladesh) was administered intramuscularly into the neck muscle to promote cervical dilation and uterine contractions. Dexamethasone (Dexavet, Tecno, Bangladesh) was administered in double doses (40 ml), with half injected intramuscularly and the rest intravenously, to accelerate the induction process. Approximately 24 hours following the induction protocol, the cow began demonstrating characteristic signs of active labor, including vigorous abdominal contractions, elevation of the tail, restlessness, and rupture of the allantoic sac, which confirmed the onset of the second stage of parturition. Subsequent vaginal examination revealed a partially dilated cervix; however, progression of labor was hindered due to a downward deviation of the fetal head. Under strict aseptic precautions, the birth canal was generously lubricated with sterile obstetrical jelly to facilitate smooth manipulation and reduce trauma. After detailed obstetrical observation confirmed that the forelimbs were in the extended posture, but the head was sharply deviated ventrally. Then, the deviated head was elevated dorsally into alignment with the extended forelimbs (Fig. 2A). Gentle traction was continued, and a live male fetus was finally delivered (Fig. 2B). Following, metronidazole was inserted into the uterus to prevent uterine infections. The cow was treated with antibiotic, Ceftriaxone (Triject 2g, SK+F, Bangladesh); NSAID, Meloxicam (Camlox, Popular, Bangladesh); and antihistamine, Diphenhydramine HCl (Phenadryl vet,

ACME, Bangladesh) for 3 days. Finally, the cow recovered uneventfully after 3 days.

DISCUSSION

This case presents a classical yet complex obstetrical emergency in bovine practice, the concurrent occurrence of vaginal and rectal prolapse in a late-gestation dairy cow. While vaginal prolapse alone is relatively common in the third trimester of pregnancy, it can lead to uterine prolapse following delivery (Wasef et al., 2025). Estrogenic stimulation during the final stages of pregnancy leads to relaxation of the pelvic ligaments and softening of the vaginal tissues, rendering them more susceptible to prolapse under increased intra-abdominal pressure (Jackson, 2004). When rectal prolapse occurs alongside it, it typically results from intensified tenesmus or continuous straining, as the animal attempts to expel the prolapsed vaginal tissue (Chauhan et al., 2025). Therefore, a shift toward pharmacological induction of parturition was warranted. The induction protocol employed, involving dexamethasone and cloprostenol, aligns with standard veterinary obstetric practices (Wilson et al., 2025; Rabidas et al., 2015). A similar protocol was followed by a previous report from India (Islam and Khan, 2010). This pharmacologic combination is widely regarded as safe and effective, particularly in near-term cows where the fetal viability is still intact. However, dystocia remains a common risk following induction, particularly in heifers or primiparous cows, where the birth canal has not undergone prior stretching, and malposture or fetal oversize can impede normal delivery (Tsaousioti et al., 2024). Furthermore, this case highlights the need for postpartum monitoring, as cows with a history of vaginal prolapse are at higher risk of recurrence of uterine prolapse or delayed uterine involution.

CONCLUSION

This case highlights the successful management of a severe vaginal and rectal prolapse in a late-gestation dairy cow through the timely induction of parturition with cloprostenol and dexamethasone, resulting in a favourable outcome for both the dam and the fetus. Successful correction of such cases contributes to improved animal welfare, reduced culling rates, enhanced reproductive efficiency, and sustained milk production in Bangladesh or other developing countries.

ACKNOWLEDGEMENTS

The authors are grateful to the Upazila Livestock Officer (ULO) and staff, Upazila Livestock Office and Veterinary Hospital, Manoharganj, Cumilla, Bangladesh, for their support during the study.

CONFLICT OF INTEREST

There is no conflict of interest for the publication of this case study

AUTHOR'S CONTRIBUTION

Al Wasef handled the case, wrote the manuscript, and edited the manuscript. Md. Rashedul Islam reviewed the manuscript. Radisa Islam, Most Sumaiya Binte Shahid, Rupsana Perven Borsha wrote the manuscript. Uday Kumar Mohanta supervised and reviewed the manuscript. All authors checked and confirmed the last edition of the submitted manuscript.

REFERENCES

Chauhan, P. M., Prajapati, A. S., Kumar, R., & Prajapati, R. D. (2025). Uterine and rectal prolapse. In T. Rana (Ed.), *Elements of reproduction and reproductive diseases of goats* (pp. 379–391). Wiley. https://doi.org/10.1002/9781394190089.ch32

González-Martín, J. V., Blanco, S. A., & Revilla-Ruiz, Á. (2026). Vaginal prolapse in cows. In J. Simões (Ed.), *Encyclopedia of livestock medicine for large animal and poultry production* (pp. 1423–1427). Springer Nature Switzerland. https://doi.org/10.1007/978-3-031-61549-8_112

Hasan, T., Azizunnesa, Parvez, M. A., Paul, P., Akter, S., Faruk, M. O., & Hossain, D. (2017). Correction and management of vaginal prolapse in a cow by Buhner's technique. *Research Journal for Veterinary Practitioners, 5*(1), 1–4. http://dx.doi.org/10.17582/journal.rjvp/2017/5.1.1.4

Islam, R., & Khan, M. Z. (2010). Induction of parturition in a heifer with chronic cervico-vaginal prolapse and prolonged gestation. *Veterinary Practitioner, 11*(2), 142–143.

Jackson, P. G. G. (2004). *Handbook of veterinary obstetrics* (2nd ed., pp. 209–231). Saunders.

Lewing, F. J., Proulx, J., & Mapletoft, R. J. (1985). Induction of parturition in the cow using cloprostenol and dexamethasone in combination. *Canadian Veterinary Journal, 26*(10), 317–322.

Noakes, D. E., Parkinson, T. J., & England, G. C. W. (2019). *Veterinary reproduction and obstetrics* (10th ed., pp. 216–233). Saunders.

Rabidas, S. K., Gofur, M. R., Juyena, N. S., & Alam, M. G. S. (2015). Controlled induction of parturition in the dairy buffaloes: An approach of success of buffalo breeding farm in Bangladesh. *Asian Journal of Animal Sciences, 9*(5), 241–247. https://doi.org/10.3923/ajas.2015.241.247

Roberts, S. J. (1986). *Veterinary obstetrics and genital diseases (Theriogenology)* (3rd ed., pp. 314–318). David & Charles Distributors.

Tsaousioti, A., Basioura, A., Praxitelous, A., & Tsousis, G. (2024). Dystocia in dairy cows and heifers: A review with a focus on future perspectives. *Dairy, 5*(4), 655–671. https://doi.org/10.3390/dairy5040049

Tuji, Z. M., & Kitessa, J. D. (2021). Correction of vaginal prolapse in Holstein Friesian crossbred dairy cow: A case report. *International Journal of Current Research and Review, 9*(6), 6–10. https://doi.org/10.20546/ijcrar.2021.906.002

Wasef, A., Mohanta, U. K., Sah, V. K., Islam, M. R., Khadka, N., Budhathoki, N., & Islam, M. S. (2025). Incidence and associated risk factors of uterine prolapse in dairy cows in Manoharganj Upazila, Cumilla District, Bangladesh. *Ovozoa: Journal of Animal Reproduction, 14*(1), 25–33. https://doi.org/10.20473/ovz.v14i1.2025.25-33

Wilson, Y., Venugopal, K., Reddy, A. L., Priyanka, B., Kumar, P. V., Kumar, E. S. A., & Nagaraju, P. (2025). Induction of parturition in a buffalo with first-degree vaginal prolapse: A clinical case report. *International Journal of Veterinary Science and Animal Husbandry, 10*(12, Suppl.), 97–99. https://doi.org/10.22271/veterinary.2025.v10.i12Sb.2854

How to Cite this Article: Wasef A., Islam M.R., Islam R., Binte Shahid M.S., Perven Borsha R., Mohanta U.K.. (2026). Successful Pharmacological Induction of Parturition in a Primiparous Holstein Friesian Crossbred Cow with Prepartum Vaginal and Rectal Prolapse: A Case Report. *Anim Reprod Update*, **6**(1), 7-10. https://doi.org/10.48165/aru.2026.6.01.03