

SURGICAL MANAGEMENT OF DYSTOCIA DUE TO POOR HUSBANDRY PRACTICE: A CASE REPORT

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ABSTRACT

Dystocia, or difficult parturition, is a significant concern in veterinary reproduction, particularly among primiparous sheep. It can lead to substantial economic losses and adversely affect female fertility. This report focuses on a case of dystocia in an 11-month-old primiparous Yankasa ewe, highlighting the importance of breed-specific characteristics in veterinary intervention. The ewe, weighing 31 kg, was presented with signs of weakness, dehydration, and malnutrition. Physical examination revealed a ringwomb, ruptured fetal membranes, and a normal fetal presentation, diagnosed as foeto-maternal dystocia. Notably, there was a size discrepancy between the ewe and the breeding ram. Surgical intervention was deemed necessary as no laboratory diagnostics could be performed. A caesarean section was carried out under local anesthesia, resulting in the evacuation of a deceased oversized singleton fetus. Post-operative care included antibiotics and anti-inflammatories, with the ewe showing positive recovery signs by day 12. The case underscores the critical role of proper nutrition and management practices to prevent dystocia, especially in primiparous ewes. Livestock owners are encouraged to provide adequate nutritional supplements and ensure optimal breeding practices. Early recognition and intervention in cases of dystocia can significantly improve outcomes for both the ewe and her offspring, ultimately enhancing livestock productivity and welfare. This report advocates for education programs focused on better management strategies for livestock keepers to mitigate economic losses associated with reproductive complications.

Keywords: Caesarean Section, Foeto-Maternal Complications, Livestock Health, Nutritional Deficiencies, Ringwomb

INTRODUCTION

Difficult parturition also referred to as dystocia in veterinary reproduction occurs when first or second stage of parturition is not progressing to the next stage within 30 minutes (Ismail, 2017; Pandey *et al.*, 2018). This is a significant concern in the livestock management, particularly in the primiparous animals. It is considered to be one of the most common conditions in small ruminants which result in huge economic loss and adversely affects female fertility (Srilatha *et al.*, 2024). Pregnancy in sheep, typically lasting 145–155 days, is a critical period requiring careful management to ensure the health of both the ewe and the developing lamb (Okoye *et al.*, 2021; Yaqub *et al.*, 2021). The Yankasa sheep are a Nigerian

indigenous breed, known for their adaptability and plays a significant role in local agriculture (Atabo *et al.*, 2023). Yankasa sheep, like other animal breeds may experience dystocia, particularly primiparous ewes (Adu & Lakpini, 2021), therefore, understanding the breed-specific characteristics and potential complications is essential for successful veterinary intervention (Atabo *et al.*, 2023; Ali & Ojo, 2024).

Various factors are incriminated for this condition which includes size discrepancies between the dam and the sire, numbers of foetus, age, body weight, inadequate nutrition, infection and environmental stressors (Pandey *et al.*, 2018). Broadly, difficult parturition could be as a result of maternal

or fetal cause (Noakes *et al.*, 2009). Maternal causations are due to deficient dilatation of the birth canal (ringwomb), a narrow pelvis, uterine inertia and infection while fetal causations are mainly as a result of oversize, mal-disposition, and monsters (Noakes *et al.*, 2009; Pandey, *et al.*, 2018; Srilatha *et al.*, 2024). A primiparous animal with a history of size discrepancies between the dam and sire, inadequate nutrition or infection especially during pregnancy is at a higher risk of developing pre-parturient and post-parturient complications that can compromise the health and immune function of both the dam and offspring, thereby increasing their susceptibility to diseases and mortality (Kaumbata *et al.*, 2021).

In small ruminants, the global incidence of dystocia is low compared to large ruminants (<5%) (Brounts *et al.*, 2004; Bhattacharyya *et al.*, 2015; Pandey *et al.*, 2018). In Nigeria, incidences are reported by several authors (Muhammed *et al.*, 2001; Umaru *et al.*, 2009; Baraya *et al.*, 2015; Ahmed *et al.*, 2017). The annual mortality rates due to dystocia in small ruminant ranges from 12 to 14% (Kassie *et al.*, 2021; Moliso *et al.*, 2024). Mortality rates are generally higher in malnourished or young animals compared to healthy or adult animals (Maan *et al.*, 2024; Moliso *et al.*, 2024), as seen in this present case

The effective management of dystocia depends on proper diagnostic procedures and techniques; such as diagnostic modalities example ultrasonography, radiography e. t. c., manual correction and traction, foetotomy, hormonal treatment and caesarean section (Srilatha *et al.*, 2024), this is crucial for maintaining the health status of the animal, delivery of foetus (or foetuses) and reduced economic loss in the livestock industry.

CASE HISTORY

This report presents a case of an 11-month-old primiparous female Yankasa ewe weighing relatively 31 kg managed semi-intensively with difficulty in lambing which was said to have commenced over 30 hours before visiting the farm. On physical examination carried at the farm, patient was weak, appeared dehydrated and emaciated, had congested ocular mucous membrane, rough hair coat and was in a recumbent position. There was ringwomb, foetal membrane rupture with mild discharge from the vagina, foetal presentation was normal; anterior presentation, dorso-sacral position and extended posture, no foetal suckling reflex. The udder was engorged, and colostrum was expressed via the teats. The ewe appeared underweight with prominent bones, suggesting malnutrition and poor body condition, the Balami ram that



Figure I: Skin Incision



Figure II: Incision on the less vascular surface of the uterus



Figure III: Suture of abdominal muscle



Figure IV: Skin suture



Figure V: Post-operative care

bred the ewe was relatively weighing 60 kg as seen on the farm which is a considerable size discrepancy. Based on the physical and per-vaginal examination, the condition was diagnosed as foeto-maternal dystocia. Rectal temperature, heart rate and respiratory rate are 41.2°C, 96 beats per minute, and 28 breaths per minute respectively.

Although we could not take any sample for laboratory analysis neither was any diagnostic technique done because, visitation to the farm was not a call for this present case. The client was therefore advised appropriately and consented for the immediate surgical management to save the life of the ewe. The ewe was placed in a right lateral recumbency and hair on the left paralumbar area was clipped liberally and aseptically for caesarean section. No sedative was given because the patient was weak, patient was restrained physically and an inverted 'L' block using 2% Lignocaine hydrochloride at 4 mg/kg was done with Diclofenac sodium at 4 mg/kg IM given as pre-emptive analgesia. A successful caesarean section was carried out routinely in accordance to Hendrickson & Baird (2013). Briefly, a 20 cm vertical skin incision was made on the aseptically prepared paralumbar area (Figure I), subcutis and the lateral abdominal wall muscles were also incised in similar fashion to gain access into the abdominal cavity. The gravid uterus was minimally exteriorized and incised at the less vascularised area (Figure II), a dead over-sized singleton foetus was evacuated, an intra-uterine Vetcotrim® (Sulfamethoxazole 1000 mg + Trimethoprim 200 mg) was given before uterine closure using size 0 chromic catgut by double layers of Cushing oversewn with Lambert, the abdominal muscles and subcutis were sutured using size 0 chromic catgut by simple continuous pattern and subcuticular patterns respectively (Figure III) while the skin was closed using size 1 nylon by Blanket suture pattern (Figure IV). The ewe stood up just after the site dressing (Figure V) and the medications given post-operatively are Penstrept® (Procain penicillin 20,000 i.u/kg and streptomycin 10 mg/kg) and Diclofenac sodium at 4 mg/kg IM for 5 and 3 days respectively, and surgical site was sprayed with Ayurvet Herbal (Charmil®). As part of follow up, phone call was put through and the ewe was reported to be ambulating, feeding well and the suture site was clean and intact. Recovery was uneventful, we returned to the farm on day 12 and removed sutures from the skin.

DISCUSSION

Small ruminants play a crucial role in the livelihoods of many communities, particularly in developing countries, providing meat, milk, fiber, and income (Kassie *et al.*, 2021). However, their productivity is often hampered by various factors, including poor genetics, disease, inadequate nutrition, and suboptimal management practices (Kassie *et al.*, 2021). Indiscriminate breeding, characterized by the absence of

planned selection and disregard for the age of breeding animals, exacerbates these challenges, leading to increased mortality rates and economic losses for livestock keepers (Marle-Köster & Visser, 2021)

Dystocia simply put as difficult parturition which takes more than one hour after rupture of the foetal membranes (Ahmed *et al.*, 2017; Pandey *et al.*, 2018; Srilatha *et al.*, 2024). Understanding the breed-specific characteristics and potential complications is essential for successful veterinary intervention (Atabo *et al.*, 2023; Ali & Ojo, 2024). To manage this condition successfully, prompt diagnosis and intervention is required depending on the cause of the dystocia. This involves various approaches such as manual correction and traction (Pandey *et al.*, 2018), medical or hormonal treatments (Ali, 2011), foetotomy, and surgical via caesarian section (Srilatha *et al.*, 2024). Caesarean section is proven to be an effective method of resolving dystocia in small ruminants with 100% success rate (Srilatha *et al.*, 2024). Early recognition and interference in cases of dystocia will result in a satisfactory outcome both for the dam and the neonate (Ismail, 2017).

In this present case, no sedative was used for the surgical procedure as patient was met on the farm weak, this corroborated another literature that sedatives are not recommended where patients are weak to avoid cardiopulmonary depression or if live foetus or foetuses are expected. (Ismail, 2016). The most common dystocia diagnosed in primiparous females requires caesarean section as a result of foeto-pelvic disparity, incomplete cervical dilatation, fetal emphysema, and fetal monsters (Kumar *et al.*, 2013). Besides, the small ruminant species have small diameter of the pelvis and only limited manual manipulation is possible (Ahmed *et al.*, 2017), therefore surgical intervention is preferable over other means of management.

The efficiency of livestock farming largely depends on several factors; diseases, environment, nutrition and husbandry practices (Ahmed *et al.*, 2017), this patient suffered from poor nutrition and poor husbandry practice. Our report is supported by another statement that faulty management practices are incriminated in most of the parturient problems seen in livestock industry (Waziri *et al.*, 2009). Mating a malnourished ewe with such a ram having twice the body weight of the ewe could be the possible reason for dystocia in this patient, this is in agreement with Ahmed *et al.*, (2017) that breeding malnourished ewe before they reach adequate body weight could exacerbated the occurrence of dystocia particularly in a primiparous animal, which can be detrimental and have negative impact on reproductive lifespan of such animal. The post-surgical management of this patient was uneventful, this is corroborated by another statement that small ruminants have greater than 90% survival rate following caesarean section (Bhattacharyya *et al.*, 2015).

CONCLUSION

The relatively low body weight suggests underlying nutritional deficiencies and primiparous status predisposing the ewe to the dystocia in this present case. Livestock owners are therefore encouraged to supplement ruminant feed with protein sources such as cotton seed cake, palm kernel cake, or brewer's dried grains to improve performance, especially during pregnancy. Furthermore, ad libitum access to clean water is essential for maintaining physiological status and overall health. The surgical intervention performed in this present case was successful and will not compromise the ewe's fertility as the uterus had no complications. This case report highlights the importance of prompt intervention and appropriate surgical management of dystocia as a pregnancy complication and underscores the relevance of livestock reproductive health improvement. We, therefore, advocate for strategic implementation of training and education programs for livestock keepers particularly on proper breeding techniques, improvement of feeding practices by providing animals with adequate nutrition especially during critical periods such as pregnancy and lactation. These strategies could help diminish economic losses, increase farm productivity, improve livelihood of livestock farmers and contribute to sustainable agricultural development.

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