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Clinical Management of Dystocia due to Fetal Ascites in a Buffalo *(Bubalus Bubalis)*

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ABSTRACT

This case report describes a four and a half year old female buffalo that was brought with a history of full term pregnancy. The buffalo had been straining for the past 12 h after the rupture of the water bag, but there was no progress in the delivery process. During the clinical assessment, the buffalo exhibited a normal body temperature, laboured breathing, and showed a slightly increased heart rate and pulse rate. Transvaginal palpation detected a cervix that was completely dilated, with two limbs protruding into the birth canal. The foetal belly was enlarged, rigid, and contained a significant amount of fluid, which caused pressure fluctuations over the pelvic brim. The clinical examination determined that the foetus is in a posterior presentation and there is ascites present. The dystocia was resolved with the use of abdominocentesis or obstetrical manoeuvres at the veterinary clinical complex in Kumarganj, Ayodhya, Uttar Pradesh. The buffalo was successfully recovered without any complications.

Introduction

Excessive accumulation of fluid in the interstitial tissue spaces or body cavities is known as dropsy or edema. Edema is classified based on the location of fluid accumulation: hydrocephalus refers to fluid deposition in the fetal head, ascites or hydroperitoneum pertains to fluid in the fetal peritoneal cavity, and anasarca describes generalized fluid accumulation in subcutaneous tissues. The increased fetal bulk due to edema can lead to dystocia (Noakes et al., 2019). Anasarca and ascites are relatively rare conditions in buffalo (Ahuja et al., 2017). Fetal ascites has been attributed to both infectious and noninfectious etiologies (Youngquist and Threlfall, 2007). The multifactorial causes of fetal ascites include inadequate drainage or excessive production of peritoneal fluid (Sheetal et al., 2017), lymphatic obstruction preventing the clearance of peritoneal fluid (Sloss and Dufty, 1980), and decreased urinary excretion of water (Jubb and Kennedy, 1970). Typically, the ascitic fetus is small with a markedly distended abdomen due to fluid accumulation, which fluctuates under pressure (Anusha and Mouli Krishna, 2017).

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An ascitic fetus can become wedged in the pelvic inlet, impeding the palpation of the entire fetus via the vaginal route. Unlike in buffaloes, where the condition is less common (Sheetal et al., 2017; Sathya et al., 2018), fetal ascites is frequently observed in cattle (Kumaresan et al., 2013). Generally, fetal ascites can be managed by applying ample lubrication and employing judicious traction. If the fetal abdomen is accessible through the vagina, the fluid can be drained using a scalpel blade or catheter, reducing fetal bulk and facilitating vaginal delivery via traction (Jackson, 2004). However, in certain cases, a caesarean section may be required. This report documents the successful management of fetal ascites in a she-buffalo.

History and clinical observation

A 4.5-year-old pregnant she-buffalo at full-term gestation was presented at the veterinary clinical complex in Kumarganj, Ayodhya, Uttar Pradesh with a history of straining for the past 12 h following the rupture of the amniotic sac, without progression in labor. Clinical examination revealed the buffalo had a normal body temperature, labored breathing, and slightly elevated heart and pulse rates. Transvaginal palpation indicated a fully dilated cervix with two limbs extending into the birth canal. The fetal abdomen was notably swollen, stiff, and exhibited significant fluid fluctuation above the pelvic brim. Due to the rigidity of the limbs, fetal presentation was initially challenging to determine; however, the tail was eventually located and moved outside the vagina. Based on the history and clinical examination, a diagnosis of fetal ascites was made, with the fetus in a posterior longitudinal presentation, right dorso-ilial position, and hind limbs extended through the birth canal (Fig 1).

Fig. 1. Ascitic buffalo fetus in a posterior presentation

Treatment and discussion

After appropriate restraint of the buffalo, the fetal abdomen was accessed vaginally and carefully punctured with an embryotomy finger knife. Approximately 50 liters of straw-colored fluid drained from the puncture site, resulting in a reduction of fetal mass. The deceased male fetus was subsequently delivered using forceful traction, and the fetal membranes were manually extracted. Post-extraction, the dam received intravenous oxytocin (20 IU) once, followed by intramuscular injections of ceftriaxone (3 g) and meloxicam (15 ml) for five consecutive days. The dam recovered without complications.

In buffaloes, the incidence of dystocia due to fetal ascites is 6.9% within an overall 22.41% incidence of fetal oversize-related dystocia (Srinivas et al., 2007). The exact etiology of fetal ascites remains undetermined. However, several potential causes have been suggested, including liver, kidney, and bladder pathologies (Purohit et al., 2012), fetal abdominal mesothelioma, brucellosis (Roberts, 1986), abnormalities in fetal circulation and uterine conditions (Sane et al., 1994), excessive production or inadequate drainage of peritoneal fluid, placental dysfunction (Selvaraju et al., 2009), and lymphatic obstruction (Sloss and Dufty, 1980).

In buffaloes, fetal ascites can occur with both cranial (head-first) and caudal (tail-first) presentations, as observed by Prasad et al. (2011). This means that regardless of whether the fetus is positioned head-first or tail-first within the birth canal, ascites can still manifest, complicating the delivery process. The presence of fluid accumulation in the fetal abdomen increases the overall bulk of the fetus, which can hinder both types of delivery presentations. In contrast, in Holstein-Friesian cows, fetal ascites is typically associated only with a caudal presentation, according to Kumaresan et al. (2013). This indicates that in this breed of cattle, the condition predominantly occurs when the fetus is positioned tail-first during delivery. The reasons behind this difference in presentation between buffaloes and Holstein-Friesian cows are not fully understood but could be related to anatomical or physiological differences between the species, such as variations in fetal development, uterine environment, or breed-specific characteristics that influence the positioning and presentation of the fetus during parturition.

In this case, dystocia caused by fetal ascites was resolved through fetal mass reduction and forceful extraction following accurate diagnosis. This approach prevented the dam from enduring the stress and postoperative complications associated with a cesarean section, while

also avoiding financial loss for the farmer. Moreover, the dam's future fertility is expected to be better compared to outcomes following laparohysterotomy. The dam recovered without any negative consequences. Therefore, it can be concluded that forceful extraction combined with fetal abdominocentesis is an effective method for managing dystocia due to fetal ascites.

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