

CASE REPORT

Delivery of Bull Dog Calf from a Hydroallantoic Murrah Buffalo

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ABSTRACT

An 8 years old Murrah buffalo in its 5th party was presented with the history of 9 month of gestation and sudden bilateral abdominal distension since last 25 days. Animal was 7 anorectic with pale mucus membrane and had staggering gait. *Per vaginum* examination revealed closed cervix with intact cervical seal. By transrectal palpation only the fluid in the uterus could be palpable. Based on history and clinical examination findings, it was diagnosed as hydroallantois. Parturition was induced using cloprostenol and dexamethasone. Beside this an intracervical injection of cloprostenol was also given on 6 o'clock and 12 o'clock position (250 µg each) of external os to hasten the cervical dilation. A dead bulldog calf was removed with manual traction after 26 hours of initial treatment. It was concluded that the cloprostenol and dexamethasone are effective for the induction of parturition in animals suffering from hydroallantois provided fluid from the allantoic sac is removed slowly.

1. Introduction

Hydroallantois is a sporadic gestational disorders characterized by rapid build-up of amber colour watery fluid in allantoic sac of foetal membranes. Principle aetiology behind the development of hydroallantois is placental pathology leading to speedy and anomalous bilateral distension of abdomen^[1]. Fluid accumulation occurs over a period of 5 to 20 days in late gestation and is always giving suspicion for twin/triplet pregnancy^[2].

The normal quantity of allantoic fluid is approximately 20 litres however in case of hydroallantois it can rise up to 150-260 litres^[3]. Hydroallantois contributes to about 80-90% of the total gestational hydropsies^[4]. Drost^[5] has linked hydroallantois to aberrant placentome function as a result of the formation of adventitious placentation. Caruncles of one of the horns are usually implicated and become non-functional in this condition, which then affects the functioning of the remainder of the placentomes, resulting in larger and hypertrophied

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placentomes [6]. Hypertrophied placentomes have proliferation and hyperplasia of cytotrophoblastic cells in an attempt to bring more oxygen to compensate for the deficient oxygen [7].

Usual treatment is by terminating the pregnancy using prostaglandin (PGF_{2α}) and corticosteroids [8] however the sudden removal of allantoic fluid is avoided to prevent hypovolemic shock [9]. Slow and gradual removal of allantoic fluid may be an alternative method to avoid hypovolemic shock to the dam [10]. Slow and gradual draining of allantoic fluid via trans-cervical allantocentesis along with bilateral jugular fluid administration is done to prevent hypovolemic shock in dam [11].

2. Case History and Observations

An 8 years old Murrah buffalo in its 5th party was presented to the Department of Veterinary Gynaecology and Obstetrics, DGCN COVAS, Palampur with the history of 9 month of gestation and sudden bilateral abdominal distension (Figure 1) since last 25 days. The buffalo was anorectic with pale and tacky mucus membrane and had staggering gait. Animal was not showing any sign of parturition. General physical examination revealed the buffalo to be dyspnoeic and dehydrated. By transrectal palpation only fluid along with the fremitus could be palpated. *Per vaginum* examination revealed closed cervix with intact cervical seal. Transrectal ultrasonography was done using 5 MHz frequency transducer which revealed only anechoic foetal fluids but fetus or placentomes could not be visualized. On the basis of above observations, it was concluded to be a case of hydroallantois.



Figure 1. Bilateral abdominal distension



Figure 2. Bulldog calf



Figure 3. Compensatory caruncular hypertrophy

3. Treatment and Discussion

Parturition was induced in the buffalo using prostaglandin F_{2α} (Inj. Cloprostenol 500 µg -2 mL; I/M) and corticosteroids (Inj. Dexamethasone- 10 mL; I/M). Besides this an intracervical injection of prostaglandin F_{2α} was also given 1 mL each on the 12 o'clock and 6 o'clock position of external os. Parenteral administration of NS (8 L; I/V), Intalyte (1 L; I/V), DNS (1 L; I/V), Metrogyl (1 L; I/V) along with antibiotic (Inj. Intamox-4.5 g; I/M), multivitamins (Inj Tribivet-20 mL; I/M) and haemostats (Inj. Texableed-15 mL; I/M) was done. After 6 hours of induction, *per vaginum* examination revealed dilated external os (4 fingers) with internal os only 1 finger open. To prevent the animal from hypovolemic shock animal was treated the next day with the same supportive therapy as mentioned before. After 16 hours of parturition induction, internal os was 3 fingers open hence cervical massage was opted using warm solution of 2% carboxy methyl cellulose for 10 minutes [14]. The message was

repeated for three times. After 26 hours of induction, cervix was fully dilated and allantoic sac was palpable per vaginally. Since the buffalo started straining so in order to avoid bursting of allantoic sac and its rigorous voiding, it was manually ruptured by creating small aperture with finger for slow evacuation of the fluid. Approximately 70% of the allantoic fluid is drained by the animal itself by straining while in order to drain the remaining fluid and to catch hold the foetus, the abdomen was pushed dorsally using a wooden plank. About 150 litres of amber coloured frothy fluid was removed from the uterus. After draining the fluid, fetus limb was palpable. Additionally, owing to faulty drainage of allantoic fluid multiple trabecular strands were present inside the uterus. Genesis of these strands is either fibrinous or foetal excretory precipitates or it can be an admixture of both. An underdeveloped, bull dog calf in posterior presentation was removed by applying manual traction. Post-delivery, parenteral administration of NS (8 L; I/V), Intalyte (1 L; I/V), DNS (1 L; I/V), Metrogyl (1 L; I/V) along with antibiotic (Inj. Intamox-4.5 g; I/M), multivitamins (Inj Tribivet-20 mL; I/M) and haemostats (Inj. Texableed-15 mL; I/M) was done. Buffalo showed respiratory distress hence to counter the distress and stabilize the buffalo Inj. Nikethamide (20 mL; I/V) and Inj. Dexamethasone (8 mL; I/V) were administered. In spite of efforts the buffalo died after 14 hours post-delivery.

In present case the fetus extracted was a bull dog calf with chondrodysplasia. Post-delivery foetus measurements were listed in Table 1. Grossly, the placenta was also malformed as evinced by non-homogenous structural variation in caruncles suggestive of caruncular hypertrophy. Occurrence of chondrodysplasia is a very rare condition that too if it occurs in concordance with hydroallantois^[12]. Chondrodysplasia is the disturbance of endochondral ossification leading to disordered bone development^[13]. Hydroallantois is associated with abnormal functioning of placentomes due to development of adventitious placentation^[5]. Two major suggested etiologic pathologies that contribute towards hydroallantois are increased production of fluid or decreased trans-placental absorption^[7]. Additionally, chorionic arterial thrombosis and fibrinoid necrosis of blood vessel can also be regarded as the etiology behind improper placental function^[15]. In the present case, the placenta was also diseased showing compensatory caruncular hypertrophy.

It was concluded that the cloprostenol and dexamethasone are effective for the induction of parturition in animals suffering from hydroallantois provided fluid from the allantoic sac is removed slowly. However the occurrence

of foetal defects requires more inputs for confirmation.

Table 1. Post-delivery foetal body measurements

S. No.	Characteristics	Length/Weight
1.	Foetus weight	7.4 kg
2.	Crown rump length	10.4 cm
3.	Bi-parietal head diameter	13 cm
4.	Poll-nostril length	13.5 cm
5.	Length of fore limb	14 cm
6.	Length of hind limb	7.8 cm
7.	Fetal length	26 cm
8.	Chest girth	51 cm

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