



Hydrometra Mimicking Full-Term Pregnancy in a Nondescript Doe: A Diagnostic Challenge

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Abstract

A 6-year-old nondescript doe in its fourth parity, carrying a full-term pregnancy, was presented to the Veterinary Clinical Complex, College of Veterinary Sciences and Animal Husbandry, Mathura, Uttar Pradesh, in July 2026 with a history of profuse watery vaginal discharge since the previous night and marked abdominal distension. General clinical examination revealed a significantly enlarged abdomen, while abdominal ballottement failed to detect a viable fetus. Transabdominal ultrasonographic examination demonstrated a markedly distended uterus with a thin uterine wall, absence of identifiable placentomes, and the presence of a hyperechoic structure suspended within a large volume of anechoic intrauterine fluid. To further characterize the intrauterine contents, radiographic examination was performed, which revealed a markedly enlarged uterine silhouette predominantly occupied by fluid opacity, with a small fetal skeleton located in the ventral aspect of the uterus. Based on the combined ultrasonographic and radiographic findings, the case was diagnosed as hydrometra. Then the goat was treated with cervical dilation therapy and antibiotics. This report highlights the diagnostic value of integrating ultrasonography and radiography for differentiating hydrometra from advanced pregnancy and other causes of abdominal enlargement in goats, thereby facilitating accurate diagnosis and appropriate clinical management.

Keywords: Dystocia; Goat; Hydrometra

Introduction

Goat production has gained considerable global importance over the past decade owing to its significant contribution to the livelihoods of resource-poor farmers in developing countries and the increasing consumer demand for goat meat and milk in developed nations [1]. Among the reproductive disorders affecting goats, pseudopregnancy is recognized as a clinically significant condition, with a reported prevalence of up to 10.6% [2]. Pseudopregnancy is characterized by prolonged anestrus resulting from the accumulation of sterile fluid within the uterine lumen due to the persistence of a functional corpus luteum (CL). The condition is typically associated with the absence of placentomes and may occur with or without the presence of a fetus [3]. As one of the most frequently encountered uterine disorders in goats, pseudopregnancy adversely affects reproductive efficiency by causing temporary infertility, particularly in dairy herds [4].

The terms hydrometra and mucometra are commonly used interchangeably with pseudopregnancy in goats, reflecting the accumulation of serous or mucoid fluid within the uterus. Despite its clinical significance, the precise etiology and pathogenesis of this disorder remain incompletely understood. The condition is consistently associated with sustained progesterone secretion from a persistent functional corpus luteum, leading to suppression of normal estrous cyclicity and progressive uterine fluid accumulation, often accompanied by varying degrees of abdominal enlargement. Current evidence suggests that hydrometra may result from alterations in the balance between luteotrophic and luteolytic mechanisms regulating ovarian function. In addition, prolactin has also been implicated as a potential endocrine factor contributing to the development and maintenance of hydrometra in goats.

Case Presentation

Clinical examination and diagnosis

A 6-year-old nondescript doe weighing 38 kg, in its fourth parity and at full-term gestation, was presented to the Veterinary Clinical Complex, College of Veterinary Sciences and Animal Husbandry, Mathura, with a history of profuse watery vaginal discharge (without smell) since the previous night and progressive abdominal distension. On general clinical examination, the animal was alert and exhibited normal appetite and demeanor. The rectal

temperature was 102.4°F, while the heart rate and respiratory rate were within the normal physiological range. Abdominal inspection revealed marked bilateral distension. On abdominal ballottement, a fluid-filled uterus was palpable; however, no distinct fetal parts could be identified. Per-vaginal examination revealed a completely closed external cervical os, with no evidence of cervical dilatation.

For further evaluation, transabdominal ultrasonography was performed using a 5.0 MHz B-mode convex transducer, with the doe positioned in lateral recumbency. Ultrasonographic examination revealed a markedly distended uterus containing a large volume of anechoic fluid, a thin uterine wall, absence of identifiable placentomes, and a hyperechoic intrauterine structure suggestive of degenerated fetal tissue. To confirm these findings, radiographic examination of the abdomen was subsequently performed. The radiographs demonstrated a markedly enlarged fluid-filled uterus with the presence of a small degraded fetal skeleton within the uterine lumen. The condition was differentiated from pyometra based on the ultrasonographic characteristics. Unlike pyometra, which is typically characterized by a thickened uterine wall and echogenic or hyperechoic cellular debris suspended within the uterine contents, the present case exhibited a thin uterine wall and predominantly anechoic intrauterine fluid with minimal echogenic material. The combined ultrasonographic and radiographic findings were consistent with a diagnosis of hydrometra associated with a retained degenerated fetus.

Treatment

Based on the clinical, ultrasonographic, and radiographic findings, the doe was treated medically to induce luteolysis and facilitate uterine evacuation. A single intramuscular injection of cloprostenol sodium (250 µg; PGF₂α analogue) was administered to induce regression of the persistent corpus luteum. Supportive therapy included valethamate bromide (Epidosin®, 2 mL, IM) to facilitate cervical relaxation, Oestradiol Benzoate (Pregheat® 1 mL, IM) and Dexamethasone (Curadex® 2 mL, IM) as supportive medications. Following treatment, the owner was instructed to closely monitor the animal for vaginal discharge and expulsion of uterine contents.

Approximately 12 hours after treatment, the owner reported the sudden evacuation of a large volume of clear, straw-colored uterine fluid, resembling a “cloudburst” phenomenon. This was

accompanied by the expulsion of a small dead and degenerated fetus, indicating successful uterine evacuation. To verify complete evacuation of the uterine contents, a follow-up radiographic examination was performed the following day, which confirmed the absence of any retained fetal skeletal structures or other intrauterine masses, indicating complete uterine clearance.

To minimize the risk of secondary uterine infection and promote uterine recovery, the doe received Tetracycline Hydrochloride intrauterine boluses (Bulus Steclin®, two boluses daily for three consecutive days). In addition, a single intramuscular dose of long-acting enrofloxacin (Fortivir®, 2 ml, IM) was administered as prophylactic antimicrobial therapy. The doe recovered uneventfully, with no evidence of abnormal vaginal discharge or other post-treatment complications during the follow-up period.

Discussion

Hydrometra (pseudopregnancy) is one of the most frequently encountered uterine disorders in goats and is characterized by the accumulation of sterile fluid within the uterine lumen in association with a persistent functional corpus luteum. The exact pathogenesis remains incompletely understood; however, persistence of the corpus luteum following early embryonic loss is considered one of the principal mechanisms responsible for the development of this condition [5]. It has been estimated that nearly half of all hydrometra cases in goats arise following embryonic mortality occurring at approximately 40 days of gestation, after which luteolysis fails to occur, resulting in continued progesterone secretion and progressive intrauterine fluid accumulation [6].

In the present case, ultrasonographic examination revealed a markedly distended uterus containing anechoic fluid, a thin uterine wall, absence of placentomes, and a hyperechoic intrauterine structure. These findings were further substantiated by radiography, which demonstrated the presence of a small degraded fetal skeleton. Similar ultrasonographic observations of a hyperechoic mass within the dependent portion of the uterus have been reported by Barna, *et al.* [5], who attributed these findings to retained dead fetal tissue. The combined use of ultrasonography and radiography in the present case facilitated differentiation from pyometra, which is typically characterized by echogenic purulent uterine contents and a thickened uterine wall. Thus, multimodal imaging proved valuable in establishing an accurate diagnosis and guiding appropriate therapeutic intervention.

Hydrometra may persist for 120 - 150 days if left untreated, resulting in prolonged infertility and considerable economic losses due to delayed kidding intervals and reduced reproductive efficiency [7]. Consequently, routine ultrasonographic pregnancy diagnosis approximately 30 days after breeding is recommended in goats for the early identification of pseudopregnancy and other gestational abnormalities, allowing timely therapeutic intervention and improved reproductive management.

Previous studies have suggested that pseudopregnancy may develop following successful fertilization and implantation, followed by early embryonic death in the presence of a persistent corpus luteum [8]. Regression of the persistent corpus luteum using prostaglandin $F_{2\alpha}$ remains the treatment of choice. A single administration of $PGF_{2\alpha}$ has been reported to successfully resolve pseudopregnancy in dairy goats [9], while similar therapeutic success has also been documented in Deccani sheep affected with hydrometra [10]. Furthermore, Barna, *et al.* [5] observed satisfactory post-treatment fertility following prostaglandin therapy combined with antimicrobial treatment, reporting a conception rate of 64% (16/25). In the present case, successful evacuation of the uterine contents was achieved following administration of cloprostenol sodium ($PGF_{2\alpha}$ analogue) in combination with dexamethasone, oestradiol benzoate, and valethamate bromide. The prostaglandin analogue induced luteolysis and reduced circulating progesterone concentrations, whereas oestradiol benzoate and valethamate bromide likely facilitated cervical relaxation and dilatation, thereby promoting rapid expulsion of the accumulated uterine fluid and the retained degenerated fetus. The characteristic “cloudburst” observed within 12 hours of treatment, followed by radiographic confirmation of complete uterine evacuation, demonstrated the effectiveness of the therapeutic protocol. Subsequent intrauterine antibiotic therapy and systemic antimicrobial administration aided in preventing secondary uterine infection and ensured an uncomplicated clinical recovery [11].

Conclusion

Hydrometra associated with a retained dead fetus is an uncommon reproductive disorder that may closely mimic advanced pregnancy in goats, thereby posing a diagnostic challenge. The present case highlights the importance of combining ultrasonography with radiography for accurate diagnosis and differentiation from other uterine disorders such as pyometra.



Figure 1: Doe with hydrometra.

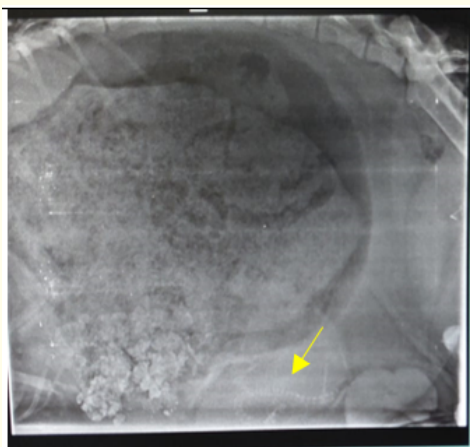


Figure 2: Radiograph showing small skelton in ventral side.



Figure 3: After the relieving of hydrometra.

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