HYDROALLANTOIS IN A GOAT (CAPRA-HIRCUS)-A CASE REPORT

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Summary
A rare case of hydroallantois and its clinical management in a full term pregnant 2½ year old pleuriparous goat having symptoms of anorexia, respiratory distress, bilateral abdominal distension, reluctant to stand and move is reported. Abdominal ultra sonographic examination revealed presence of large volume of fluid with enlarged but reduced numbers of cotyledons. Abominocentasis was performed for relieving respiratory distress; fluid therapy along with prostaglandin (cloprostenol sodium) and dexamethasone was administered for induction of parturition and managing the shock. Approximately 13 liters of allantoic fluid was removed in 2 consecutive days and two fetuses (one viable and one non viable) without any observable congenital defect were delivered by gentle traction. Parenteral as well as intra-uterine antibiotic coverage along with oral ecbolic (exapar liquid) was given for 5 days. Placentas were expelled out after 48 hours

Key Words: Hydrallantois, Goat, Placental dropsy, capra-hircus

Introduction:
Hydroallantois, a placental dropsical condition characterized by progressive bilateral abdominal distension, respiratory distress, depression, tendency to adopt recumbent posture, difficulty in standing and walking is caused by abnormal accumulation of large volume of allantoic fluid in the uterus of pregnant female during 5-20 days period in last trimester of pregnancy. It has been commonly reported to occur in bovine, Bubaline, equine and rarely in ovine, canine and caprine(Milton et al., 1989; Morin et al., 1994, Jackson, 2004 and Kumar et al., 2012 and Feliciano et al., 2013). Present paper reports about a rare case of Hydroallantois and its successful therapeutic-obstetrical management in a goat with twin pregnancy.

Case History and Clinical Observations:
A full term pregnant 2½ year old pleuriparous goat (45 kg body weight) in her second parity was presented at teaching veterinary clinical complex of the college with complaint of anorexia, respiratory distress, difficulty in walking and progressive abdominal distension since 5-6 days. Clinical examination revealed normal rectal temperature, tachycardia, restlessness, cessation of rumination, dyspnoea and enormous ventro-bilateral abdominal distension (Fig 1). Animal was depressed and reluctant to move or stand. Fluid splashing was observed by abdominal ballotment indicating presence of large volume of fluid but fetus could not be palpated. Per vagina examination revealed closed cervix. Fluid filled uterine horns with enlarged but lesser numbers of
placentomes were observed by ultrasound examination (Fig.2).

**Obstetrical Management:**
Animal was infused with 2.5 liters of fluid containing 1.5 liter ringer’s lactate and 1.0 liter of DNS administered intravenously. Approximate 6.5 liters of amber colored fluid was removed by abdominocentesis with trocar and canula for relieving the pressure discomfort. Microbiological culture and microscopic examination of gram stained smear revealed absence of cellular contents or bacteria in the fluid. Two litres of fluid (1 liter of DNS and ringer’s lactate each) was again infused after removal of amniotic fluid. Prostaglandin (Injection Pragma 250 mcg IM) and 20 mg of dexamethasone were administered intramuscularly for induction of parturition and also for counter acting shock. Next day 2 liters of fluid (1 liter DNS and Ringer’s

Lactate each) was again given and 3.5 liters of abdominal fluid was removed by abdominocentesis. Goat started active labour by the evening. Per vagina examination revealed dilated cervix, allantoic sac was punctured and 3 liters of allantoic fluid was removed again thereafter, water bag was ruptured and two fetuses (one viable and one non-viable) were delivered by judicious traction applied over forelegs of fetuses. Fluid therapy (2.5 liters of Ringer’s lactate) was administered again. Goat was injected with Oxytocin (15 IU IM) and Calcium borogluconate (40 ml IV). Parenteral as well as intra-uterine antibiotic coverage (Oxytetracycline 10 mg/Kg B.wt IM and 500 mg IU) as well as oral ecbolic was given for 5 days.

**Discussion:**

Hydralantois is the single pathologic factor present in 85 to 90% of dropsical conditions in the bovine (Barth, 1986, Milton et al., 1989, Peek, 1997 and Tonillo et al., 2003). The exact cause of hydralantois is not certain but it has been reported to associated with consumption of legumes with high estrogens, hypothyroidism and placental or uterine disease (Mobini et al., 2002) or diseased uterus wherein caruncles are not functional and rests of the placentomes are enlarged and diseased (Bhattacharyya et al., 2012) or development of adventitial placentation (Maxie, 2007). The abnormal
functioning of placentomes has been attributed to inadequate numbers of caruncles (Maxie, 2007). The deficient numbers of caruncles associated with hydroallantois may be due to either a congenital lack of development or uterine disease acquired in later life (Peek, 1997). Other contributing factors associated with hydroallantois are increased permeability as well as decreased active transport of sodium across the choioallantoic membrane, hormonal imbalances, fetal renal disease (Morin et al., 1994), multiple fetuses in the uterus, fetal liver disease, uterine torsion and/or twisting of the umbilical cord, deficiency of vitamin-A causing decreased endometrial resistance to infections (compromises the number of caruncles), malnutrition and cardiac or renal diseases in the ewe (Toniollo et al. 2003). In present case decreased numbers of enlarged placentomes as observed during ultrasonography are indicative of diseased uterus or placenta with resultant inadequate/abnormal functioning of placentomes might be the underlying cause of hydroallantois.

Physical examination and transrectal or transabdominal ultrasonography is recommended for confirming the hydroallantois in ewes and does (Milton et al., 1989, Morin et al., 1994 and Bhattacharyya et al., 2012), in present case, physical examinations, clinical findings and trans abdominal ultrasonography was employed for arriving at a definite diagnosis of hydroallantois. The symptoms, clinical and ultrasonographic findings in present case were similar to those reported in earlier reports of hydroallantois in ewes (Milton et al., 1989, Piero et al., 2007 and Bhattacharyya et al., 2012), does (Misri and Singh, 2001, Philip et al., 2012 and Kumar et al., 2012), buffaloes (Chandolia et al., 1989, Prabhakar et al., 1991, Phogat et al., 1993), Cattle (Memon et al., 1981, Basile, 1987, Elmore, 1992) and Dog (Feliciano et al., 2013).

Increased hydraulic pressure on diaphragm due to immense abdominal enlargement causes difficulty in breathing thereby treatment should be directed toward evacuation of uterus and termination of pregnancy by caesarian or by use of prostaglandins. If a large volume of allantoic fluid in the uterus is expelled rapidly, circulatory shock can develop (Misri and Singh, 2001). In present case, abdominal discomfort and respiratory distress were relieved by percutaneous abdominocentesis, simultaneously fluid therapy was given for managing hypovolumic shock; dexamethasone and prostaglandin were given for terminating the pregnancy and also for counteracting the shock. Bhattacharyya et al. (2012) and Morin et al. (1994) preferred caesarian section for relieving severe abdominal discomfort and respiratory distress.

Normal allantoic fluid volume in sheep and goats has been reported to be between 0.5 to 1.5 liters (Wintour et al., 1986, Toniollo et al., 2003 and Mary and David, 2009). 6 to 18 liters of amniotic fluid has been reported to remove from the cases of hydroallantois in sheep and doe (Morin et al., 1994, Peiro et al., 2007 and Philip et al., 2012). In present case, 13 liters of allantoic fluid was removed by percutaneous as well as per vaginal amniocentesis.

Most fetuses of animals with hydrallantois are underdeveloped with congenital defects or are apparently normal but not viable (Milton et al., 1989, Henry et al., 1991 and Morin et al., 1994), in present
case one non-viable fetus was underdeveloped whereas one viable fetus had normal development. None of the fetus had any observable congenital defect. Possible sequelae of hydroallantois have been reported as ventral herniation or rupture of the prepubic tendon (Barth, 1986, Mobini et al., 2002 and Stich and Blanchard, 2003), rupture of the uterus, rectal and vaginal prolapse, dystocia associated with uterine atony, retained placenta, metritis and agalactia (Toniollo et al., 2003). In present case, atony of uterus and placental retention for 24 hours were observed.

References