

THERAPEUTIC MANAGEMENT OF HYDROALLANTOIS IN JAFFARABADI BUFFALO: COMPLICATIONS, DIAGNOSIS, MANAGEMENT & REPRODUCTIVE OUTCOMES

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Abstract: A total of five cases of hydroallantois were observed in Jaffarabadi buffaloes presented at Veterinary Clinical Complex, Junagadh, Gujarat, India. Diagnosis was based on the bilateral abdominal distension, respiratory distress and normal or subnormal rectal temperature. Clinical examination revealed a tense distended abdomen having fluid-filled uterus with inability to palpate the fetus or placentomes per rectum. Per-rectal ultrasonography demonstrated excessive anechoic fetal fluid with poorly defined placentomes and floating placental tissues, confirming the diagnosis of hydroallantois. Induction of parturition was achieved using PGF₂ α analogue and dexamethasone followed by controlled drainage of allantoic fluid, assisted fetal delivery, and intensive supportive therapy to prevent hypovolemic shock and secondary bacterial infection.

Keywords: Allantoic fluid, hydroallantois, Jaffarabadi Buffalo, induction of parturition, ultrasonography.

Introduction

Hydroallantois commonly occurs during the later trimester of pregnancy in buffaloes due to the dropsy of fetal membranes. It is characterized by the rapid accumulation of allantoic fluid within 5–20 days (Purohit, 2012; Manokaran *et al.*, 2016). It is linked to a disease of uterus where the remaining placentomes are significantly enlarged, infected, and the majority of the caruncles in one horn are not functioning (Kapadiya *et al.*, 2018). The physiopathology of hydroallantois is associated with decreased placental vascularization, which causes metabolic alterations in the placental tissue and fetal membranes, leading to the accumulation of fetal fluids. Hydroallantois is also caused by prenatal malformations, fetal hepatic or renal conditions (such as hydronephrosis) and torsion of umbilical cord (Jackson, 2006). Hypertrophied placentomes have been observed due to proliferation and hyperplasia of cytotrophoblastic cells in an attempt to bring more oxygen to compensate for the deficient oxygen (Zaher *et al.*, 2017). The condition can be diagnosed by per-rectally, per-vaginally and ultrasonographically in bovines (Sutaria *et al.*, 2020).

Case History:

A total number of five pregnant Jaffrabadi buffaloes (pluriparous) in their last trimester were presented to Veterinary clinical complex (VCC), Junagadh, Gujarat with the history of anorexia since 5-7 days, sudden bilateral abdominal enlargement within 5-20 days and respiratory distress.



Fig.1 & 2: Bilateral distension of abdomen in Jaffarabadi buffaloes

Clinical observations:

All five buffaloes that were presented having the history of bilateral abdomen enlargement since the last 5-20 days (**Fig. 1 & 2**). On physical examination, the buffaloes showed the signs of progressive anorexia, abnormal gait, respiratory distress, lethargy, normal or subnormal rectal temperature and congested conjunctival mucus membrane (**Fig. 3 & 4**). In every case, per-rectal examination showed a tense, fluid-filled uterus that occupied the majority of the abdominal cavity. The fetus, fremitus and placentomes were unable to palpate due to excessive fluid accumulation. Additionally, it became difficult for the hand to move in per-rectal examination. Per-vaginal examination revealed closed and stretched cervix due to the pressure exerted by the large amount of fluid.



Fig.3: Normal or subnormal rectal temperature



Fig.4: Congested mucus membrane

Per-rectal ultrasonographic examination revealed an anechoic (black) image of excessively filled fetal fluid, making the fetus and placentomes difficult to visualize. The placentomes are usually few, small, or poorly defined (**Fig. 6**). Trans-abdominal ultrasonographic examination revealed free floating hyper echogenic placenta, black colored anechoic fluid and multiple mixed echogenic contents at the ventral portion of the abdomen (**Fig. 5, 7 & 8**).

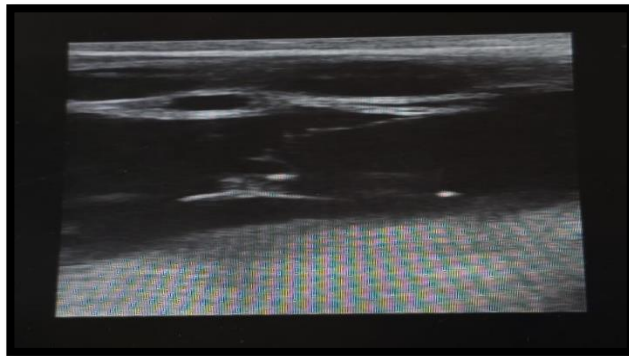


Fig.5: Free floating placenta

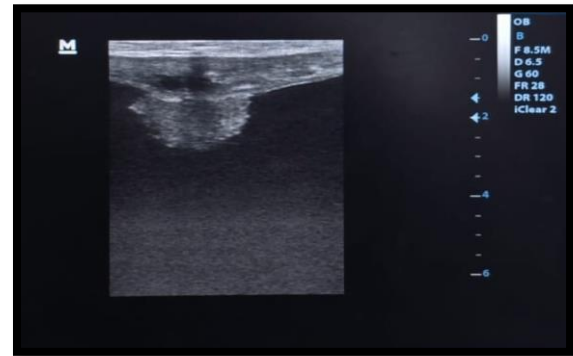


Fig.6: Poorly defined placentome



Fig.7: Thickening of uterine wall

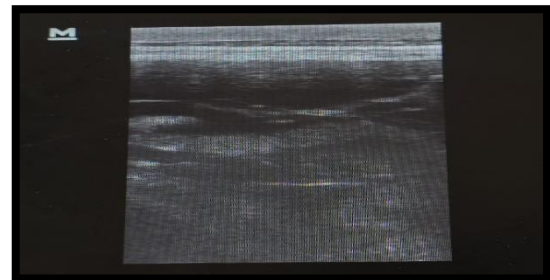


Fig.8: Multiple mixed echogenic contents

Therapeutic Management:

For induction of parturition, different therapeutic protocols such as, prostaglandin along with dexamethasone and estrogen can be used in dairy bovine (Kumar *et al.*, 2012). All five buffaloes were administered with an injection of D-Cloprostenol @ 75 mcg/ml (Pragma- D, 2ml) intramuscularly along with a corticosteroid- dexamethasone sodium, 40 mg (Dexona vet injection, 5 ml) intravenously to terminate the pregnancy. All buffaloes were treated on the day of presentation with fluid therapy consisting of 3 L dextrose normal saline (DNS), 2 L normal saline (NS), 3 L Ringer's lactate (RL), calcium borogluconate (450 mL), oxytetracycline @15 mg/kg BW intravenously and a multivitamin preparation 15 ml intramuscularly. After 24-48 hours of induction, animal showed signs of parturition but failed to expel water bag. Then, per-

vaginal examination revealed partially dilated cervix and tensed water bag. Allantoic sac was torn manually by the index finger to remove the allantoic fluid. Around 100-130 liters of amber colored allantoic fluid having plasma like consistency was expelled out.

At the same time, the animal was administered with Inj. DNS (4 liters), NS (3 liters) and RL (3 liters) solution along with dexamethasone (40 mg) intravenously to prevent hypovolemic shock. Supportive fluid therapy is necessary during the constant and slow removal of fetal fluid (Peiro *et al.*, 2007). Initially fluid was drained out spontaneously to some extent, but later on due to less uterine contraction and deep abdominal distention of fully fluid-filled gravid uterus, residual fluid remained inside. Thereafter, the fetus was palpated and delivered by gentle traction using obstetrical ropes, followed by manual removal of the remaining placenta (**Fig. 9 & 10**). By continuous per-vaginal examination remaining allantoic fluid was drained out (**Fig. 11 & 12**). After complete delivery of fetus, 2 boluses (ORIPRIM-IU) on each uterine horn were placed intrauterine. Supportive medicinal therapy was prescribed to counter the secondary bacterial infection for 5 days subsequently.



Fig.9: Obstetrical management

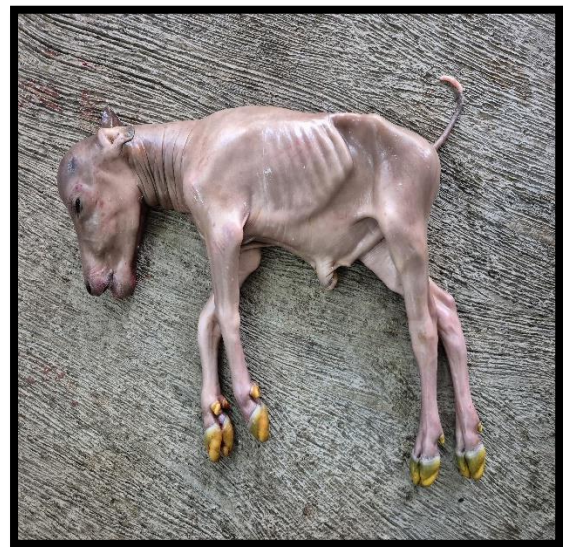


Fig.10: Dead foetus delivered by traction



Fig.11: Removal of allantoic fluid

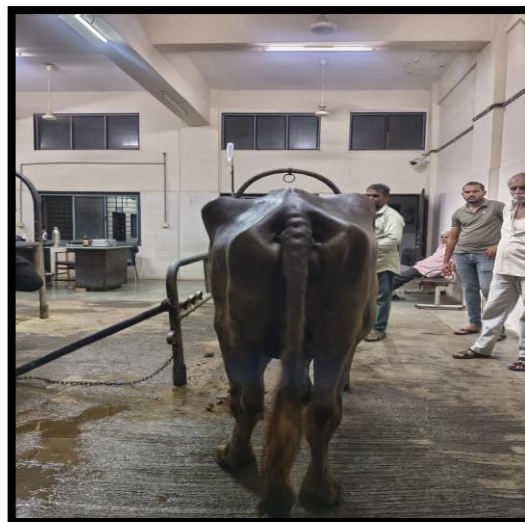


Fig.12: Reduction in abdominal distension

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