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Dystocia Due to Fetal Malposition with Abrachia in Yankasa Ewe

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Authors' contributions

This work was carried out in collaboration between all authors. Author DFA designed the study, wrote the protocol, and wrote the first draft of the manuscript. Authors DFA, AA, AH, OGR and MPP managed the literature searches, analyses of the study and authors DFA, AA and AH managed the experimental process. All authors read and approved the final manuscript.

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Case Study

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ABSTRACT

This report describes a case of fetal malposition with abrachia in a Yankasa ewe (*Ovis aries*), presented on the 24th March 2011 to the State House Veterinary Clinic in Abuja, Nigeria. A two-and-a-half year old Yankasa ewe, weighing approximately 35 kg was presented to the clinic and reported to have been in labour for 18 hours prior to presentation. Physical examination revealed

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the following vital parameters: temperature 37.8°C, pulse rate 122 beats/min, and respiratory rate 29 cycles /min. Surgical intervention was identified as the treatment after careful evaluation. Caesarean section was performed to relieve the dystocia. The lamb was stillborn when removed of the ewe. Gross examination of the dead lamb revealed bilateral absence of the forelimbs, a condition called abrachia. This, in addition to the posterior presentation of the lamb, may have contributed to the dystocia. In conclusion, fetal malpresentation complicated with abrachia might have predisposed the ewe to the dystocia. To the best of our knowledge, this case is the first report of abrachia in sheep in Nigeria.

Keywords: Dystocia; abrachia; caesarean section; Yankasa.

1. INTRODUCTION

Dystocia is defined as difficulty in parturition [1]. In sheep (*Ovis aries*), this could arise from a number of causes including, poor maternal pelvic conformation, oversized fetus, fetal malpresentation, inadequate uterine inertia, vaginal prolapse, uterine torsion, or ectopic pregnancy [2-5]. Normal fetal presentation during parturition in sheep is a longitudinal anterior presentation with dorso-sacral positioning [6,7]. Dystocia can occur as a result of abnormal fetal presentation or positions, but normal births can occur despite such abnormalities [2]. In some cases normal births occur when a lamb presents with a single limb and head in the birth canal during parturition [2,6].

Congenital limb deformities may occur as partial or total absence of a limb(s) [8]**.** Where a portion of the limb is missing, either partially or completely, it is referred to as hemimelia [9]. Absence of one or more limbs is known as amelia, and this condition is not commonly seen in tetrapods [9]. Congenital absence of the two forelimbs is termed abrachia and if it is of the hind, it is called apodia [9]. However, where only one limb is missing, this is termed monobrachia [10,11,12]. Congenital limb defects such as abrachia may occur due to toxic substances, infectious diseases, age of the ewe at conception, or genetics/inbreeding [13]. However, this condition has never been reported in the Nigerian sheep breeds.

Yankasa sheep comprise the largest and most widely distributed sheep population in northern Nigeria. Many households are engaged in sheep breeding for cash income, especially during religious and social ceremonies. Breed selection is, therefore, paramount to ensuring maximum profitability within a household.

2. CASE REPORT

On the 24th of March 2011, a two-and-a-half year old Yankasa ewe (*Ovis aries*), weighing approximately 35 kg (Fig. 1) was presented to the State House Veterinary Clinic in Abuja, Nigeria. It was reported to have been in labour for 18 hours at the time of presentation. Physical examination revealed the following vital parameters: temperature 37.8°C, pulse rate 122 beats /min, and respiratory rate 29 cycles /min. The ewe was straining, in pain, with non-smelly serosanguineous discharge in the vagina from the ruptured amniotic sac and the limbs of the fetus visible in the birth canal (Fig. 1). Detailed vaginal examination revealed that the exposed limbs were the hind limbs based on visualization of the hock and tail as landmarks (Fig. 2). Pedal reflex was absent, indicative that the fetus was dead in utero and the fetus was not meconium stained. Caesarean section was performed after careful evaluation of the ewe to deliver the fetus.

Fig. 1. Ewe on presentation to the clinic

3. CAESAREAN SECTION (HYSTEROTOMY)

The ewe was immobilized with 35 mg of xylazine administered intramuscularly. An intravenous catheter was placed peri-operatively in the ewe and IV fluid (normal saline) was infused during the caesarean section. The head/neck of the ewe was elevated during the surgery to minimize aspiration pneumonia. Caesarean section was performed using a standard left paralumbar fossa

approach of the ewe after preparing the site surgically. The area of the incision line was infiltrated with 8 ml of 2% lidocaine hydrochloride. An oblique skin incision was made and the external, internal, and oblique abdominal muscles were separated along the lines of their fibres to expose the peritoneum. A vertical incision over the peritoneum to gain access into its cavity was performed. The gravid uterus was exteriorized from the abdomen to reduce abdominal contamination and to facilitate manipulation of the organ (Fig. 3). An incision was made on the greater curvature of the uterus, an area with fewer blood vessels, to minimize haemorrhage, after which the fetus was delivered through the incision site (Fig. 4). Average vital signs during surgery were: temperature 37ºC, pulse rate 102 beats/min, and respiratory rate 21 cycles /min.

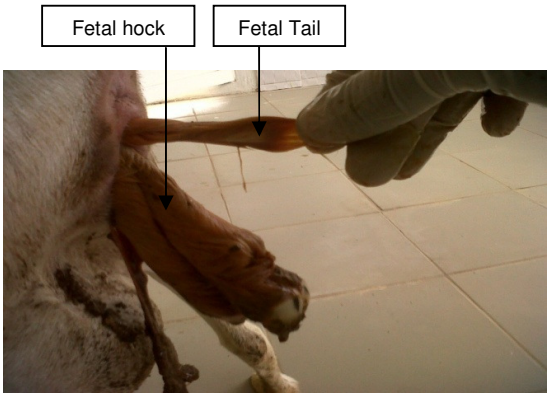

Fig. 2. Hind limbs presented by the fetus

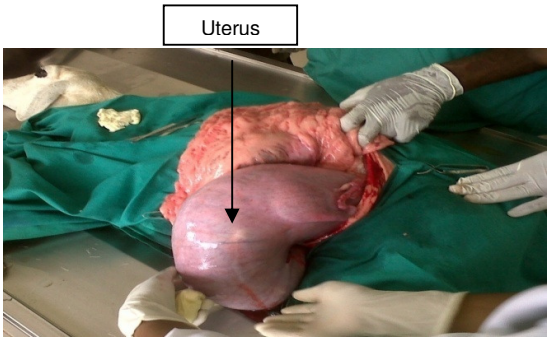

Fig. 3. Exteriorized uterus with fetus in-situ

The uterus was thoroughly lavaged with isotonic saline solution, antibiotics, and cleared of all blood clots prior to closure. The uterus was closed with size 1-0 chromic cat gut using double rows of Cushing suture pattern and replaced into the abdomen, while the peritoneum and abdominal muscles were closed individually using a simple continuous suture pattern with size 1-0 chromic cat gut. However, subcutaneous tissue was closed with size 1-0 chromic cat gut using a subcuticular suture pattern, and the skin was closed using a cruciate suture pattern with non-absorbable suture material (Silk). Oxytocin (10 IU) was administered intramuscularly immediately after the surgery to induce expulsion of the uterine larvage fluid, debris and to hasten uterine involution. The posterior presentation of the lamb, in addition to the abrachia, may have been the cause of the dystocia. The lamb was normal sized, full termed, and a male (Fig. 5). After the surgery, the ewe was allowed to recover normally and the process was unremarkable without complications. The ewe was not culled after surgery.

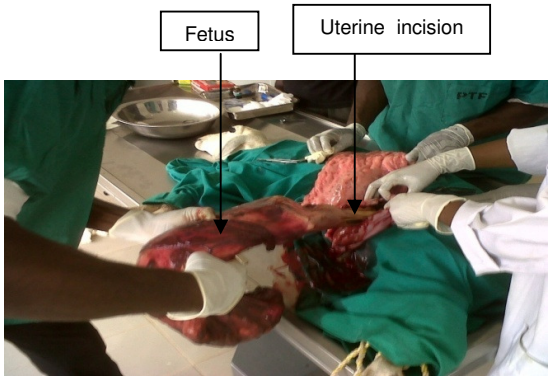

Fig. 4. Extraction of fetus from the uterus

Fig. 5. Fetus showing abrachia

4. POST-OPERATIVE CARE

The ewe was hospitalized and monitored for 5 days. Procaine penicillin and dihydrostreptomycin were administered intramuscularly at 20,000 IU/ kg and 5 mg/ kg mg respectively, for 5 days. The ewe received 5% dextrose with saline for 2 days post-operatively

and placed on a diet of concentrate (cotton seed cake and groundnut cake) on day 3-6. Hay and water were given ad libitum starting from day 7.

5. DISCUSSION

Congenital malformations of the limbs are among the most common congenital anomalies found in animals [14,10,15]. The most probable cause of the abrachia in this case is genetic aberration, possibly due to inbreeding. This is owed to the fact that there were no controlled breeding program, and hence mating was allowed indiscriminately in the flock. The possibilities of toxic plants or infectious diseases as causes of the abrachia were less likely because the flock was kept under intensive management system, with proper health care provided. Feeds were well formulated and screened before feeding the flock.

Abrachia, as well as other congenital anomalies, may lead to dystocia, consequently leading to economic loss due to decreased recruitment of lambs into the population, early culling, and increased medical costs [16]. Fetal malposition is reported as the most common causes of dystocia in sheep [17]. Severe or mild congenital anomalies might predispose to fetal malposition [18,19]. Prolonged dystocia may contribute to fetal death in small ruminants [20,21]. This may have been the situation in this case as the ewe was reported to have been in labour for 18 hours at the time of presentation.

In this report, the abrachia might have been a predisposing factor to the hind limb presentation by the fetus at the time of parturition, resulting in the dystocia. Congenital anomalies in sheep are recently being increasingly reported [22,23].

6. CONCLUSION

Fetal malpresentation with abrachia might have caused the dystocia in the ewe. However, ultrasound to identify any fetal abnormalities or early surgical intervention may enhance maternal and fetal survivability.

COMPETING INTERESTS

The authors declare that there is no conflict of interest regarding the publication of this paper.

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