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A RARE CASE OF HYDROALLONTOIS IN NON-DESCRIPT MURRAH BUFFALO

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Abstract

Hydroallantois, an excessive fluid accumulation in the uterus during pregnancy, is a sporadic disease condition in pregnant animals. This case study presents a rare occurrence of hydroallantois in a non-descript Murrah buffalo in Nepal. The buffalo, in the third trimester of pregnancy, exhibited a distended abdomen, reduced food intake, and lethargy. Upon examination, bilateral abdominal distension and a heavily fluid-filled uterus were observed. The diagnosis of hydroallantois was confirmed based on clinical symptoms and rectal examination. Treatment was initiated with dexamethasone and PGF_{2α} analogue injections. When a minimal response was seen, the excess fluid was drained through the cervix using a sterilized kitchen gas pipe. Approximately 90 liters of fluid were drained, and a live, immature male fetus was extracted. However, the fetus died shortly after delivery. The buffalo received fluid therapy to prevent shock and was subsequently treated with antibiotics, pain relief medication, and multivitamins. The buffalo gradually recovered, but necrotic lesions were observed at the injection site, and subcutaneous emphysema was present. Daily dressing and hot fomentation were employed to aid healing. The buffalo eventually returned to normal health and resumed normal milk production.

Keywords: Buffalo, Fetus, Fluid therapy, Hydroallantois

INTRODUCTION

Medical science operates

Excessive fluid accumulation in the cavity of the uterus during pregnancy is known as hydrops. It is a sporadic disease condition of pregnant animals. This may be due to non-functional caruncles,

enlarged placentomes, and may be associated with other disease conditions (Roberts, 1986). Clinically, it presents as a distended abdomen, which may be confused with a digestive disorder. Hydroallantois and hydroamnion are the two forms of uterine

hydrops. Among the hydrops conditions, 90% of cases are hydroallantois, while the remaining 10% are hydroamnios (Roberts, 1986; A. Kumar et al., 2019). There are differences between hydroallantois and hydroamnios in incidence, mechanisms, clinical signs, diagnostic signs, squeal, and prognosis (Noakes et al., 2018). Here we are presenting a case of hydroallantois in a non-descript Murrah buffalo.

CASE HISTORY AND OBSERVATION

A buffalo with a history of a distended abdomen was presented at Madi Veterinary Hospital, Madi, Chitwan, Nepal. The farmer noticed that the abdomen had been gradually increasing, but the buffalo had been decreasing its food intake and becoming less active day by day. The buffalo was in the third trimester (8 months) of pregnancy. The farmer informed us that a local technician had administered anti-bloat liquid for three days, but the medicine had not worked. On general physical examination, it was observed that there was bilateral distension of the abdomen, with a body condition score (BCS) of about 2.5, and slight anemia. A heavily fluid-filled uterus and sluggish fremitus were felt during rectal examination. Other parameters such as vital signs were normal, and there was no discharge from the vulva. Due to the large amount of fluid, it was impossible to palpate the placentome and fetus through rectal examination. Based on the symptoms, physical and rectal examination, the case was diagnosed as Hydroallantois.

TREATMENT

Initially, treatment was started with 10 ml of Curadex I/M (dexamethasone, 4mg/ml, Concept Pharmaceuticals, India) and 5 ml of Lutalyse I/M (Dinoprost Tromethamine, 5 mg/ml, Zoetis Animal Health, America). Vaginal examination was done 24 hours after the initial treatment, revealing that only one finger was able to pass through the cervix. As there was little response to the treatment, 5 ml of Curadex was administered, and the farmer was requested to closely observe the buffalo.

The next day, approximately 20 hours after the second dosage of Curadex, the farmer noticed vaginal discharge. On vaginal examination, three fingers were able to pass through the cervix. The medical team decided to remove the excessive fluid by inserting a sterilized kitchen-type gas pipe through the vulva up to the cervix, applying gentle pressure to puncture the fetal membrane. About 90 liters of fluid was slowly drained out from the uterus. Fluid therapy was started parallelly with fluid drainage. A live immature male fetus (without hair) weighing 18 kg was extracted with slight forceful traction. Unfortunately, the fetus died after a few minutes of traction.

After draining the fluid, the buffalo was kept on fluid therapy to prevent shock. Fluid therapy through the ear vein was administered with 7 liters of RL over a duration of 4 hours, and then the animal was maintained on fluids. Daily fluid therapy was continued for 4 days at a rate of 3 liters per day, along with CMBG (Thical, Intas Pharmaceuticals, India) 250 ml IV and 150 ml S/C. Other treatments included the following: 2 ml of Synthotil I/M (oxytocin 5 IU/ml, Tablet India Limited) was given immediately after the fetus was removed to ensure rapid uterine involution and expulsion of the placenta; Procaben LA 30 ml I/M (Procaine penicillin G 150,000 IU, Benzathine penicillin G 150,000 IU/ml, Interchemie, Netherlands) was given as an antibiotic to prevent infection; Melonex-P 20 ml I/M (Meloxicam 5 mg and Paracetamol 150 mg/ml, Intracin, India) for pain relief; Multivit (Multivitamin, Interchemie, Netherlands) was given on alternate days for 7 days; Conciplx 15 ml (B complex,

Concept Pharmaceuticals India) I/M for 7 days; and E Care Se injection (Interchemie, Netherlands) I/M, three dosages given at alternate days. Four bolus of Sulfa drugs Cotrim (Asian Pharma, Nepal) was put into the uterus and Uterine tonic, ecbolec Exapar (Ayurved, India) was administered orally initially 200 ml followed by 100 ml daily for 5 days to ensure expulsion of placenta and prevent diseases associated with ROP Jaggery was offered 150 gm daily for 15 days to maintain glucose level in blood.

The buffalo gradually started to eat and returned to normal day by day, but necrotic lesions were seen at the site of the subcutaneous (SC) injection and subcutaneous emphysema with air-filled swelling on the posterior region, including the rump and thigh region. Regular dressing with povidine-iodine was done at the necrotic area, but it continued to worsen. On the 13th day after fetus delivery, the necrotic area dropped out, exposing the tissue on both sides of the neck. Daily dressing was continued for 25 days, and three shots of Procaben LA were given at 48-Hours intervals.

Hot fomentation with warm muslin cloth (dipped in hot water, squeezed, and applied immediately) with gentle pressure was done daily for 20 days. Move ointment (Reclitt health care India) was topically applied after hot fomentation for 20 days. After all these treatments, the buffalo returned to normal health condition and started giving milk normally.

DISCUSSION

Hydrops is a gestational disorder in farm animals with no specific cause, and its occurrence in farm animals is uncertain. However, it is associated with infectious diseases and developmental defects in the fetus (Roberts, 1986; Kapadiya et al., 2018). It may occur due to an increase in the permeability of the chorioallantoic membrane or a decrease in the active transport of sodium ions across the chorioallantoic membrane (Kapadiya et al., 2018). Hydroallantois must be differentiated from hydroamnion, as well as digestive disorders (e.g., intestinal obstruction, tympany), abdominal masses (e.g., tumors, fat necrosis, abscess), reproductive disorders (e.g., pyometra, hydrometra), and multiple fetuses (Praveen et al., 2015).

Sometimes, a heavy accumulation of fluid in the abdomen may increase the pressure on the diaphragm and lungs, leading to difficulties in respiration, bearing extra weight, recumbence, and consequently death of the animals (Kumar Singh et al., 2020). The appetite of an infected animal decreases due to visceral compression by an enlarged uterus (P. Kumar et al., 2018). In the present case, the animals show symptoms of decreased appetite, rapid distension of the abdomen, difficulties in getting up, and sluggish movement, which is similar to the symptoms stated earlier, i.e., sudden bilateral distension of the abdomen, anorexia, lack of rumination, respiratory distress, expiratory grunt, difficulty in getting up, and constipation (Manokaran et al., 2020).

On rectal examination, the fetus was not felt due to a large amount of fluid in the uterus (Drost, 2007). It can easily be diagnosed by findings of a distorted uterine horn and no palpation/ballotment of the fetus and placentomes, but this is not possible in small ruminants (Roberts, 1986; Praveen et al., 2015; Satish et al., 2019). The diagnosis of Hydroallantois is assisted by the history of rapid increase in abdomen size within 20-25 days of the last trimester (Satish et al., 2019). Ultrasonography can be a very useful alternative to diagnose the condition (Kumar et al., 2016; Satish et al., 2019; Kumar Singh et al., 2020).

Differentiation between hydroallantois and hydroamnion can be made with the allantoic fluid being watery, clear, and amber-colored transudate similar to fetal urine, whereas the amniotic fluid being a lubricant has a mucoidal, viscid, and syrupy consistency (Kumar, 2019). The treatment plan for hydroallantois includes the injection of dexamethasone, flumethasone, and PGF2 alpha administration (Troy, 1993; Kapadiya et al., 2018; A. Kumar et al., 2019; C. R. Kumar et al., 2019). Simultaneously, fluid therapy and dexamethasone are administered to prevent hypovolemic shock (Rangasamy et al., 2013; Kapadiya et al., 2018; C. R. Kumar et al., 2019). In the case of a closed cervix, dexamethasone is used (Kumar, 2019). Sometimes, a caesarian section is recommended. Supportive therapy, including fluids, NSAIDs, dexamethasone, antibiotics, painkillers, antihistamines, and multivitamins, is recommended after treatment for the recovery of the animal (Kumar et al. 2016; Satish et al., 2019; Prabhakaran, 2020; Kumar Singh et al., 2020).

In this case, 90 liters of fluid were drained out, which is in accordance with the average fluid drainage of 80-100 liters by cervicoallantocentesis (C. R. Kumar et al., 2019; Manokaran et al., 2020). A rubber pipe may be used to remove fluid from the uterus (Kapadiya et al., 2018). Uterine ecboic sulpho bolus, metronidazole, and furazolidine may be used to prevent uterine infection and subsequent metritis occurrence (Kapadiya et al., 2018; Praveen et al., 2015; Kapadiya et al., 2018; C. R. Kumar et al., 2019). Post mortem of the dead fetus revealed the presence of ascetic fluid in the abdominal cavity (A. Kumar et al., 2019). The prognosis for future fertility is guarded in cases of adventitious placentation but favorable for nutritional causes (Drost, 2007).

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Fig 1: Buffalo with fully distended Abdomen



Fig 2: Fluid drained out using kitchen gas pipe



Fig 3: Fluid drained out



Fig 4: Buffalo after fluid removal



Fig 5: necrotic lesion on neck



Fig 6: Sub cutaneous emphysema at rump region



Fig 7: fetus



Fig 8: necrotic lesion on neck after healing

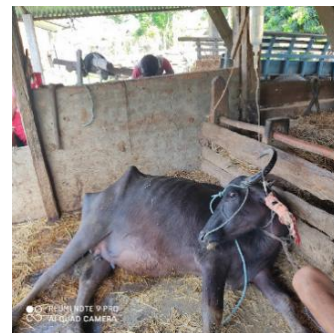


Fig 9: Fluid therapy