

Case Report

**CLINICAL MANAGEMENT OF HYDRALLANTOIS IN A COW USING
TRANSCERVICAL ALLANTOCENTESIS METHOD:
A CASE REPORT**

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Abstract: Treating hydrallantois either by medical termination of pregnancy or by cesarean section causes sudden expulsion of allantoic fluid. It may lead to hypovolemic shock and collapse of the animal. Hence, the slow and continuous removal of allantoic fluid may be an alternative method to avoid shock to the animal. In the present case transcervical allantocentesis was used as a method to remove excessive allantoic fluid and the medical termination of pregnancy was done. A Jersey crossbred cow was diagnosed with hydroallantois during 7th month of gestation was fixed with Rusch catheter (18G) at internal os of cervix to drain the excessive allantoic fluid slowly. Simultaneously the pregnancy was terminated with inj. Dinoprost tromethamine (Lutalyse[®], Pfizer Animal Health, 25 mg, intramuscular) and inj. Dexamethasone sodium phosphate (Lupidexa[®], Nitin Lifesciences Ltd., 40 mg, intramuscular). The allantoic fluid was completely drained out in 22 hours and the cervix fully dilated after 58 hours of termination. The cow was clinically treated with antibiotic, antihistamine and intravenous fluids for one week and recovered uneventfully.

Keywords: Hydrallantois, allantocentesis, Rusch catheter.

Introduction

Hydrallantois is usually considered as maternal abnormality, where the rapid and abnormal distension of abdomen occurs (Drivers and Peek, 2008) 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). Roberts (1971) stated that this dropsical condition usually affects both fetus and fetal membranes. Hydrallantois is usually treated by terminating the pregnancy using prostaglandin F_{2α} and corticosteroids (Manokaran *et al.*, 2011) but the sudden removal of allantoic fluid leads to hypovolemic shock and collapse of the animal (Peiro *et al.*, 2007). The slow and continuous removal of allantoic fluid may be an alternative method to avoid shock to the animal (Noakes *et al.*,

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2009). This case report explained the successful clinical case management of Jersey crossbred cow diagnosed with hydrallantois adopting transcervical allantocentesis method.

Case History and Clinical Observations

A pleuriparous 7 month pregnant Jersey crossbred cow was referred to the Teaching Veterinary Clinical Complex, Veterinary College and Research Institute, Namakkal with the primary complaint of acute, progressive, bilateral distention of abdomen since last 20 days. The cow was symptomatically treated for tympany for one week. Upon physical examination, the cow had bilateral symmetric abdominal distension, respiratory distress and expiratory grunt. The animal was able to stand. It walked with difficulty. The general clinical examination of the animal showed body temperature of 38.6°C, respiration rate of 40/min., heart rate of 82/min., and mucous coated dung. The clinical parameters were found within the normal range. Vaginal examination revealed that the external os of cervix was closed. The rectal examination showed enlarged and fluid filled uterus with a difficulty in palpating the fetus. The fluid filled uterus occupied the entire abdominal and pelvic cavity obliterating above the pelvic brim. Based on the history, clinical, rectal and vaginal examination, it was diagnosed as advanced/severe case of hydrallantois.

Treatment and Discussion

The treatment plan for this was termination of pregnancy using hormonal preparations. At the same time to avoid the hypovolemic shock due to sudden expulsion of allantoic fluid during termination, it was decided to perform transcervical allantocentesis for slow and continuous removal the excessive allantoic fluid. For transcervical allantocentesis a Rusch catheter (18G) was fixed at the level of internal os of cervix by piercing allantoic bag. The balloon was inflated with 10 ml air. The parturition was induced with inj. Dinoprost tromethamine (Lutalyse[®], Pfizer Animal Health, 25 mg, intramuscular) and inj. Dexamethasone sodium phosphate (Lupidexa[®], Nitin Lifesciences Ltd., 40 mg, intramuscular) (Youngquist and Threlfall, 2007 and Manokaran *et al.*, 2011). The animal was clinically treated with inj. Streptopenicillin (2.5 gm, intramuscular), inj. Analgin (20 ml, intramuscular), inj. Chlorpheniramine maleate (400 mg, intramuscular) and inj. Dextrose normal saline (10 liters, intravenous, BID) and the treatment was continued for next two days. The allantoic fluid was slowly and continuously passed out through the Rusch catheter (Figure 1). After 22 hours around 121 liters of allantoic fluid came out and the abdominal distension got reduced. The cervix was fully after 58 hours. By manual traction, an anteriorly presented dead male fetus was delivered (Figure 2). The placenta was retained and manually removed. It was leathery

and had inflammatory changes and was tightly adhered to the caruncles. The cow was continued with treatment for one week and recovered uneventfully.

Hydrallantois is the single pathological condition present in 85 to 90% of dropsical conditions in the bovine (Youngquist and Threlfall, 2007). 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). Sometimes, the adventitious placentae are formed due to congenital lack of maternal caruncles (Roberts, 1971). The treatment of hydrallantois required a realistic approach and nicety of judgement. In all the cases of hydrallantois, progressive distension of abdomen was observed due to excessive accumulation of allantoic fluid. This might lead to serious strain on the animal which eventually causes loss of condition and recumbency. Further if it was allowed to continue, it would end in fatal to dam (Noakes *et al.*, 2009). Cases that have become recumbent should be slaughtered (Roberts, 1971). In affected but non-recumbent animals, the strain on the animal could be relived by terminating the pregnancy or by cesarean section (Noakes *et al.*, 2009). With both the methods it was imperative that the fluid should be allowed to escape slowly so as to prevent the occurrence of hypovolemic shock associated with splanchnic pooling of blood. Various methods to induce parturition in cattle suffering from hydrallantois were reported in the literature including use of natural or synthetic prostaglandin F₂α preparation (Manokaran *et al.*, 2011) and estrogen preparations (Peiro *et al.*, 2007). In the present, dinoprost tromethamine (natural prostaglandin F₂α) was used which helped for successful termination of pregnancy.

In the reported case, during admission, the cow was severely affected with hydrallantois 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 allentocentesis was performed with Rusch catheter. This led to slow removal of excessive allantoic fluid. Simultaneous fluid replacement through intravenous route helped to avoid the shock due to fluid loss. The characteristic tough and leathery placenta and hypertrophied caruncles and cotyledons were observed in this case. The continuous treatment following removal of fetus resulted in uneventful recovery of the cow.

Summary

The hydrallantois in a cow was successfully treated by transcervical allentocentesis for slow removal of excessive allantoic fluid and medical termination of pregnancy using

prostaglandins and corticosteroids. The slow removal of excessive allantoic fluid prevented the animal from hypovolemic shock. The fetus was removed after 58 hours of termination of pregnancy. The clinical treatment of cow with antibiotic, antihistamine and intravenous fluid led to uneventful recovery.

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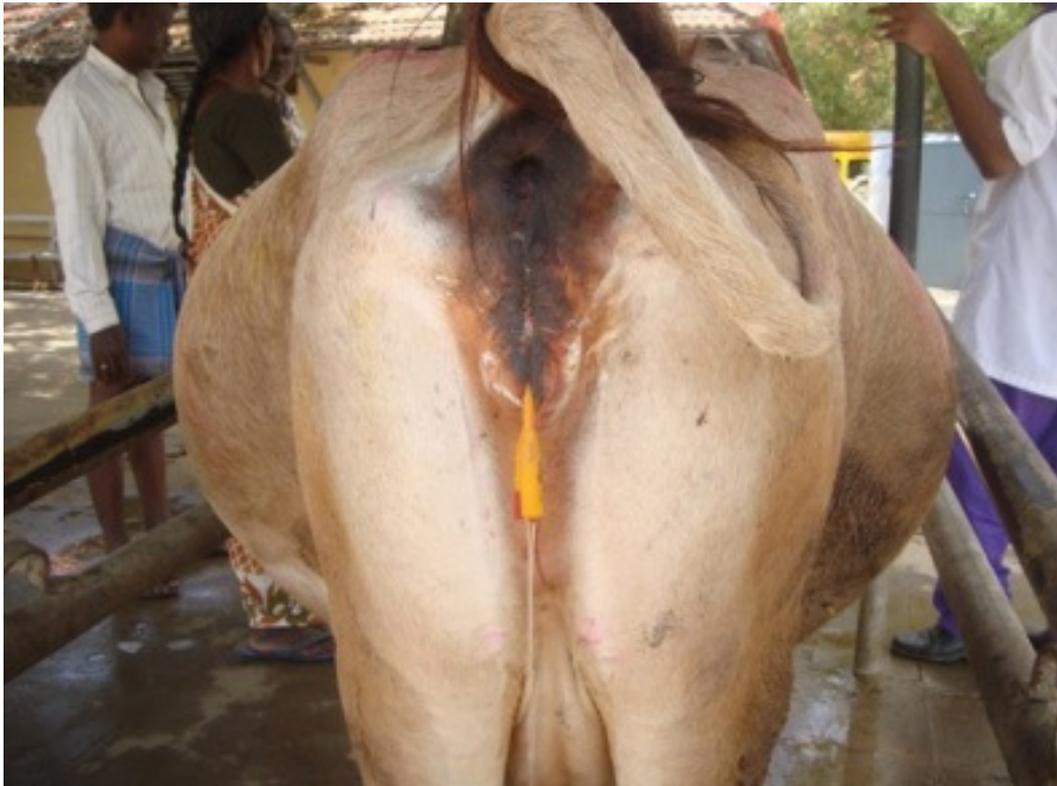


Figure 1: Transcervical allantocentesis through foleys catheter



Figure 2: Fetus removed