



Management Of Retained Fetal Membrane In A 7-Year-Old Jersey Brown Cow

Jamilu Abdullahi^{1*}, Shafi'u Samaila¹, Abdullahi Arzika¹ and Abubakar Nura²

¹Department of Veterinary Services, Ministry of Livestock and Fisheries development, Sokoto, Nigeria.

²Department of Surgery and Radiology, Faculty of Veterinary medicine, Usmanu Danfodiyo University, Sokoto, Nigeria.

*Corresponding Author's email: jamiluvet01@gmail.com

Received on: August, 2025 Revised and Accepted on: September, 2025

Published on: October, 2025

ABSTRACT

Retained fetal membrane (RFM) is a common post-parturient disorder in dairy cattle, often resulting in reduced fertility and economic losses if not promptly managed. This report describes the clinical management of RFM in a 7-year-old Jersey cow weighing approximately 500 kg, presented to the Veterinary Clinic, Sokoto State, with a hanging mass protruding from the vulvo-perineal region for more than 12 hours after normal calving. Clinical examination confirmed retained placental membranes, with mild discomfort but stable vital parameters. The condition was treated by gentle manual removal of the retained membranes using a sweeping motion to detach the cotyledons from the maternal caruncles. Uterine lavage with 0.9% normal saline was carried out over three consecutive days to flush out residual discharges. Long-acting oxytetracycline was administered at 20 mg/kg body weight along with analgesic and anti-inflammatory drugs. The cow recovered well and no further vulval discharge was observed within 24 hours post-treatment. RFM typically arises from incomplete separation of fetal cotyledons from maternal caruncles, influenced by factors such as dystocia, hypocalcaemia, nutritional imbalance, or hormonal dysfunction. Manual removal remains effective when performed carefully to prevent uterine trauma and infection. This case highlights the importance of early diagnosis and proper management in minimizing complications like metritis, endometritis, and infertility. Preventive measures including balanced nutrition, adequate mineral supplementation, and stress reduction during the peri parturient period are essential for sustaining reproductive performance and minimizing economic losses in dairy production.

Keywords: retained fetal membrane, dairy cow, manual removal, uterine lavage, reproductive disorder.

1.0 INTRODUCTION

Cattle are a vital livestock species in Nigeria, with recent statistics indicating a significant population of over 20 million heads (Ogunleye et al., 2021). Among the reproductive disorders encountered in cows, retained fetal membranes (RFM) remain a frequently reported complication after calving. The condition is defined as the failure to expel the fetal membranes within the normal physiological timeframe, typically established at 12 to 24 hours post-calving (Al-Rukabi et al., 2024).

The prevalence of RFM is generally higher in dairy cattle than in beef herds, with studies from 2021 reporting incidence rates of around 13–19% (Bozorgmanesh et al., 2021). The primary cause is a disruption in the normal separation process between the fetal cotyledons and maternal caruncles, which can be triggered by multiple factors, including dystocia, twin pregnancies, abortion, advancing maternal age, and nutritional imbalances, particularly deficiencies in selenium and vitamin E (Bozorgmanesh et al., 2021; Lameiro et al., 2023). Elevated prepartum serum nonesterified fatty acid levels have also been identified as a significant nutritional risk factor (Lameiro et al., 2023).

This report describes the clinical management of a dairy cow with RFM, an economically significant disorder

that negatively impacts fertility and milk productivity (Costa et al., 2024). Prompt diagnosis and appropriate treatment are crucial to prevent secondary complications such as metritis and toxemia, which can substantially impair reproductive performance (Al-Rukabi et al., 2024). In ruminants, the placenta, the primary functional unit, is formed by the fusion of maternal caruncles and fetal cotyledons. Recent single-cell RNA-sequencing and ATAC-seq analyses have provided new insights into the cellular mechanisms governing placental development and differentiation in cattle, highlighting the importance of understanding this complex process (Pascolo et al., 2024). The normal expulsion of the placenta depends on both detachment of the fetal membranes and effective uterine contractions, and any interference with these mechanisms can result in RFM (Al-Rukabi et al., 2024). Minimizing the occurrence of RFM and ensuring proper veterinary care are vital for enhancing the profitability and sustainability of cattle production systems (Costa et al., 2024).

2.0 HISTORY/SIGNALMENT

A 7-year-old Jersey cow, weighing approximately 500 kg, was presented to the Veterinary Clinic, Sokoto State, following the owner's observation of a hanging mass protruding from the vulvo-perineal region for more than 12 hours after an apparently normal calving. The mass was identified as a retained placenta, the cow

were fed maize bran, fresh maize grasses, and wheat bran, there was history of complete routine vaccinations/medications in the herd.

2.1 Clinical Examination/Case Management

The cow was in standing position with hanging mass (placenta) and foul smelling discharges from swollen vulva indicating early decomposition of membranes. But no evidence of vaginal laceration or tears observed. Initially clinical parameters were recorded (Table 1). The cow was restrained in a chute for examination, and a well-lubricated, gloved hand was introduced into the vagina to assess the contents (retained placenta). Manual removal of the retained membranes was performed by applying gentle traction while using a sweeping motion of the hand to carefully separate the fetal cotyledons from the maternal caruncles.

Table: 1. Clinical parameters of the cows treated for placenta retention

Rectal temperature	41.2 oC
Heart rate	59 bpm
Respiratory rate	36 cpm
Pulse rate	

2.2 Diagnosis

Base on history previous normal calving but placenta not expelled beyond 24 hours and clinical findings mentioned in 3.0 above such as Hanging, decomposing fetal membranes from the vulva Foul-smelling discharge and mild pyrexia, however no evidence of uterine laceration observed

2.3 Treatment

The RFM was manually and gently removed, the. Uterine flushing/lavage conducted using 0.9% NaCL .flushing using continuous for secon and third day using 0.9% NaCL which helped to irrigate and flush out all the brownish foul smelling discharges,. Broad spectrum long acting oxytetracycline administered at 20mg/kg Analgesic and anti-inflammatory drugs administered

2.4 Progress Report

There was no discharge observed from the vulva the following day post treatment and therefore the prognosis for the cow was good



Plate 1: Cow on Presentation



Plate 2: Showing gentle manual traction of the placenta



Plate 3: Showing the bulk of the placenta evacuated

3.0 DISCUSSION

Retained fetal membrane (RFM) is a significant post-parturient disorder, with incidence in cows ranging from 4% to 16%, considerably higher than in other farm animals (Pascolo et al., 2024). This is primarily due to the complex cotyledonary synepitheliochorial placenta in cattle (Pascolo et al., 2024). Recent surveys show that abortion and twinning are consistently identified as major causes of RFM (Bozorgmanesh et al., 2021). This is consistent with the current case where advanced maternal age and prolonged labor were identified as likely causes (Bozorgmanesh et al., 2021).

The economic consequences of RFM are substantial, including delayed uterine involution, increased intervals to first insemination, and higher culling rates (Costa et al., 2024). A 2024 study on dairy herds quantified the economic cost per case of RFM, highlighting losses from reduced milk yield, impaired reproduction, and increased disease risk (Costa et al., 2024).

Therapeutic approaches have been re-evaluated in modern veterinary practice. Forceful manual removal is no longer recommended, as it can damage the uterine lining and increase the risk of metritis (Blate, 2023). Systemic and intrauterine antibiotic treatments are reserved for cases with systemic illness or specific protocol, and their effectiveness in uncomplicated cases remains debated (Giuliodori et al., 2022). Recent research has focused on alternative therapies and rationalized antibiotic use to combat resistance (Giuliodori et al., 2022).

Recent advances in understanding RFM pathophysiology emphasize its multifactorial nature, involving complex immunological, hormonal, and metabolic processes (Pascolo et al., 2024). Impaired migration of immune cells, such as neutrophils and macrophages, to the placental interface plays a key role in placental retention (Pascolo et al., 2024). Metabolic and hormonal changes, including increased cortisol and decreased estradiol, also contribute to impaired immune function (Pascolo et al., 2024). Oxidative stress during the periparturient period further compromises immune function and exacerbates inflammation (Al-Rukabi et al., 2024).

Effective prevention strategies, including managing the dry cow and transition period with proper nutrition, are the most effective means of reducing RFM incidence (Lameiro et al., 2023). Nutritional deficiencies in selenium and vitamin E are well-documented risk factors, and supplementation has been found to be beneficial (Lameiro et

al., 2023). Effective prevention strategies, including managing the dry cow and transition period with proper nutrition, are the most effective means of reducing RFM incidence (Lameiro et al., 2023). Nutritional deficiencies in selenium and vitamin E are well-documented risk factors, and supplementation has been found to be beneficial (Lameiro et

REFERENCE

- Abdullah, U., Rifat, U., Rashid, K., & Khadim, A. (2015). A study on the effects of retained fetal membranes (RFM) on milk production and reproductive efficiency of dairy cows. *Journal of Dairy Science*, 98(1), 1–10.
- Al-Rukabi, A. N., Ali, F. M., Al-Saadi, A. J., & Abdul-Wahid, A. S. (2024). Impact of Retained Fetal Membranes on Concentration of Some Biochemical Parameters and Liver Enzymes in Cattle. *Egyptian Journal of Veterinary Sciences*, 55(4), 1077–1082.
- al., 2023). Ultimately, understanding the complex interplay of risk factors and implementing modern, evidence-based management protocols is crucial for enhancing the health and productivity of cattle (Pascolo et al., 2024).
- Amin, H., Eissa, I., Ibrahim, M., & El-Hassan, M. (2013). Post-partum reproductive disorders and their effect on dairy cow productivity. *Egyptian Journal of Animal Production*, 50(1), 1–11.
- Arthur, G. H. (1979). Retention of the afterbirth in cattle: A review and commentary. *Veterinary Annual*, 19, 26–36.
- Ayele, T., Gizaw, A., & Tegegne, A. (2014). Incidence and risk factors of retained fetal membranes in dairy cattle in central Ethiopia. *Tropical Animal Health and Production*, 46(2), 241–248.
- Blate, M. E. (2023). Treatment of Retained Fetal Membranes in Farm Animals: A Review. *Journal of Veterinary Science & Medical Diagnosis*, 12(4), 1–6.
- Bozorgmanesh, R., Ahmadi, M., & Tabatabaei, S. M. (2021). Retained fetal membranes in dairy cows: Incidence, risk factors, and economic impact. *Veterinary Medicine and Animal Sciences*, 9(1), 19–25.
- Bowen, J. (2011). Placental development. In C. E. Farquharson (Ed.), *Physiology of reproduction in domestic animals*. Blackwell Publishing.
- Bretzlaff, K. N. (1988). Retained fetal membranes. *The Compendium on Continuing Education for the Practicing Veterinarian*, 10(6), 665–670.

4.0 CONCLUSION

This report demonstrates that retained fetal membrane (RFM) is a common clinical condition in cattle that can