MANAGEMENT OF HYDRALLANTOIS AND PATHOLOGICAL DESCRIPTION OF AFFECTED FETUS IN A MURRAH BUFFALO – A CASE REPORT

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ABSTRACT

A 6 years old Murrah buffalo pregnant about 8 months was presented with the history of sudden bilateral distension of abdomen and obstetrical examination revealed that the uterus was distended with voluminous quantity of fetal fluid. The pregnancy was terminated and 60 h after termination, the cervix was fully dilated and fetal membranes were intentionally ruptured which resulted in gushing of about 150 liters of watery amber colored allantoic fluid from the uterus which confirmed the diagnosis of hydrallantois. By normal traction, dead male fetus was delivered. The dead fetus was subjected to gross and histopathological examination to confirm the cause of hydrallantois.

Keywords: *Bubalus bubalis*, buffaloes, hydrallantois, fetus, pathology

INTRODUCTION

Hydrallantois is characterised by rapid accumulation of clear, watery and amber coloured allantoic fluid over a period of 5 to 20 days in last gestation and is always giving suspicion for twin/triplet pregnancy (Morrow, 1986). It is more frequent in pluriparous animals than heifers. The pathophysiology of hydrallantois is related to the reduction of placental vascularisation resulting in metabolic changes in the placental tissue and fetal membranes thereby accumulating fetal fluids. Apart from this fetal malformation, fetal hepatic or renal disorders and umbilical cord torsion also causes hydrallantois (Kapadiya *et al*., 2018). The present report records an advanced case of hydrallantois, its successful management and pathological causes in a Murrah buffalo.

CASE HISTORY AND CLINICAL OBSERVATIONS

A Murrah buffalo aged about 6 years on its third gestation was presented with the history of sudden bilateral distension of abdomen (Figure 1), anorexia, constipation and loss of condition progressing for past 8 days. The animal was pregnant about 8 months and general clinical examination revealed rectal temperature of 38.1^{o}C, respiratory rate of 23 per minute and heart rate of 78 per minute. Per vaginal examination revealed patent vaginal passage, absence of vaginal discharge and closed cervix. Per rectal examination revealed that the uterus was grossly enlarged and filled with voluminous quantity of fluid which occupied the entire abdominal and pelvic cavity. Fetal parts and

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placentomes were not accessible. Based on history, clinical observations and obstetrical examination, the case was diagnosed as hydrallantois and it was decided to terminate the pregnancy.

TREATMENT AND DISCUSSION

Decision was taken to go for a hormonal approach of cervical dilatation (Manokaran, 2005 and Manokaran *et al*., 2011). The animal was administered with Dinoprost tromethamine - 25 mg total dose intramuscular and Inj. Dexamethasone sodium phosphate - 40 mg total dose intramuscular in order to induce parturition. The animal was treated clinically with Inj. Streptopenicillin (5 gm intramuscular), Inj. Analgin (20 ml intramuscular), Inj. Chlorpheniramine maleate (250 mg intramuscular) and Inj. Ringer's lactate (10 litres BID) for three consecutive days. The animal was examined per vaginally for cervical dilatation daily. After 60 h of termination, the cervix was fully dilated with intact fetal membranes (Figure 2). Fetal membranes were intentionally ruptured which resulted in gushing of about 150 Liters of watery amber colored allantoic fluid from the uterus which confirmed the diagnosis of hydrallantois. As the fetus was small in size, it was delivered manually by normal traction with the help of obstetrical snare. An anteriorly presented male dead fetus was delivered (Figure 3). The placenta was tightly adhered to maternal caruncles and was removed manually along with fetus. The placenta was edematous, leathery and gelatinous with maternal caruncles were larger and appeared hypertrophied (Figure 4). Following fetal delivery, Inj. Calcium borogluconate (450 ml intravenous), Inj. Ringer's lactate (10 litres intravenous), Inj. Oxytocin (40 IU intravenous), Inj. Streptopenicillin (5 gm intramuscular), Inj. Analgin (20 ml intramuscular) and Inj. Chlorpheniramine maleate (250 mg intramuscular) were administered. The antibiotic and antihistamine were continued for 5 days and animal recovered uneventfully.

The dead fetus was subjected to gross and histopathological examination. The gross pathological examination revealed underdeveloped and smaller sized fetus. The outer surface of the fetal kidneys were covered with perirenal fat with difficulty in peeling off capsule. Left kidney appeared edematous and haemorrhagic. Right kidney appeared soft and pulpy (Figure 5). The remaining visceral organs appeared normal grossly. Histopathological examination of kidney revealed edematous changes with dilatated tubules (Figure 6) and underdeveloped glomerulus. Lungs revealed complete absence of alveoli (Figure 7). Liver showed degenerative changes with failure to form hepatic cords (Figure 8).

Hydrallantois was usually reported in animals with diseased uterus in which most of the caruncles were non-functional and atrophied and rest appeared enlarged, edematous and diseased which lead to formation of adventitious placenta (Drost, 2007). If the treatment was not initiated earlier, it would end in fatalality to dam (Noakes *et al*., 2009). Treatment should be opted only for affected non-recumbent animals and recumbent animal should be slaughtered (Roberts, 1971). In hydrallantois case, different treatment protocols such as use of $PGF_2\alpha$, dexamethasone and estrogen preparation have been opted to induce parturition (Manokaran *et al*., 2011; Kapadiya *et al*., 2018). Along with induction hydrallantois affected animal should be administered with large quantity of fluids and dexamethasone to prevent the shock due to rapid drainage of fetal fluids which was followed in the present study (Resum

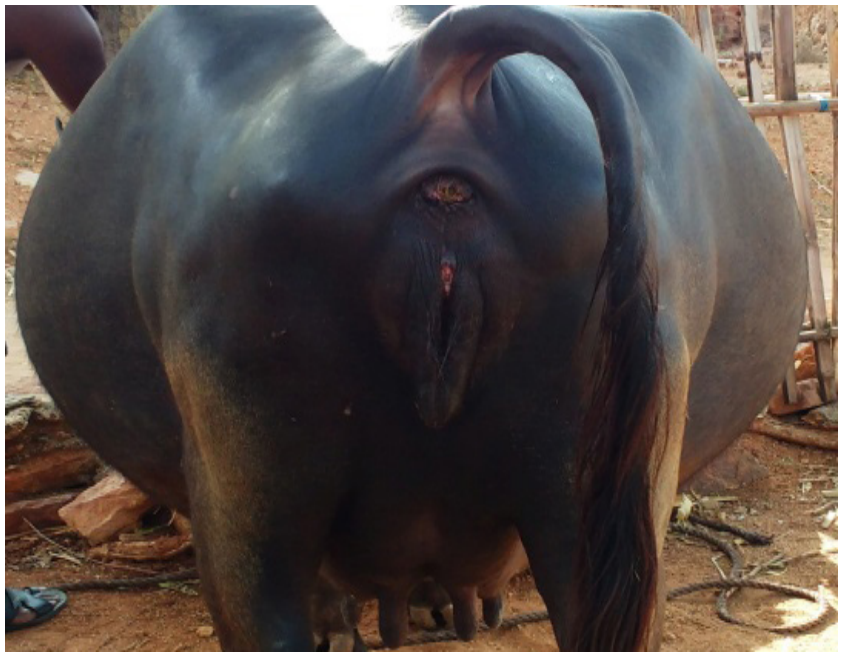

Figure 1. A murrah buffalo presented with bilateral distension of abdomen.

Figure 2. After termination, affected buffalo showed intact fetal membranes.

Figure 3. A dead male fetus delivered was underdeveloped and smaller in size.

Figure 4. The placenta was edematous, leathery and gelatinous with maternal caruncles were larger and hypertrophied.

Figure 5. The outer surface of the fetal kidneys were covered with perirenal fat with left kidney appeared edematous and haemorrhagic. Right kidney appeared soft and pulpy.

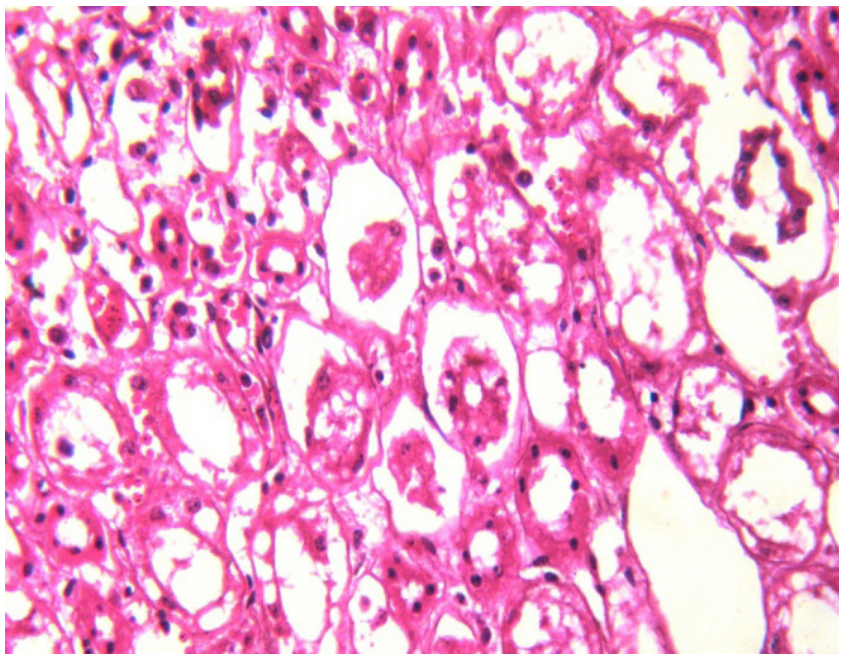

Figure 6. Histopathological examination of fetal kidney revealed edematous changes with dilatated tubules.

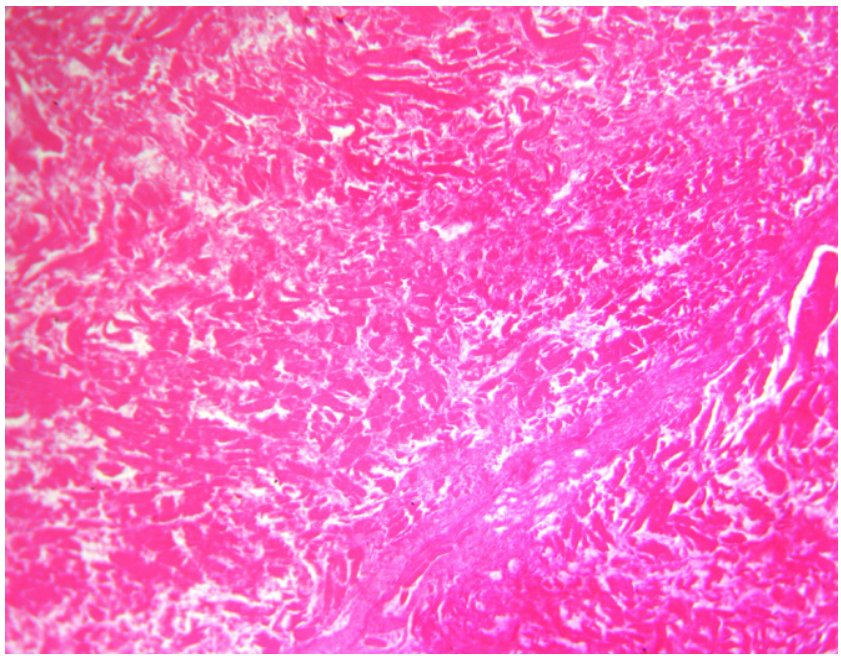

Figure 7. Fetal lungs showed complete absence of alveoli.

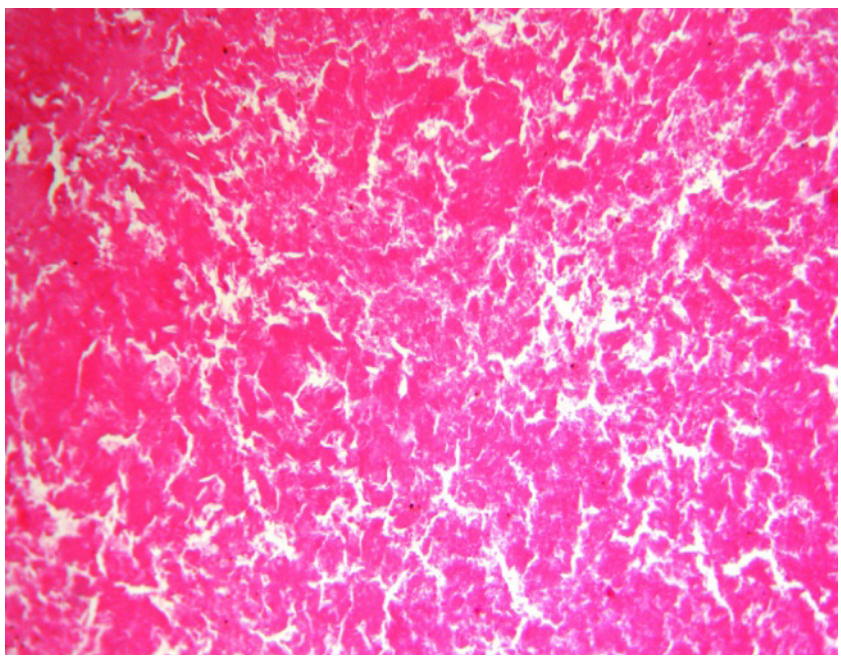

Figure 8. Fetal liver showed degenerative changes with failure to form hepatic cords.

et al., 2016). In present study, fetus appeared to be underdeveloped, edematous with gross renal abnormalities which could possibly attributed to the excessive accumulation of allantoic fluid inside the allantoic cavity. Fetal kidney usually shows moderate to severe dilatation of renal tubules which is in accordance with present study (Alagar *et al*., 2017). The characteristic tough, leathery and hypertrophied caruncles were observed in the present study (Manokaran *et al*., 2011). In present study, the changes associated with fetal kidney which could possibly caused hydrallantois in a buffalo and pathological examination played a significant role in arriving the cause of hydrallantois.

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