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A rare case of Hydramnios in cattle and its successful management

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Abstract

Hydramnios is a rare pathological condition during gestation period. Multiple factors can be assigned responsible for its occurrence *i.e.* genetic factor, defective organ system or defective placentation. Its management includes dilation of cervix followed by assisted delivery providing gentle traction as well as provision of intravenous fluid administration in order to prevent of hypovolemic shock associated with splanchnic pooling of blood. In present case we observed about 40 liters of viscous fluid followed by delivery of malformed fetus along with fetal membrane with abnormal cotyledons.

Keywords: Hydramnios, cow, placentation, monster fetus

Introduction

Hydramnios is a dropsical condition of fetal sac in which there is excessive accumulation of fluid in amniotic sac which is associated with genetic (recessive autosomal genes) or congenitally defective fetus. It is a rare pathological condition which accounts 5 to 10% of total dropsy of fetal membranes [8]. Hydramnios is characterized by gradual accumulation of amniotic fluid with steady enlargement of abdomen in dam that is evident during last trimester [1].

Normally, amniotic fluid is secreted by the fetal salivary glands, lungs, skin and associated structures [12], moreover from mid gestation onwards amniotic fluid becomes viscous and syrupy in consistency because watery fluid is swallowed into large bronchi and finally absorbed through fetal intestine however impaired deglutition or renal malfunction [1], that intern leads to accumulation of amniotic fluid as much as 19 to 114 liters against its normal volume *i.e.* 3.8 to 7.6 liters [7], followed by stretching of abdominal muscles leading to typical “pear shape” abdomen.

Case report

A multiparous Non-descript cattle at full term in its second parity was presented to Department of Veterinary Gynaecology and Obstetrics, College of Veterinary Science, DUVASU, Mathura (U.P). History revealed abdominal straining since 24 hours without any discharge through vulva or vagina. Physical observation from rear end of dam manifested appreciable bilateral abdominal distention. Clinical examination exhibiting reduced respiration rate, elevated pulse rate with normothermia. Further per rectal palpation signified large fluid filled uterus however neither fetal parts nor placentomes could be palpated moreover cervix was closed during per-vaginal examination. These above said findings therefore providing positive indication of case as dropsical condition of fetal membranes [6].

Treatment

Therapeutic approach to treat this case was to induce parturition by providing dilation therapy and therefore animal was administered with synthetic prostaglandin (PGF₂α) *i.e.* Cloprostenol Na @ 500 ug, Valethamate bromide @ 48 mg, Dexamethasone @40 mg and Estradiol valerate @ 30mg intramuscularly and kept under observation. After 24 hours there was partial opening of cervix thus it was decided to carryout manual dilation that yielded water bag in birth canal within minute which was intentionally ruptured. Gushing of about 40 liters of viscous and syrupy fluid (Figure- 1) suggested it as amniotic fluid and condition as Hydramnios. Assisted delivery yielded abnormal monster fetus (Figure – 2a & b) followed by expulsion of placenta with abnormal cotyledon (Figure – 3). In order to avoid hypovolemic shock as well as

dehydration associated with splanchnic pooling of blood and fluid loss, 2 litres of dextrose normal saline (DNS)

administered intravenously along with symptomatic treatment with broad spectrum antibiotic and supportive treatment.



Fig 1: gushing of about 40 liters of viscous and syrupy fluid.



Fig 2a: assisted delivery of abnormal monster fetus.



Fig 2b: monster fetus



Fig 3: placenta with abnormal cotyledon

Discussion

Dystocia can be defined as the inability of the dam to expel fetus through the birth canal from the uterus [5], which is classified as maternal cause and fetal cause of dystocia. Dropsical conditions of the concepts appear to be one of the most important factors leading to dystocia. Noakes *et al.* (2001) [6] described three dropsical condition in veterinary obstetrics: placental oedema, dropsy of the fetal sacs and dropsy of the fetus. Hydrallantois and Hydramnios represent dropsy of fetal sacs. According to Vandeplassche *et al.* (1965) [10] hydrallantois is most common (88%), hydramnion occurs rarely (5%), and about (7%) cases occurs together. Both the amniotic and allantoic sacs can accumulate excessive quantities of fetal fluid, thus referred as Hydramnios or hydrallantois, depending on involvement of sac [6].

In present clinical condition the physical as well as per-rectal palpation were suggestive of dropsy of the fetal sacs in which the fetal fluid volume may reach up to 273 L [6], however in our condition we observe around 40 liters fetal fluid. Jackson (1995) [2] and Drost (2007) [1], observed amniotic fluid as lubricating, mucoidal, viscous and syrupy in consistency which is similar in our case too. Hydramnios is a congenital defect due to recessive autosomal gene [3], and mostly associated with congenital abnormalities leading to malformed fetus [2, 4, 9]. Moreover our finding has similitude with aforesaid reports. Jackson (1995) [2] reported that Hydramnios may occur along with other abnormalities such

as pituitary hypoplasia, esophageal atresia and impaired deglutition due to accumulation of cerebrospinal fluid in anencephaly condition. Win tour *et al.* (1986) [11] suggest possible role of various reproductive hormones i.e progesterone and estrogen in dropsical condition of fetal sacs as permeability of fetal membranes alters in response to various salutes as well as hormones which can affect composition and volume of fetal fluid.

Conclusion

Two most common conditions associated with dropsical condition of fetal sacs are hydrallantois and hydramnios. Although these two are rare obstetrical condition in veterinary practice but still causes economic loss to livestock owner. The present study concludes occurrence of Hydramnios based on several findings previously suggested by various authors *i.e.* colour and consistency of fetal fluid and congenitally malformed fetus.

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