

## SUCCESSFUL THERAPEUTIC MANAGEMENT OF CLOUD BURST IN A NON-DESCRIPTIVE DOE

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## SUMMARY

A three-year-old non-descript doe in its second parity was presented with the history of animal mated 5 months back and showed enlargement of udder and teats. On clinical examination, all the vital parameters were within the normal range and moderate abdominal distension and teat engorgement with no abnormal genital discharge was noticed. No fetal parts palpable on abdominal palpation. Per-vaginal examination revealed closed cervix. B-mode trans-abdominal ultrasonographic examination revealed highly distended uterine horns with large anechoic areas as circumscribed cross-sectioned sacculations which were separated by thin hyperechoic trabeculae with no embryonic/fetal and maternal caruncular structures confirming it to be non-gravid uterus filled with fluid (hydrometra). The doe was treated with double regime cloprostenol sodium (125 µg) in an interval of 12 days intramuscularly and the doe displayed behavioural estrus on third day following second injection.

**Keywords:** Cloud burst, Cloprostenol sodium, Doe, Hydrometra, Pseudopregnancy, Ultrasonography

Pseudopregnancy (hydrometra) is a quiet common dis-hormonal pathology and a cause of infertility in goats which is characterized by prolonged anestrus the persistence of one or more functional corpus luteum in the ovaries and increase in size of uterine lumen due to transudation (effusion) of a sterile serous liquid (hydrometra). The incidence varies from 1.3 to 30.4% with an average of 4.2% and diagnosed mostly on ultrasonographic examination for pregnancy and infertility (Dyulger *et al.*, 2020). The predisposing causes are high productivity (Moraes *et al.*, 2007), hormonal synchronization of estrus and ovulation (Batista *et al.*, 2001), estrus induction out of the season using progesterone or its synthetic analogues alone or in combination with pregnant mare serum gonadotropin (Milovanovic *et al.*, 2016). The does induced hormonally are in risk of developing pseudo pregnancy 4 times higher than in the natural estrus cycle whereas does with above-average fatness are 3.4 times more prone (Almubarak *et al.*, 2018). The season, number of kidding, feeding and the housing system do not affect the frequency of extension of pseudo pregnancy. Even though the specific causes are unknown, 18-20% incidence due to intrauterine death of the foetus around 40-90 days of gestation (Hesselink, 1993). Relative or absolute hyperestrogenism associated with chronic an ovulation and glandular cystic endometrial hyperplasia is the prerequisite for the development of hydrometra whereas persistent progesteronemia has no role (Studentsov *et al.*, 2019).

A three-year-old non-descript doe in its second parity was presented to the Large Animal Gynaecology

unit of Madras Veterinary College Teaching Hospital for confirmation of reproductive status. The owner reported that the animal had been mated 5 months back and showed a pronounced enlargement of udder and teats at about 135 days post-mating. On clinical examination, animal was found to be healthy and no abnormal genital discharge was seen. Moderate abdominal distension and teat engorgement was noticed. Abdominal palpation failed to indicate the presence of any foetus. On per vaginal examination, the os-cervix was found to be closed. Trans-abdominal B-mode trasonographic examination using a 5.0 MHz transducer was performed with the doe in its left lateral recumbency revealed, highly distended uterine horns with large anechoic areas as circumscribed cross-sectioned sacculations. The anechoic fluid compartments were separated by thin hyperechoic trabeculae (Fig. 1) probably due to coiling of the uterine horns. Further, absence of embryonic/fetal and maternal caruncular structures confirmed it to be non-gravid uterus filled with fluid. Based on history and ultrasonographic examination, the condition was diagnosed as hydrometra/cloud burst.

The doe was treated with 125 µg of Inj. Cloprostenol sodium (Pragma® Intas pharmaceuticals -Synthetic PGF<sub>2α</sub> 250 µg/mL) IM on the day of presentation aimed to regress the functional corpus luteum and evacuate the contents. On 3<sup>rd</sup> day post treatment, history of clear vaginal discharge and reduction in abdominal distension was reported. The second dose of Cloprostenol was given on 12<sup>th</sup> day resulting in behavioural estrus on third day.

Hydrometra has been reported in goats and may occur post mating, characterized by conception

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Fig.1. B-mode ultrasonographic image showing anechoic fluid compartments in the uterus separated by hyperechoic trabeculae

followed by early embryonic death with persistent corpus luteum, or post estrus without breeding (Moraes *et al.*, 2007). Bilateral increase in abdomen size due to accumulation of large amount of secretion with udder enlargement which appearing as preparation for parturition may be observed. As corpus luteum retention precedes development of hydrometra, its spontaneous regression leads to interruption and emptying of pseudo pregnancy. There could be spontaneous evacuation of accumulated fluid called “Cloud burst” at the expected time of parturition in animals as soon as progesterone concentration falls below 1 ng/ml leading to the disclosure of the cervix, activation of the myometrial contractile activity and the emptying of the hydrometra, which have developed post breeding (Pieterse and Taverne, 1986). In some does, only anestrus could be observed with no external signs of hydrometra and at the end of which a bloody discharge may be seen (Smith, 1986). Prolactin probably plays an important role in its pathogenesis and may be the cause for the mammary development associated with the condition (Smith, 2001). The occurrence of the false pregnancy provides the evidence that ovulation took place during preceding cycle and that the hypothalamic-pituitary-gonadal axis is intact (Singh *et al.*, 2019). The doe responded with double injection regime of PGF<sub>2α</sub> and displayed behavioural estrus which is in agreement with Pieterse and Taverne (1986). In the present case, the hydrometra may be attributed to early embryonic

death with persistence of CL and subsequent hormonal alterations.

Conclusively, hydrometra is a common cause of infertility in goats. Real-time ultrasonography is found to be useful in rapidly diagnosing pseudopregnancy and double injection regime of cloprostenol sodium is found to be effective in complete evacuation of uterine contents restoring subsequent fertility and also helps in prevention of recurrence of the condition.

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