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Prabhakar Rao K

Assistant Professor and Head,
Department of Veterinary
Gynecology and Obstetrics, College of
Veterinary Science, Garividi, Sri
Venkateswara Veterinary University,
Danduvaripalle, Andhra Pradesh,
India

Haritha GS

Assistant Professor, Department of
Veterinary Clinical Complex, College
of Veterinary Science, Garividi, Sri
Venkateswara Veterinary University,
Danduvaripalle, Andhra Pradesh,
India

Srilatha B

Assistant Professor, Department of
Veterinary Gynecology and
Obstetrics, College of Veterinary
Science, Garividi, Sri Venkateswara
Veterinary University,
Danduvaripalle, Andhra Pradesh,
India

Ramesh P

Assistant Professor and Head,
Department of Veterinary Clinical
Complex, College of Veterinary
Science, Garividi, Sri Venkateswara
Veterinary University,
Danduvaripalle, Andhra Pradesh,
India

Manoj Kumar K

Assistant Professor, Department of
Veterinary Clinical Complex, College
of Veterinary Science, Garividi, Sri
Venkateswara Veterinary University,
Danduvaripalle, Andhra Pradesh,
India

Prakash Kumar B

Assistant Professor and Head,
Department of Veterinary Surgery
and Radiology, College of Veterinary
Science, Garividi, Sri Venkateswara
Veterinary University,
Danduvaripalle, Andhra Pradesh,
India

Corresponding Author:

Prabhakar Rao K

Assistant Professor and Head,
Department of Veterinary
Gynecology and Obstetrics,
College of Veterinary Science,
Garividi, Sri Venkateswara
Veterinary University,
Danduvaripalle, Andhra
Pradesh, India

Medical management of Hydrallantois in a cross bred jersey cow: A case report

Prabhakar Rao K, Haritha GS, Srilatha B, Ramesh P, Manoj Kumar K and Prakash Kumar B

Abstract

Hydrallantois is a pathological condition characterized by excess accumulation of allantoic fluid during fetal development. A seventh month pregnant crossbred Jersey cow of third parity was presented with the history of reduction in appetite, difficulty while lying down and bilateral abdominal distension since 15 days. On general clinical examination the vitals were within normal range except for the increased respiratory rate. Per rectal examination revealed fluid filled uterus that is fully distended throughout the pelvic cavity. No fetal parts and placentomes were palpable. Per vaginal examination revealed closed cervix. Upon ultrasonographic examination anechoic fetal fluids were visualized, but no fetal parts as the pelvic cavity is completely occupied by fluid filled uterus providing no access further. Based on the clinical signs, rectal, per vaginal and ultrasonography, the case was diagnosed as hydrallantois. Therapeutic management was done by termination of pregnancy using hormonal preparations. The allantoic fluid completely drained and the cervix fully dilated with the expulsion of dead male fetus after 54 hours of termination. The cow was clinically treated with antibiotic, NSAID, nutraceutical and intravenous fluids for five days.

Keywords: Hydrallantois, pregnant, bilateral abdomen distension, termination, hormonal

Introduction

Hydrallantois and hydramnion are the two forms of uterine hydrops. Hydrallantois accounts for 90% of uterine hydrops while hydramnion accounts for 10%. Hydrallantois is usually considered as maternal abnormality, where the rapid and abnormal distension of abdomen occurs (Drivers and Peek, 2008) [2] due to rapid accumulation of watery, amber color fluid inside the allantoic cavity over a period of 5 to 20 days in late gestation and is always giving suspicion for twin/triplet pregnancy (Morrow, 1986) [8]. Roberts (1971) [13] stated that hydrallantois usually affects both fetus and fetal membranes. The physiopathology of hydrallantois is related to the reduction of placental vascularization resulting in metabolic changes in the placental tissue and foetal membranes thereby accumulating foetal fluids. Additionally, foetal malformation, foetal hepatic or renal disorders (hydronephrosis) and umbilical cord torsion also cause hydroallantois (Kapadiya *et al.*, 2018) [5]. General signs seen with hydrallantois are anorexia, lack of rumination, excessive water intake and restlessness. The characteristic signs of hydrallantois include rapid abdominal enlargement (over 5 to 20 days), occurring as early as the fifth month of gestation in severe cases. In severe cases the fluid may reach 30 to 60 gallons with the abdomen becoming distended, tense and barrel-shaped. The placentomes and fetus are difficult to palpate and are identified through the tense uterine wall. In mild cases the condition may not be diagnosed until parturition when an excessive amount of clear, watery, amber transudate is expelled (Erin Troy, 1993) [4]. Early diagnosis and treatment of hydrallantois aids in saving the dam and in advanced conditions the prognosis is grave. The condition can be diagnosed by physical examination (vaginal/rectal) and ultrasonography in bovines (Sutaria *et al.*, 2020) [15]. Medical termination of pregnancy with prostaglandinF₂ α and corticosteroids (Manokaran *et al.*, 2011) [6] is beneficial, but the sudden removal of allantoic fluid following medical termination leads to hypovolemic shock and collapse of the animal (Peiro *et al.*, 2007) [11]. So immediately after draining of allantoic fluids, intravenous infusion of fluid i.e., fluid therapy is recommended along with antibiotics, NSAIDs and nutraceuticals.

Case History and Observation

A seventh month pregnant crossbred Jersey cow was presented to the Department of Veterinary Clinical Complex, College of Veterinary Science, Garividi with a history of reduction in appetite, difficulty while lying down and bilateral abdominal distension since 15 days. On general clinical examination the physiological parameters were within normal range i.e., temperature: 101.8°F, mucus membrane: slightly congested, heart rate: 80 beats per min and increased respiratory rate of 38 breaths per min. Bilateral abdominal distension was so prominent (Fig.1). Upon per rectal examination, fluid filled uterus which is fully distended throughout the pelvic cavity was palpated. No fetal parts and placentomes were palpable. Per vaginal examination revealed closed cervix. Ultrasonography examination through rectum (Rectal probe) revealed anechoic fetal fluids (Fig.2), but no fetal parts and the pelvic cavity was completely occupied by fluid filled uterus providing no access further. Based on the clinical signs, rectal, per vaginal and ultrasonography, the case was diagnosed as hydrallantois.

Treatment

Therapy was aimed at termination of pregnancy using hormonal preparations. Parturition was induced by using Inj. Dinoprost tromethamine 25 mg (Lutalyse), I/M and Inj. Dexamethasone sodium phosphate 40 mg, I/M. The animal was kept under observation for 72 hours. After 26 hours, animal showed signs of parturition and there was two finger dilatation. Almost 80-90 liters of amber colored allantoic fluid was drained and the cervix was fully dilated with expulsion of dead male fetus after 54 hours of termination. Simultaneously, fluid therapy was administered to counteract hypovolemia. Supportive treatment was also given to prevent secondary bacterial infection. Inj. Intacef Tazo 3375 mg, Inj. Meloxicam 15 ml and Inj. Tribivet 10 ml were administered intramuscularly. Bolus comprising of Furazolidone and Urea was placed in uterus. The treatment was continued for five days following expulsion of fetus. The cow recovered uneventfully.



Fig 1: Bilateral distension of abdomen (Dorsal View)



Fig 2: Ultrasonography revealing anechoic fluid in Uterus

Discussion

Hydrallantois is the single pathological condition present in 85 to 90% of dropsical conditions in the bovine (Youngquist and Threlfall, 2007) [16]. The cause of hydrallantois is not certain. Hydroallantois could usually be associated with a diseased uterus in which most of the caruncles in one horn were not functional and atrophied and rest of the placentomes were enlarged, edematous and possibly diseased which led to formation of adventitious placenta (Drost, 2007) [3]. Sometimes, the adventitious placentae are formed due to congenital lack of maternal caruncles (Roberts, 1971) [13]. Excessive fluid accumulation in hydrallantois condition results abdominal distension due to accumulation of fluid in the allantoic sac which can cause pressure on lungs with resultant respiratory distress, difficulty in getting due to extra weight and sometimes recumbency with consequences of fatality to dam (Noakes *et al.*, 2009) [10], which is similar finding in the present case. Diagnosis and treatment plan of the case depends on the clinical signs, early diagnosis, condition of the dam, whereas prognosis depends on the response to the medical management. Few authors reported transcervical allantocentesis using a Rusch catheter and rubber pipe (Manokaran *et al.*, 2016 and Kapadiya *et al.*, 2018 [7, 5], respectively) and caesarean (Bhattacharyya *et al.*, 2012 and Resum *et al.*, 2016) [1, 12] if medical management isn't successful. However, in the present case medical management with PGF_{2α} and Dexamethasone yielded a good response along with supportive fluid therapy. Munja and Vivek (2021) [9] and Singh *et al.*, (2020) [14] reported successful management of hydrallantois with medical management of PGF_{2α} and Dexamethasone. Supportive fluid therapy is recommended with slow and continuous removal of the excessive allantoic fluid to avoid hypovolemic shock due to sudden expulsion of allantoic fluid during pregnancy termination (Kapadiya *et al.*, 2018) [5]. Postoperative complications like retained placenta owing to reduction of uterine contraction and septic metritis are common. So, in the present case antibiotic, NSAIDs and nutraceuticals are administered to combat the infections and for faster recovery.

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