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Pseudopregnancy in goats: Diagnosis and therapeutic management

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Abstract
The anestrus condition known as hydrometra, sometimes known as pseudopregnancy, is marked by an accumulation of aseptic fluid in the uterus, the persistence of the corpus luteum, and the lack of the foetus and placentomes. In herds of dairy goats, hydrometra is a common finding and its frequency ranges from 3 to 5% (7.69%). At the Teaching Veterinary Clinical Complex, College of Veterinary Science and Animal Husbandry, Anjora, Durg, Chhattisgarh, two nondescript goats aged 4 and 2.5 years were presented for pregnancy diagnosis with swollen belly and arched back condition.
On further examination, teats were found to be engorged in one of the goat while milk let down was also observed in the other goat. On abdominal percussion and palpation, distention of abdomen with fluid thrill was observed. The trans-abdominal ultrasongraphy revealed extended anechoic image of fluid filled in the uterus with absence of fetal sacs and cancrucles. The hyperechoic image of traversed lines indicate the thin walls of uterus in between the fluid filled uterine horns.
The drug of choice for hydrometra is prostaglandin ($PGF_{2\alpha}$). The goats were administered injection of Cloprostenol (Vetmate) 250 µg intramuscularly. The supportive treatment involved administration of an antiallergic (Chlorpheniramine maleate @ 0.5 mg/kg) and an anti-inflammatory (Meloxicam @ 0.5 mg/kg) intramuscularly. Owner was advised to mate the goats in their next observed estrus. The prognosis of the disease was found to be good as one of the goat was pregnant with 2 kids in the next estrous cycle.

Keywords: Hydrometra, goats, cloprostenol, pseudopregnancy

Introduction
False pregnancy in goats, also called pseudopregnancy or hydrometra, is surprisingly common. The anestrus condition known as hydrometra, sometimes known as pseudopregnancy, is marked by an accumulation of aseptic fluid in the uterus, the persistence of the corpus luteum and the lack of the foetus and placentomes.
By using ultrasonography, it may be seen as non-echogenic areas of fluid separated by trabeculae in the tissue (Islam Sagor, 2022) [4]. In dairy goat herds, hydrometra is common and can range in frequency from 3 to 5% (7.69%). It contributes significantly to the infertility of goats (Souza *et al*., 2013) [5].
There is still much more to learn about the condition's pathophysiology and aetiology. The accumulation of fluid is a result of the disease's pathophysiology, which involves an extended progesterone secretion that is probably brought on by a problem with the luteolytic system (Islam sagor, 2022) [4]. The uterine lumen's accumulation of sterile fluids results in varied degrees of abdominal distension. Reproductively viable anestrus does may develop the disease both outside and during the breeding season.
The uterine fluid accumulates and is eventually expelled (referred to as the "cloud burst") when the extended luteal phase spontaneously comes to an end. Since pseudopregnancy is a primary cause of goat subfertility, its presence on a commercial dairy goat farm causes serious financial loss (Arokia *et al*., 2017) [1].

Case history
Two nondescript goat of 4 years and two and half years of age were presented at teaching veterinary clinical complex, college of veterinary science and animal husbandry, Anjora, Durg, Chhattisgarh, for pregnancy diagnosis with distended abdomen and arched back condition. One of the goat was mated 5 months back and not showed estrus signs within the period of 5

months of mating. According to the history of other goat, kidding occurred 6 months back in the last estrous cycle. As the goat was kept with male buck, mating was observed in the recent estrus phase.

Fig 1: Abdominal distention (before treatment) in goats of 2.5 years (left) and 4 years (right) of age

Clinical examination and diagnosis

Clinical examination of both goats revealed normal body temperature with a good body condition. On further examination, teats were found to be engorged in one of the goat while milk let down was also observed in the other goat. On abdominal percussion and palpation, distention of abdomen with fluid thrill was observed (Fig. 1). The per vaginal examination revealed the closed cervix in both the goats. The trans-abdominal ultrasongraphy revealed extended anechoic image of fluid filled in the uterus with absence of fetal sacs and cancrucles. The hyperechoic image of traversed lines indicate the thin walls of uterus in between the fluid filled uterine horns (Fig. 2). Based on the observations of ultrasonogarphy, the condition was diagnosed as Hydrometra.

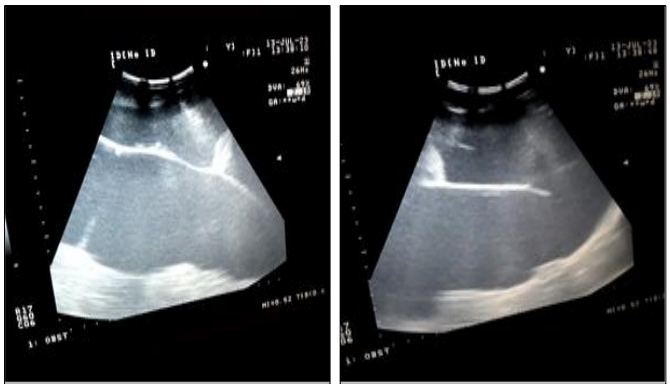

Fig 2: Ultrasonography showing anechoic image of fluid accumulation in uterus

Treatment and Prognosis

The drug of choice for hydrometra is prostaglandin ($PGF_{2\alpha}$). The goats were administered injection of Cloprostenol (Vetmate) 250 µg intramuscularly. One day after the hormonal administration, clear mucus discharge from the vagina observed along with the substantial reduction in abdominal distention. The supportive treatment involved administration of an antiallergic (Chlorpheniramine maleate @ 0.5 mg/kg) and an anti-inflammatory (Meloxicam @ 0.5 mg/kg) intramuscularly. Owner was advised to mate the goats in their next observed estrus. The prognosis of the disease was found to be good as one of the goat was pregnant with 2 kids in the next estrous cycle (Fig. 3).

Fig 3: Good prognosis with kidding of the goat after treatment

Discussion

Pseudopregnancy may occur post mating, characterized by conception followed by early embryonic death with persistence of CL, or post oestrus either without mating or in case of a sterile mating (Deori *et al*., 2010) [3]. In goats with hydrometra and mucometra, the corpus luteum exhibits extended activity, which is indicative of the lack of a luteolytic action with uterine origin. The uterus fills up with fluid when the corpus luteum of a pregnant does is present and the progesterone level is more than 2 ng/mL. The uterine fluid is only partially spontaneously eliminated, which hinders the luteolysis of the pregnant corpus luteum and causes hydrometra or mucometra to reoccur. The current investigation showed that, although not inducing estrus in all goats, prostaglandin is effective in treating hydrometra and mucometra since all does in estrus were pregnant after just one or more mating. It's crucial, in our opinion, not to artificially or naturally inseminate the female just after the treatment of hydrometra.

Conclusion

Hydrometra is a condition that is similar to a pregnant doe's normal state without harming the goat's overall health. Hydrometra may not even be regarded as a disease (Balamurugan *et al*., 2018) [2]. However, early detection and treatment of this condition are crucial for a speedy return to the normal reproductive cycle due to the economic effect connected with the absence of production of milk and the viable kids.

Conflict of interest

The authors declare that they have no known competing financialinterests or personal relationships that could have appeared to influencethe work reported in this paper.

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