

## SUCCESSFUL MANAGEMENT OF VAGINO-CERVICAL PROLAPSE DURING MID-CYCLE ESTRUS IN A CROSSBRED JERSEY COW USING A DOUBLE PROSTAGLANDIN PROTOCOL

<sup>1</sup>A. Thangamani, <sup>2</sup>S. Manokaran\*, <sup>3</sup>T. Sarath, <sup>1</sup>A. Reshma, <sup>1</sup>B. Vigneshwaran and  
<sup>4</sup>A. Elango

<sup>1</sup>Assistant Professor, <sup>2</sup>Professor & Head, Dept. of Veterinary Gynaecology and Obstetrics

<sup>3</sup>Associate Professor & Head, Veterinary Clinical Complex

<sup>4</sup>Dean, Veterinary College and Research Institute, Salem-636 112

Tamil Nadu Veterinary and Animal Sciences University (TANUVAS), India

E-mail: smanokaran1976@gmail.com (\*Corresponding author)

**Abstract:** A five-year-old pluriparous cross-bred Jersey cow presented with a history of intermittent vaginal mass prolapse occurring consistently during the mid-estrous phase of each cycle. Gynaecological and ultrasonographic examination confirmed a diagnosis of second-degree vagino-cervical prolapse associated with mid-cycle estrus. The cow was managed using a double prostaglandin protocol, followed by fixed-time artificial insemination. Pregnancy was confirmed by transrectal ultrasonography 45 days post-insemination.

**Keywords:** Prolapse, Crossbred Jersey

### INTRODUCTION

Genital prolapse refers to the descent of one or more pelvic structures including the bladder, uterus, cervix, and vagina from their normal anatomical positions toward or through the vaginal opening (Parmar, 2023). This condition has been documented across various domestic animal species, with a notably higher incidence in bovines, particularly in prepartum cows and buffaloes. Vaginal prolapse can occur at other reproductive stages, including during estrus. Estrus-associated vaginal prolapse is well recognized in canines, where elevated estrogen levels during the estrous cycle are implicated in the relaxation of pelvic ligaments and supportive tissues, predisposing to prolapse. Although less common, similar cases have been sporadically reported in cows and buffaloes. Specifically, prolapse involving the vagina or the combined cervix and vagina has been observed in cattle during estrus (Krishna *et al.*, 2012 and Venkatesh *et al.*, 2023). The present case report documents a successful clinical management of vaginal prolapse occurring during mid-cycle estrus in a cow.

### CASE HISTORY AND CLINICAL OBSERVATION

A five-year-old pluriparous crossbred Jersey cow (having calved three times) was presented to the Large Animal Unit of the Gynaecology and Obstetrics section, Veterinary Clinical Complex, Veterinary College and Research Institute, Salem with a complaint of a protruding

vaginal mass from the vulva since the previous evening. The owner reported that the animal had a history of intermittent, recurrent prolapse during previous estrous cycles, typically occurring 10-12 days after the onset of estrus. On clinical examination, a second-degree vagino-cervical prolapse was observed, with the prolapsed tissue extending beyond the vulvar lips (Figure 1). Rectal palpation revealed a relaxed cervix and tonic uterine horns. Transrectal ultrasonography identified a mature corpus luteum measuring 15.4 mm × 20.1 mm on the right ovary and a Graafian follicle measuring 15.4 mm × 16.0 mm on the left ovary (Figures 2 and 3). Based on the clinical history, gynaecological findings and ultrasonographic evidence of concurrent luteal and follicular activity the condition was diagnosed as mid-estrous vagino-cervical prolapse.

### TREATMENT AND DISCUSSION

The prolapsed vaginal mass was gently cleansed with a 1% potassium permanganate solution to remove debris and reduce the risk of infection. Epidural anaesthesia was administered using 2% lignocaine. The protruded vaginal mass was carefully elevated to relieve the urine and then manually reduced to its normal anatomical position. As the prolapse mass was easily reducible and occurred exclusively during the mid-estrous phase, retention suture was not applied. The cow was administered prostaglandin  $F_{2\alpha}$  (cloprostenol sodium, Pragma, 500 µg, intramuscularly) on the day of presentation (Day 0) and again on Day 11. Fixed-time artificial insemination (FTAI) was performed at 72 and 96 hours following the second prostaglandin  $F_{2\alpha}$  injection. To enhance ovulatory response, buserelin acetate (Gynarich, 10 µg, intramuscularly) was administered on the day of the first insemination. Pregnancy was confirmed by transrectal ultrasonography 45 days post-insemination.

Estrual prolapse is a well-documented condition in bitches but occurs only sporadically in cattle. It has been postulated that elevated circulating estrogen levels during estrus play a pivotal role in the pathogenesis of this condition. High estrogen concentrations are known to induce vulvar and vaginal edema, relaxation of the vulvar sphincter muscles, and laxity of the pelvic ligaments and supporting connective tissues, thereby predisposing animals to vagino-cervical prolapse (VCP) (Murugavel, 2002). Reports of its occurrence during mid-cycle estrus are exceedingly rare. However, recent evidence suggests that mid-cycle estrus characterized by a transient surge in estrogen from a dominant follicle despite the presence of a functional corpus luteum (Satheshkumar, 2018). Mid-cycle estrus in cattle can be effectively managed using prostaglandin-based protocols to regress the corpus luteum and synchronize the estrous cycle (Gupta *et al.*, 2023). In the present case, a crossbred Jersey cow presented with vagino-

cervical prolapse coinciding with mid-cycle estrus. The condition was successfully resolved following the administration of a double prostaglandin F $_{2\alpha}$  protocol.

### CONCLUSION

Vagino-cervical prolapse during mid-cycle estrus is rare but manageable. In this case, a double prostaglandin protocol successfully resolved the condition in a crossbred Jersey cow, highlighting hormonal synchronization as an effective therapeutic approach for such atypical presentations.

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| <b>Figure 1: Vagino-cervical prolapse</b>                                         | <b>Figure 2: Mature CL 15.4 mm × 20.1 mm on the right ovary</b>                   | <b>Figure 3: Graafian follicle 15.4 mm × 16.0 mm on the left ovary</b>             |

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