

## TRANS CERVICAL ALLANTOCENTESIS FOR MANAGEMENT OF HYDROALLANTOIS IN MURRAH BUFFALO : A CASE REPORT

SUMIT SINGHAL, ANKIT KUMAR AHUJA\*, NAVJOT SINGH, NAVGEET SINGH,  
V K GANDOTRA and PRAHLAD SINGH

Department of Veterinary Gynaecology and Obstetrics, College of Veterinary Science,  
Guru Angad Dev Veterinary and Animal Sciences University, Ludhiana-141004, India

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### SUMMARY

Treating hydroallantois by casearean section causes sudden removal of allantoic fluid. It may lead to hypovolemic shock and animal may collapse. Hence, slow and continuous removal of allantoic fluid may be an alternative method to prevent shock to the animal. The following report records a successful management of hydroallantois in buffalo per-vaginum.

**Key words:** Buffalo, Casearean section, Hydroallantois, Per-vaginum.

Hydroallantois is one of the gestational disorder in which sudden increase in allantoic fluid occurs in allantoic cavity due to fetal membrane pathology leading to bilateral enlargement of abdomen (Roberts, 1971). The condition is more common in last phase of third trimester in dairy cattle but the occurrence is less in buffaloes and heifers (Srinivas and Sreenu, 2006). Hydroallantois is usually considered as a maternal abnormality, where the rapid and abnormal distension of abdomen occurs (Drivers and Peek, 2008) due to rapid accumulation of watery, ambered 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). Hydroallantois is usually treated by terminating the pregnancy using prostaglandin  $F_{2\alpha}$  and corticosteroids (Manokaran *et al.*, 2011) but the sudden removal of allantoic fluid leads to hypovolemic shock and animal may collapse (Peiro *et al.*, 2007).

A buffalo in 3<sup>rd</sup> parity was presented at clinics, with the history of over-gestation by one month. Animal was not showing any signs of impending parturition. According to owner, there was gradual increase in size of abdomen within last 2-3 months. Urination and defecation had also been decreased. Per-vaginal examination revealed soft but closed cervix, while per-rectal examination suggested fluid filled uterus with no palpable fetal parts. No fremitus was felt per rectally. During per rectal examination, movement of hand was limited and trans-abdominal palpation suggested presence of fluid thrills. Hence, based on history and clinical examination, the case was diagnosed as hydroallantois. The physiological parameters such as temperature, heart rate, respiration rate were noted and they showed slight variation from the normal being on lower side as, 99.2° F, 92 beats per min. and 15 per min., respectively.

Induction of parturition was done using Inj. Cloprostenol sodium (500 µg-total dose), Inj. Dexamethasone (40 mg-total dose) and Inj. Diethyl Stilbesterol (40 mg -total

dose). Per-vaginum examinations at frequent intervals (24 hours) were done to assess the condition of cervix as shown in Table 1. Dexamethasone, a corticosteroid mimics cortisol in its action by promoting maturation of fetal lungs and initiates the parturition signal. Cloprostenol sodium being a natural analogue of  $PGF_{2\alpha}$  will lyse the CL and aides in maternal contractions. Estrogen is believed to sensitize the endometrium for oxytocin.  $PGF_{2\alpha}$  regulates uterine function by influencing  $PGF_{2\alpha}$  synthesis via endometrial oxytocin receptors (Bo *et al.*, 1995; Leung and Wathes, 2000). Combination of various therapeutic agents was ascertained by looking at the condition of cervix and response of animal to these agents.

After 72 hours, animal started straining and allantoic water bag was ruptured using guarded Scalpel blade. Immediate infusion of 10 liters Normal Saline Solution intravenously was carried out. Approximately 120-140 litre of fluid drain occurred within a span of three hours. Per-vaginum examination was done to evaluate the fetal status. It revealed a tear in left lateral and ventral side of uterus and fetus was presented in normal presentation but in the abdominal cavity. Thick iron bar was used to lift the abdomen and drain out the fluid (Fig 1). As the fetus was hanging in the abdominal cavity, it was not possible to deliver the fetus out. Fetotomy of head was done to decrease the size of fetus. A decision of placing the animal in supine position was taken (Fig. 2). The limbs of the animal were tied with rope and it was placed in supine position. Sodium salt of Carboxy Methyl Cellulose (10 liters) was infused in the uterus around the fetus for lubrication. The limbs of fetus were secured and tied with obstetrical chains for applying traction. Hence, delivery of dead female calf was made possible with fetotomy of head using lubrication and mild traction. Per- vaginum examination revealed a tear of about 30 cm length on the ventro-lateral part of uterus. Blind suturing of the uterine tear was done to bring apposition of the opposing

\*Corresponding author : ankit.ahuja1947@gmail.com

**Table 1**  
**Per-vaginum examinations and treatment used**

S. No.	Time duration (hours)	Condition of cervix	Drugs used (I/M)	Fluid infusion (I/V)
1.	0	Soft and closed	Dexamethasone + Cloprostenol Sodium	Normal Saline Solution (10 liters)
2.	24	Soft and two fingers open	Dexamethasone + Cloprostenol Sodium	Normal Saline Solution (5 liters)
3.	48	Soft and three finger open	Dexamethasone + Diethyl Stilbesterol	Dextrose 5% (5 liters) + Metronidazole (2500mg/500ml)
4.	72	Soft and Four fingers open	Diethyl Stilbesterol+Valethamate bromide+ Dexamethasone	Dextrose 5% (5 liters) + Metronidazole (2500mg/500ml)



Fig. 1: Lifting of abdomen.



Fig. 2: Buffalo in supine position

membranes. Post-operative treatment included fluid therapy (Normal saline solution 5 litres, IV), antibiotic (Ceftatime 1g I/M) anti-inflammatory cum analgesics (Megludyne 15 ml I/M), rumenatorics and multivitamins (10 ml I/M) for the next 5 days. Due to over gestation, the fetus was absolute oversized. Sudden increase in fluid imposed pressure over diaphragm resulting in respiratory distress.

In the reported case, during admission, the cow was severely affected with hydroallantois but was able to walk with difficulty. Hence it was decided to terminate the

pregnancy. At the same time to avoid shock due to sudden expulsion of allantoic fluid, transcervical allantocentesis was performed with scalpel blade. This led to slow removal of excessive allantoic fluid. Simultaneous fluid replacement through intravenous route helped to avoid the shock due to fluid loss. Eventually the animal died after 3 days due to peritonitis. The shifting of fluid from interstitial tissue or cell to cavity might have been responsible for dehydration, sunken eye, dullness and depression (Arthur *et al.*, 1989). In hydroallantois, accumulation of allantoic fluid is rapid due to placental abnormalities and possible interference with sodium metabolism at the cell level (Jackson, 1980).

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