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Successful therapeutic intervention in a case of hydroallantois in a non-descript cow

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Abstract

Hydroallantois is an uncommon but clinically significant gestational disorder in cattle, characterized by the sudden and excessive accumulation of allantoic fluid during the later stages of pregnancy. The condition poses considerable risk to both the dam and the fetus due to rapid abdominal enlargement, respiratory compromise, and potential circulatory disturbances. In the present report, late-gestation non-descriptive cows were examined after exhibiting progressive abdominal distension, reduced feed intake, and signs of discomfort. Clinical and reproductive evaluations, supported by ultrasonography, confirmed massive accumulation of allantoic fluid indicative of Hydroallantois. Therapeutic management focused on timely induction of parturition using cloprostenol and dexamethasone to promote cervical dilation and fetal expulsion. In one case, controlled allantocentesis was performed, allowing gradual removal of approximately 90 L of allantoic fluid, thereby minimizing the risk of shock and uterine damage. The cow successfully expelled the fetus and fetal membranes within a few hours following induction. Post-procedural supportive care, including antibiotics, intravenous fluids, and multivitamin supplementation, facilitated smooth and uneventful recovery. These cases emphasize the importance of early diagnosis, careful fluid drainage, and prompt therapeutic intervention to prevent life-threatening complications such as prepubic tendon or uterine rupture, thereby improving survival and clinical outcomes in affected bovines.

Keywords: Hydroallantois, allantoic fluid, fetal membranes, therapeutic management

1. Introduction

Hydroallantois is rarely diagnosed gestational disorder and usually affects cows (Rangasamy *et al.*, 2013; and buffalo [4]. Hydroallantois is defined as a rapid, excessive accumulation of allantoic fluid, typically occurring during the final trimester of gestation (Roberts, 1971) [5]. The condition is primarily linked to maternal placental abnormalities, including reduced functional caruncles or adventitious placentation (Arthur *et al.*, 2001) [1]. Clinically, affected animals exhibit sudden abdominal enlargement, anorexia, respiratory distress, and in advanced cases, recumbency. If untreated, the disorder may result in hypovolemic shock and death (Purohit, 2012) [3]. This case report describes the successful clinical management of Hydroallantois using hormonal induction, controlled fluid removal, and supportive therapy.

2. Case History

A nine-year-old non-descriptive cow in its fifth parity, approximately eight months pregnant, was presented with reduced feed intake, difficulty lying down, and rapidly progressing bilateral abdominal distension. The symptoms had developed over 5 days, and the condition was increasingly affecting the animal's comfort and activity.

3. Clinical Examination

Clinical parameters included:

- **Temperature:** 101.4 °F
- **Heart rate:** 76 beats/min
- **Respiratory rate:** 34 breaths/min
- **Mucous membranes:** Slight congestion
- **Abdomen:** Marked bilateral distension

Per-rectal examination revealed a tense, fluid-filled uterus with non-palpable placentomes and fetal parts-hallmark signs of Hydroallantois (Roberts, 1971) [5]. Per-vaginal examination confirmed a closed cervix.

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4. Diagnosis

Diagnosis was based on:

- Sudden abdominal enlargement
- Distended, fluid-filled uterus
- Usg finding anechoic foetal fluid, hyper-echoic uterus but no foetal parts

- On per-rectal palpation - Absence of palpable placentomes/fetal parts
- Closed cervix
- Rapid disease progression

These findings differentiated Hydroallantois from hydramnios, gastrointestinal distension, and ascites (Arthur *et al.*, 2001) ^[1].



Fig 1: Usg finding anechoic foetal fluid, hyper-echoic uterus, no foetal parts

5. Treatment and Management

Parturition was induced using cloprostenol (500 mcg IM), dexamethasone sodium phosphate (44 mg IM/IV), valethamate bromide (88–96 mg IV), and chlorpheniramine maleate, followed by supportive fluid therapy. After three hours, the cow showed signs of parturition but failed to expel the water bag. Per-vaginal examination revealed a partially dilated cervix and a markedly tense allantoic sac. Controlled rupture of the sac allowed gradual release of approximately 80–90 L of amber-colored allantoic fluid. To prevent hypovolemic shock during fluid loss, the cow was administered 5 L DNS and 5 L normal saline intravenously, along with broad-spectrum antibiotics and multivitamins. Remaining fluid pockets were removed through repeated per-vaginal manipulation. A dead, fully developed male fetus was delivered by gentle traction, and the placenta was manually removed. Post-delivery treatment included IV amoxicillin–clavulanic acid (3 g), flunixin (500 mg IM), and intrauterine bolus of furazolidone with urea. Supportive therapy was continued for three days. The cow achieved complete recovery within 48–72 hours after fetal expulsion.

6. Discussion

Hydroallantois typically results from maternal placental dysfunction, especially reduced or non-functional caruncles, leading to excessive fluid transudation (Arthur *et al.*, 2001)

^[1]. Further, factors like increased membrane permeability and decreased active transport of sodium across the chorioallantoic membrane, hormonal imbalances and fetal renal disease are also responsible for hydroallantois. The condition progresses rapidly compared to hydramnios, where distension is gradual and fetal parts remain palpable (Noakes *et al.*, 2019) ^[2]. Management primarily involves termination of pregnancy, most commonly by hormonal induction using PGF_{2α} and corticosteroids (Purohit, 2012) ^[3]. Controlled drainage of allantoic fluid is critical to avoid acute cardiovascular collapse (Roberts, 1971) ^[5]. In severe or recumbent cases, caesarean section may be necessary (Noakes *et al.*, 2019) ^[2]. In this case, early diagnosis and timely induction, combined with controlled fluid removal and supportive therapy, resulted in a favorable outcome with no complications.

7. Conclusion

Hydroallantois is a potentially life-threatening reproductive disorder that requires prompt diagnosis and careful therapeutic intervention. Hormonal induction combined with gradual evacuation of allantoic fluid and strong supportive care can result in successful recovery. Early veterinary management is essential to minimize maternal morbidity and preserve reproductive potential.



Fig 2: Allantonic fluid discharge



Fig 3: Bilateral abdominal

8. Disclaimer (Artificial Intelligence)

Author(s) hereby declares that NO generative AI technologies such as Large Language Models (ChatGPT, COPILOT, etc.) and text-to-image generators have been used during the writing or editing of this manuscript.

9. Conflict of interest

There is no conflict of interest regarding the present study among the authors.

10. Acknowledgement

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