AN UNUSUAL CASE OF HYDRAMNIOS IN A BUFFALO

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ABSTRACT

In a full term pregnant buffalo, hydramnios was clinically evident as the recumbent animal was under severe stress due to excessive bilateral abdominal distension. Transrectal palpation revealed a taut uterus (bulged, tense and inelastic) with inaccessible fetus and placentomes. Subsequent to induced cervical dilatation, ~200 L of amniotic fluid was removed and a fully developed calf without any gross abnormality was delivered. All these observations are atypical for a case of hydramnios.

Keywords: amniotic fluid, buffalo, congenital defect, hydramnios, vaginal delivery

INTRODUCTION

Bovine placental hydropic conditions viz., hydrallantois and hydramnios are estimated to occur in 1 out of 7500 pregnancies (Jackson, 1995). Moreover, in this species, the incidence of hydramnios is 9 to 15 times less than hydrallantois (Jackson, 1995 and Drost, 2007). Normally, amniotic fluid is secreted by the fetal salivary glands, lungs, skin and associated structures, and the volume is regulated through swallowing by the fetus (Zdunczyk and Grunert, 1999). Hydramnios is primarily the result of fetal anomalies, whereas the placenta is normal, and is characterized by the gradual accumulation of amniotic fluid during the last half of pregnancy (Drost, 2007). Excessive accumulation of amniotic fluid can go up to ~25 L (normal volume of amniotic fluid near term is 3-5 L; Arthur, 1969). Moreover, a case of hydramnios is usually not of clinical importance for the dam; however, here we report an unusual case of hydramnios in a buffalo.

CASE HISTORY AND OBSERVATIONS

A multiparous full term pregnant Murrah buffalo was brought to the university veterinary hospital with the history of severe straining for the last 48 h but no water bags had appeared. About 24 h back, a field veterinarian has administered (i.m.) cloprostenol (a prostaglandin F$_2$α analogue) as well as dexamethasone. Subsequent to prolonged straining, the dam appeared to have become exhausted and was recumbent at the time of presentation. Appreciable bilateral distension of the abdomen was causing serious strain, thus respiration rate was greatly hampered, appetite was reduced and there was loss of condition. Vaginal examination revealed closed cervix of normal palpable texture. Transrectal palpation suggested a taut uterus (bulged, tense and inelastic) which was

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not manually depressed. In addition, fetal parts and placentomes were not accessible. These transrectal findings were suggestive of fetal death followed by development of severe edema of uterine wall. Actually, in full term pregnant bovines, rectally diagnosed elasticity of the uterus is known as the most reliable indicator for the survival of the dam (Schönfelder et al., 2003). Therefore, looking into the overall condition of the dam as well as the transrectal observations, the prognosis of the dam for survival appeared guarded. Caesarean section was the only option for the delivery of calf but it was thought that dam may not be able bear the surgery.

**TREATMENT AND DISCUSSION**

Decision was taken to go for a non-hormonal approach of cervical dilatation (Honparkhe et al., 2009). Cervical massage was carried out twice, 15 minutes each, at hourly interval with warm sodium carboxy methyl cellulose (SCMC; Carmellose-Na 1%, WDT, Garbsen, Germany) gel. Within 3 h, the cervix was completely relaxed. Fetal fluid bags palpable at the pelvic inlet were intentionally ruptured. To the surprise of obstetricians, ~200L of amniotic fluid came out of uterus followed by the assisted delivery of a fully developed calf which survived only for an hour. A thorough look at the physical characteristics of the calf revealed no gross deformity. The placenta was retained; therefore appropriate ecbolics were given through intrauterine route along with intravenous electrolyte therapy. The next day, buffalo was discharged with routine prescription of antibiotics and supportive therapy.

Although occurrence of hydrallantois is reported in buffaloes (Srinivas and Sreenu, 2006), a report of a hydramnios case in buffaloes is not traceable. In a usual case of hydramnios, the findings will suggest that: a) dam is clinically unaffected, b) occurrence of peripartal complications is uncommon, c) transrectal examination will reveal an enlarged uterus with retained elasticity, and the fetus and placentomes will be palpable, d) there will be accumulation of 20-30 L amniotic fluid which is not evident until spontaneous calving, e) a small, defective and nonviable calf will be delivered at the expected time of calving and f) the prognosis of dam is good for life (Arthur, 1969 and Drost, 2007). On contrary, in the observed case of hydramnios, a) the dam was under severe pain due to excessive abdominal distension and was recumbent, b) transrectal palpation suggested a taut uterus and the fetus as well as the placentomes were not palpable, c) presence of ~200 L amniotic fluid was recorded subsequent to induced calving, and d) a fully developed calf without any gross abnormality was delivered with minor assistance. All these observations recommended the present case as an unusual hydramnios.

In fact, the external and transrectal observations recorded here were suggestive for hydrallantois in which the volume of fetal fluid may go up to 273 L (Noakes et al., 2001). However, looking into the gross characteristics of fetal fluid, it was clearly evident that the case was of hydramnios. During the last third of pregnancy period, both amniotic and allantoic fluids differ substantially from each other (Wintour et al., 1986). Usually, allantoic fluid is watery, clear and amber-colored transudate similar to fetal urine, whereas amniotic fluid is an exquisite lubricant which has mucoidal, viscid and syrupy consistency (Jackson, 1995 and Drost, 2007).

Hydramnios is a congenital defect due to recessive gene (Leipold and Dennis, 1980).
This condition is usually associated with certain cranial abnormalities of the fetus especially cleft palate which lead to impaired swallowing, causing amniotic fluid to accumulate as pregnancy progresses (Jackson, 1995). However, in the present case, no such gross abnormality was evident in the calf delivered. In fact, hydramnios may also occur subsequent to other coincidental abnormalities such as atresia of esophagus, pituitary hypoplasia, and anencephaly in which cerebrospinal fluid accumulates leading to impaired swallowing (Jackson, 1995). Moreover, fetal adrenal insufficiency due to renal dysgenesis or agenesis is associated with hydramnios implying a lack of hormones from this gland in the development of hydramnios (Wintour et al., 1986). Evidence exists that permeability of fetal membranes to various solutes, as well as their capacity to produce and respond to a number of hormones, can affect the fetal fluid composition and/or volume. Progesterone and estrogen are some of the hormones known to affect fetal fluids (Wintour et al., 1986).

REFERENCES


