Hydrometra in a Goat - Diagnosis, Treatment and Subsequent Fertility

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Abstract

A three-year-old primiparous Saanen goat was presented to the Veterinary Teaching Hospital, College of Veterinary Medicine, Sudan University of Science and Technology for pregnancy diagnosis. Transabdominal ultrasonography was conducted using B-mode real time scanner (Pie medical Easote, The Netherlands) equipped with switchable frequency (3.5-5 MHz) curvilinear transducer. Ultrasonographic findings revealed severely distended anechoic fluid filled compartmentalized uterus. Fetal parts and placentomes were not detected. The doe was diagnosed as having hydrometra and treated with intramuscular injection of Cloprostenol. The animal was returned to estrus 34 hrs post treatment. Rescanning 60 days post breeding revealed pregnancy with triplets which were confirmed at delivery. In conclusion ultrasonography was found to be a reliable and rapid method for diagnosis of hydrometra.

Key words: Ultrasound, Saanen goat, Hydrometra, Cloprostenol


Introduction

Hydrometra or Pseudopregnancy which regarded as synonymous is an anoestrous condition in which aseptic fluid accumulates inside the uterus with the persistence of corpus luteum and absence of fetal parts and placentomes (Pieters and Taverne, 1986; Hesselink, 1993a; Hafez, 2000). Hydrometra represents one of the main causes of infertility in dairy goats (Souza et al., 2013). Many authors worldwide reported its incidence in small ruminant and other animals (Yotov et al., 2009; Tasal et al., 1995; Ahmed et al., 2010; Villanueva et al., 2012). The etiology and pathophysiology of the condition is not well clarified (Wittek et al., 1997; Purohit and Mehta, 2012); and always associated with high progesterone levels, fertilization failure, cessation of cyclical activity and variable degree of abdominal distension (Noakes et al., 2009). In temperate areas it appeared that the incidence of hydrometra in goats varies between 3.0% and 20.8% (Hesselink, 1993a). However, reports of this pathological condition from tropics are scarce.
(Lopez Junior et al., 2004). In Sudan only one report has been published regarding diagnosis of this condition (Ahmed et al., 2010). However, further clinical management of the case was not followed. The objective of the present case study was to report ultrasonographic diagnosis of hydrometra, clinical management and subsequent fertility follow-up for the first time in the Sudan.

**Case History and Clinical Examination**

A three-year-old primiparous Saanen goat was brought to the Veterinary Teaching Hospital (VTH), College of Veterinary Medicine- Sudan University of Science and Technology (SUST), Hilat Kuku, Khartoum North (N 15°37’11.30”, E 32°33’51.35”) for pregnancy diagnosis. According to the history; the goat had been kept with a Saanen buck and other females, the previous pregnancy and parturition was normal. However, the doe was anoestrous for five months. On clinical examination, the doe was in a good body condition with normal body temperature. Bilateral abdominal distension was observed (figure 1).

On per vaginal examination using a vaginal speculum, the os cervix was closed.

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**Figure 1: Abdominal distension**

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**Diagnosis and Treatment**

Transabdominal ultrasound scanning was conducted using B-mode real time scanner (Pie medical Easote, The Netherlands) equipped with switchable frequency (3.5-5 MHz) curvilinear transducer. Ultrasonography revealed enlarged anechoic fluid-filled uterus with traversed hyperechogenic lines of thinly stretched uterine walls. Neither fetus nor placentomes were detected (figure 2). Based on ultrasonographic findings a diagnosis of hydrometra was made.
Treatment was achieved using single intramuscular injection of 125 mcg PGF$_{2\alpha}$ analogue (Cloprostenol). Cloudburst was noticed thirty four (34) hours post treatment and followed by signs of oestrus. The owner was advised to breed the doe on the heat of the next oestrous cycle as shown by (Hesselink, 1993b; Moraes et al., 2007). Follow-up ultrasonographic pregnancy diagnosis on day 60 post-mating was done, the doe was found to carry triplet foeti which were positively confirmed at parturition (figure 3).
Discussion

Hydrometra also called "pseudopregnancy" is a pathological condition of the uterus characterized by accumulation of fluid in the presence of a persistent corpus luteum and failure of the doe to cycle (Hesselink, 1993a; Taverne et al., 1995). The etiology and pathophysiology of the condition has not been completely clarified and continues to be poorly understood (Wittek et al., 1997; Purohit and Mehta, 2012). It is always associated with high progesterone levels secreted by a persistent functional CL, cessation of cyclical activity and variable degree of abdominal distension (Noakes et al., 2009).

In the present case, the uterus was greatly distended with anechoic fluid-filled compartments. No fetal part echoes and placentomes were found. These results are in agreement with (Hesselink and Taverne 1994; Kahn, 2004) who reported that the sonographic diagnosis of pseudopregnancy is based upon recognition of fluid in the uterus in the absence of fetuses and placentomes.

The term “Cloudburst” is used to describe voiding of large volumes of fluid from uterus as pseudopregnancy is terminated (Noakes et al., 2009). Administration of prostaglandin analogues or oxytocin successfully will lead to luteolysis and the cloudburst (Pieteres and Taverne, 1986; Moraes et al., 2007; Purohit and Mehta, 2012). In the present case; successful treatment and subsequent fertility was achieved by using a single dose of Cloprostenol. In conclusion, ultrasound was found to be a useful tool in diagnosis and follow-up of hydrometra in goats as it is rapid, accurate and non-invasive.

References