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Successful management of hydrallantois in a Macheri ewe

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Abstract
A pluriparous Macheri ewe on its 4th month of gestation was brought with the history of sudden bilateral distension of abdomen, staggering gait, anorexia and expiratory grunt for the past three days. Based on clinical signs and ultrasonographic examination it was diagnosed as Hydroallantois. Successful pervaginal fetal delivery and complete recovery of the dam was reported by combination of abdominocentesis, medical termination of pregnancy and proper postoperative care in this present case.

Keywords: Macheri ewe, Hydrallantois, twin pregnancy, abdominocentesis

Introduction
Dropsical condition of the allantoic part of the fetal membrane such as hydrallantois is characterized by sporadic (within 5 to 10 days) accumulation of fetal fluid within the allantoic sac leads to bilateral abdominal enlargement, difficulty in locomotion, reduced or complete cessation of feed intake, dyspnea, prepubic tendon rupture, recumbency and death due to hypovolemic shock (Meng *et al.,* 2019 and Selvaraju *et al.,* 2020) [5, 14]. Incidence of reproductive disorders like fetal mummification with normal fetus (Alagar *et al.,* 2016) [16] and total uterine prolapse after the abortion or normal delivery (Selvaraju *et al.,* 2014 and Velladurai *et al.,* 2016) [17, 15] were reported in small ruminants. Among the prepartum reproductive disorders incidences of hydrallantois in farm animals is less but its occurrence common in bovines (Roberts, 1998) [11] and rarely reported in small ruminants (Sharma *et al.,* 2023). Exact diagnosis of this condition based on history, external signs and ultrasonographic examination in small ruminants (Selvaraju *et al.,* 2020) [14] and additionally by rectal examination in bovines (Manokaran *et al.,* 2016) [7] were reported by different authors. Various treatment protocols suggested for successful recovery of the dam from this pathological condition were Medical Termination of Pregnancy (MTP) alone by Selvaraju *et al.* (2012), MTP with transcervical allantocentesis by Manokaran *et al.* (2016) [7] and cesarean section by Palanisamy *et al.* (2015) [8]. Perusal of recent literatures revealed occurrence of hydrallantois is very rare in sheep and this present paper documents the effective management of hydrallantois in a Macheri ewe by MTP with abdominal allantocentesis.

Case history and clinical observation
A 4-months pregnant Mecheri sheep presented with the history of sudden bilateral distention of abdomen to Veterinary Clinical Complex, Veterinary College and Research Institute, Namakkal. Owner reported that last two gestations the sheep had twin pregnancy with normal lambing but presently animal had sudden abdominal distension since 3 days. Further, owner stated that the animal was treated for bloat by field veterinarian and cessation of feed intake was noticed for the past two days. Clinical examination of the sheep revealed dyspnea, slow staggering gait and bilateral abdominal distension (Fig. 1). On abdominal percussion fluid splashing was found and fetal parts were not palpable. Patent vaginal passage with closed cervix and intact cervical seal was found by vaginal examination.

On ultrasonographic (USG) examination fluid accumulation within the uterus was visualized and placentomes were not observed (Fig. 2). Based on the history and clinical examinations the case was diagnosed as hydrallantois.

Treatment and Discussion

In this present case, the sheep was able to stand up but walked with difficulty and dyspnea was noticed due to abnormal distention of the uterus. Hence, it was decided for slow release of uterine fluid by abdominal allantocentesis (Fig. 3). Before the allantocentesis the animal was treated with intravenous administration of Ringer's Lactate 500 ml and Dextrose normal saline 500 ml to avoid the hypovolemic shock. After that MTP was done by intramuscular administration of $PGF_2\alpha$ (125 µg) and dexamethasone (10mg) and close monitoring by the owner was advised. Complete cervical dilatation was noticed 16 hours after the MTP and two dead male fetuses (Fig 4) were delivered following mild traction. Immediately after the fetal delivery sheep was treated with ink. Dextrose normal saline (300 ml), inj. Ringer lactate (300 ml), Inj. ceftriaxone (500 mg) and Inj. Oxytocin (10 IU) by intravenous route and inj. Chlorpheniramine maleate (2 ml) administered intramuscularly. For next 3 days post-operative treatment was advised and normal feed intake and physical activities were reported by owner after a week. On postmortem examination of fetus, no abnormality could be detected and abnormal placentation of adventitious type was recorded by macroscopically examination of fetal membranes after the manual removal of the fetal membranes (Fig. 5).

Hydroallantois is rare prepartum reproductive disorder in small ruminants and it occurs during midgestation (Purohit, 2006) [10]. The most common etiological factor for occurrence of hydrallantois in small ruminants is placental dysfunction or placental abnormality (Tripathi and Mehta, 2015, Sharma *et al.*, 2023) [1-3], uterine infection (Alagar *et al.*, 2017) and renal pathology (Sharma *et al.*, 2023) [4]. In this present case abnormal placentation and twin pregnancy was reported as possible causes for occurrence of hydroallantois. The volume of intrauterine accumulation in affected small ruminants ranges from 11 liters (Alagar *et al.*, 2017 and Sharma *et al.*, 2023) [1, 2, 4] to 13 litres (Morin *et al.*, 1994) [6] and it was 12 litres in the present case. Excessive intrauterine accumulation of uterine fluid causes the dyspnea with the result of abdominal enlargement increases hydraulic pressure on diaphragm thereby affected animal needs the treatment protocol towards evacuation of uterine accumulation (Selvaraju *et al.*, 2020) [18]. Manokaran *et al.* (2016) [7] reported transcervical allantocentesis in buffalo to reduce the hydraulic pressure on the diaphragm and to avoid sudden death due to hypovolemic shock but this procedure is not possible in sheep and goats. Hence, in this present case uterine evacuation was done by abdominal allantocentesis.

Fig 1: Bilaterally distended abdomen

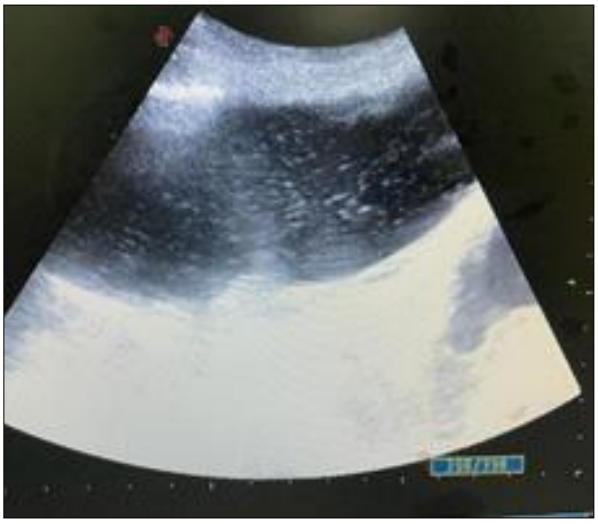

Fig 2: Fluid-filled uterine lumen without placenames on USG examination

Fig 2: Abdominal allantocentesis

Fig 3: Twin fetus delivered after the MTP

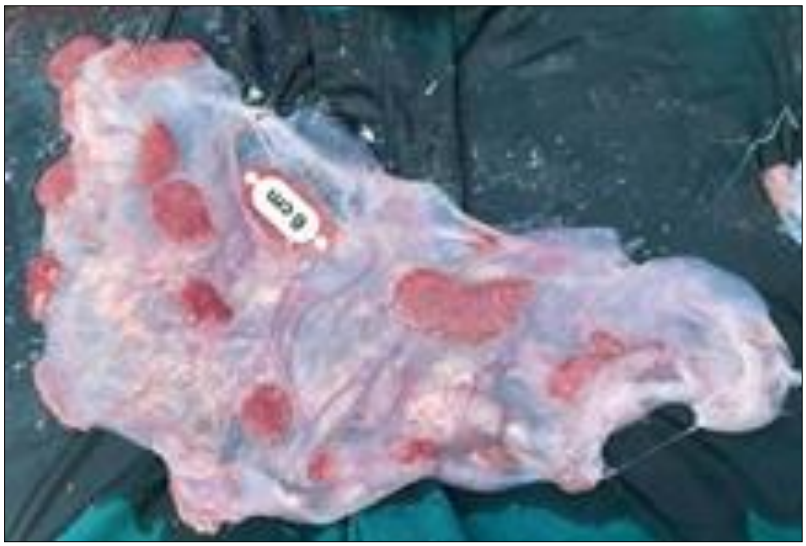

Fig 4: Abnormal placentation

Conclusion

It was concluded that placental disfunction and twin pregnancy has a correlation with occurrence of hydrallantois and MTP with abdominocentesis is advisable treatment for hydrallantois in small ruminants to avoid the sudden death due to hypovolemic shock.

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