Successful Management of Fetal Macerations in two different does

Abstract:

Two cases of fetal macerations were presented at Teaching Veterinary Clinical Complex, Faculty of Veterinary and Animal Sciences, Banaras Hindu University, Barkachha, Mirzapur with varying degree of signs and symptoms in does. The detailed case history, signs and symptoms along with successful treatment and management are discussed in this case report.

Key word: Goat, Fetal maceration, Management, Treatment.

Introduction:

Fetal maceration generally occurs as a sequela to death of fetus followed by putrefaction and autolysis of soft tissues leaving behind hard tissues like bones. The loss of endocrine support essential for carrying out pregnancy along with dilated cervix, which allows bacteria into the uterine environment, predisposes the pregnancy for fetal maceration like conditions. The early signs for this condition may be abortion or presence of the aborted fetus in birth canal or abnormal vaginal discharge. This condition is more common in cattle and buffalo than mare and caprine (Noakes *et al.,* 2009, Bashiru *et al.,* 2020, Rautela *et al.,* 2016, Purohit *et al.,* 2011).The conditions like fetal maceration and fetal emphysema result in fetal mortality post development of fetal skeletons in which cervix is partially or completely dilated resulting in ascending bacterial infection which further leads to putrefaction and dissolution of soft tissue leaving behind hard tissues (Kumar *et al.,* 2007; Mehta *et al*., 2005). In case of sheep and goats, enzootic abortion is caused specifically by a bacteria *Chlamydia abortus*(Stamp *et al.,* (1950). Another most common cause of abortion, embryonic mortality, stillbirths is *Toxoplasma gondii. (Noakes et al., 2019).* In addition to that a slew of organism like *Listeria monocytogene, Chlamydophila abortus, Brucella melitensis, Coxiella burnett, Mycoplasma spp,Leptospiraspp.Salmonellaabortus-ovisc,Campylobacter spp., Toxoplasma gondi, Sarcocystis, Akbane virus, Caprine herpesvirus, Border disease virus* are involved in abortion, still birth, fetal mummifications, fetal maceration in goats (Daniel Givens and Marley 2008).

History

A primiparous Black Bengal doe came to the Teaching Veterinary Clinical Complex (TVCC), Faculty of Veterinary and Animal Sciences (FVAS), Banaras Hindu University (BHU), Barkachha, Mirzapur with the history of early pregnancy and placenta hanging out through vaginal passage since last 2 days. There was reduced feed intake along with foul smelling mucopurulent vaginal discharge barring rectal temperature which was 105ºF, all other vital parameters were within normal physiological range. Furthermore, the animal was slightly dull and depressed.

The second doe was aged 2.5 years with the history of per vaginal mucopurulent discharge from past 10 days along with reduced feed and water intake. The physiological parameters like rectal temperature noted were 103.4 F, Heart rate 73/min, and respiration rate28/min.

Materials and Methods:

The animal was stabilized by giving normal saline 150ml I/V fluid therapy and the tail hairs were clipped. The placenta mass hanging out of the vagina (Fig 1A)was removed gently with gloved hand after proper lubrication. Afterwards, the vaginal passage was further lubricated with Carboxyl Methyl Cellulose powder and a macerated fetus was removed. The examination of fetus revealed that, it was in early stage of around two and half months (Fig 1B). The animal was treated with intra uterine antibiotic Liq. Lenovo AP™– 20 ml I/U, inj. Pragma™0.5 ml (125 mcg – Cloprostenol sodium) given I/M. The doe was further treated for 5 days with Liq. Lenovo AP™- 20 ML I/U (Levofloxacin 20 mg, Ornidazole 40mg, alpha Tocopherol 5mg each ml), inj. Ceftriaxone 12 mg /kg I/M ,Inj. Chlorpheniramine maleate 1 ml I/M .The dam recovered completely with normal feeding and watering post treatment.

On a similar note, upon per vaginal examination of second doe, the cervix was found completely open and fetal parts were palpable. With abundant lubrication using CMC (Carboxyl Methyl Cellulose powder) gel, two macerated fetuses were removed which were partially putrefied but bone separation was not observed (Fig 1D). The animal was treated with inj. Cloprostenol sodium 125mcg I/M , inj. Enrofloxacin 2.5 mg/kg), and intra uterine therapy with inj. Lenovo AP™ 20 ml I/U (Levofloxacin 20 mg, Ornidazole 40mg, alpha Tocopherol 5mg each ml) for 5 days. The doe recovered uneventfully.

Fig. 1: (**A-**A primiparous black Bengal goat with placenta hanging through vulva; B:Putrefied and macerated fetus; C-A 2.5 years non-descript doe affected with partial fetal maceration; D-Partial macerated and emphysematous fetuses.

Discussion:

Fetal maceration cases should be treated with emergency as it may lead to death of the dam. In Case study 1, there was early gestational fetal maceration. Furthermore, there were necrotic changes of cotyledons which were evident in placental mass hanging through vulva along with reddish mucopurulent discharges. Fetal maceration can be noticed as early as in 70 days of gestation after bone development. However, maceration may occur at any stage of pregnancy and has been observed in all species. In the case study 2, the fetuses were partially putrefied and to some extent emphysematous filled with purulent discharge which might have happened due to ascending bacterial infection. . Bacterial infections can lead to putrefaction, autolysis and uterine damage but viral infections don't cause uterine damage. Furthermore, in this clinical investigation, we did not encounter any leathery placenta or fetal tissues or dehydrated fetal mass corroborating to that of fetal mummification. But there was complete putrefaction of internal fetal organs, emphysematous fetus and fetal skin was loosely attached over the body indicating as early maceration of the fetuses. Fetal maceration noticed in both of the fetuses. This obstetrical condition in goats is more serious and fatal due to the presence sharp bony masses *in utero*, decomposed fetus (es) which may lead to toxemia like conditions, and uterine inertia. Severe degenerative and sclerotic changes

may occur in endometrium which severely affects the fertility of animal with poor prognosis (Roberts 2004).

Conclusion:

To save the life of dam normally cesarean section should be performed or separated bones should be removed one by one per vaginally. But specifically, in this case report, the cases were presented in early stage of gestation. The macerated fetuses were removed manually and hormonal treatment was given after removal of fetuses. In both the cases, to evacuate the uterine content, prostaglandin hormone, intra uterine antibiotics along with antihistaminic, was given for complete recovery.

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