Case Report

EFFECTIVENESS OF COMBINING MECHANICAL SUCTION WITH PROSTAGLANDIN THERAPY IN MANAGING PYOMETRA IN A HOLSTEIN FRIESIAN CROSSBRED COW

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ABSTRACT

A Holstein Friesian crossbred cow after six months of second calving was presented to the Veterinary Clinical Complex, Veterinary College and Research Institute, Theni, with a history of whitish vaginal discharge for the past two weeks. Rectal examination revealed bilaterally distended uterine horns with no palpable foetal structures and purulent material was expelled during the examination. Ultrasound examination revealed hyperechoic contents in both the uterine horns and a mature corpus luteum in the right ovary. Based on the clinical and ultrasound findings, the case was diagnosed as pyometra. Approximately 1.6 litters of purulent materials were evacuated using a suction apparatus and inj. PGF2αwas administered on the same day. The cow was treated with parenteral antibiotic, antihistamine and intrauterine antibiotic therapy for five days. After a month of sexual rest, a follow-up ultrasound examination revealed a normal uterus with no signs of pathology and the cow was subsequently inseminated. The case of open type pyometra in the lactating Holstein Friesian crossbred cow was successfully treated by evacuating the purulent material using a suction apparatus and followed by therapeutic management.

Keywords: Pyometra, $PGF_{2\alpha}$, manual removal of pus, suction apparatus and HF Crossbred cow

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INTRODUCTION

Postpartum uterine infections, such as pyometra, significantly impact the health and productivity of dairy cattle. These infections pose challenges due to their high treatment costs, which are even more burdensome when prevalence is high (Amin *et al.,* 2021). Pyometra can also lead to infertility. The uterine lumen is typically

contaminated by bacteria from the external environment after calving; while most cows can clear the contamination, up to five per cent may develop pyometra (Sheldon *et al.,* 2006). Several factors increase susceptibility to pyometra, including abnormal parturition, delayed uterine involution due to conditions like abortion, premature birth, twin birth, dystocia, retained foetal membranes, septic metritis or postpartum metritis (Roberts, 1986). Inflammatory changes in the endometrium can interfere with the absorption of prostaglandins into systemic circulation, resulting in a persistent corpus luteum (CL) and a closed cervix, ultimately leading to the accumulation of exudates in the uterine lumen, a condition known as pyometra (Noakes *et al.,* 2019). The present communication places on record a successful management of postpartum pyometra in a HF crossbred cow.

CASE REPORT

A Holstein Friesian crossbred cow in its second lactation after six months of calving was presented to the Veterinary Clinical Complex at Veterinary College and Research Institute, Theni, with a history of whitish vaginal discharge for the past two weeks (Fig.1). The owner reported that the cow had calved six months ago with an anamnesis of assisted calving and had been inseminated twice, with the last insemination a month ago. Upon physical examination, all vital parameters were within the normal range. Rectal examination revealed that the cervix located within the pelvic cavity and the uterine horns were found in the pelvic brim. Uterine horns were enlarged with a portion descending into the abdominal cavity and feeble fremitus was palpable on the middle uterine arteries. Ultrasound examination revealed hyperechoic content in both the uterine horns (Fig.2) and a mature corpus luteum on the right ovary (Fig.3). Pre-treatment complete blood count indicated neutrophilia and leukocytosis. Based on these observations, the case was diagnosed as open type pyometra. Approximately 1.6 litters of purulent material were evacuated using a suction apparatus (Fig.4). Inj. Cloprostenol sodium at 500 µg (synthetic PGF2α) total dose was administered intra muscularly to induce lysis of the corpus luteum and stimulate uterine contractions and promote natural clearance. Additionally, the cow was treated with inj. streptopenicillin 5gm i/m, inj. chropheneramine maleate 0.5 mg / kg b.wt and liquid oxyteracycline 40 ml by intra uterine therapy for five days. On the second day, approximately 300 ml of purulent material was removed from the uterus by suction apparatus. By the third day, ultrasound examination revealed mild anechoic fluid accumulation in the uterus (Fig.5). However, by the fifth day, the ultrasound showed no fluid accumulation in the uterine horns and normal echogenicity was observed. After a month of sexual rest, a follow-up ultrasound examination revealed a normal uterus with no signs of pathology and the cow was subsequently inseminated.

RESULTS AND DISCUSSION

Uterine infections are common disorders affecting dairy cows during the postpartum period, when the protective barriers of the uterus are compromised. If bacterial contamination is not fully cleared before normal ovarian cycles resume,

chronic endometritis and pyometra may develop (Noakes *et al.,* 2019). Pyometra is considered a branch of endometritis (Galvao *et al.,* 2011) that results from exposure of the uterus to infection followed by cumulating of pus inside its lumen while the ovary exhibits presence of a persistent corpus luteum (Knudsen *et al.,* 2016). Most cows that suffer from pyometra have closed cervix. However, in few cases the cervix is not completely closed. Therefore, purulent discharge can be seen coming out from the vagina when the cow lies down, urinates or defecates (Raj *et al.,* 2015).

Inflammatory changes in the endometrium may disrupt prostaglandin absorption, leading to a persistent corpus luteum and closed cervix (Noakes *et al.,* 2019). Pyometra is diagnosed by transrectal ultrasonography as it is based on the appearance of increased volume of accumulated echogenic uterine content without foetus and cotyledons, closed cervix and corpus luteum on the ovary (Bondurant, 1999; Sheldon *et al.,* 2006)

The prognosis for uterine infection relies on efficient evacuation of uterine contents, elimination of infectious agents and initiation of a new oestrous cycle (Noakes *et al.,* 2019). Prostaglandin F2α effectively treats uterine infections, as it stimulates uterine contractions, increases endogenous PGF2α secretion and promotes immune response (Ahmed *et al.,* 2023). Administering PGF2α and its analogues can induce oestrus in about 90 per cent of cows, facilitating uterine self-cleansing and enhanced uterine motility.

In the present case, approximately 1.6 litters of purulent materials were removed from the uterus using a suction apparatus. This method allows thorough evacuation of pus, reducing bacterial load and inflammatory burden, thereby minimising risks of uterine perforation and toxin absorption. This approach supports the restoration of a healthier uterine environment and promotes recovery.

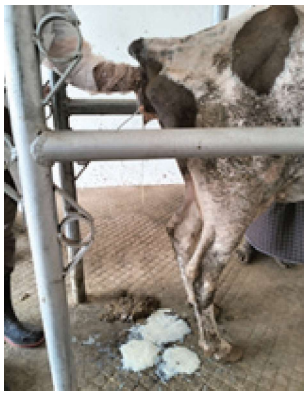

Fig.1 Purulent vaginal discharge

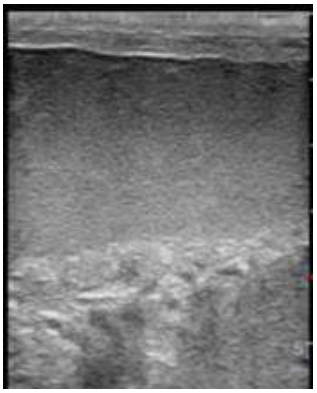

Fig. 2 Ultrasound examination of uterine lumen – Hyperechoic content

Fig. 3 Mature corpus luteum on the right ovary

Fig. 4 Purulent material evacuated using a suction apparatus

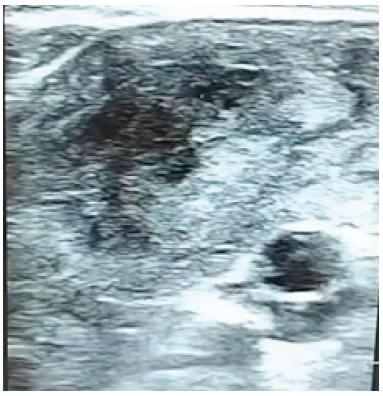

Fig. 5 Hyperechoic uterine wall with decreased anechoic areas in the uterine horns on the third day

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