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Case Report

Retained Fetal Membrane in a Dairy Cow and its Management Option

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Abstract

An 8-years old Holstein Friesian cow weighing 330 kg was presented with a primary complaint of hanged placenta over 12 hours. Also, lack of appetite and foul smelling vulvar discharges were also seen. The cow had a history of normal calving before a week and prostaglandin (PGF2α) was administered intramuscularly once on the day of calving by the veterinarian. The history and clinical findings of the case revealed that it was diagnosed as retained fetal membrane. Accordingly, the uterus was lavaged with 0.5% povidone iodine and 0.9% NaCl using artificial insemination gun loaded with its sheath to pass through the vulva into the uterine body to manage the brownish foul-smelling discharge. Besides, oxytetracycline 20 mg/kg was also given twice intramuscularly within 48-hour interval to treat uterine infections. Moreover, Flunixin meglumine 1.1 mg/kg was given intramuscularly once a day for three consecutive days to manage the pain and inflammation and the cow recovered unevenly after 7 days post treatment. The current case report discusses a successful management of retained placenta in dairy cow.

Keywords: *Dairy Cow; Retained Placenta; Vaginal Discharge; Prostaglandin (PGF2α)*

Introduction

Retention of fetal membranes is one of the common reproductive complication in ruminants and caused due to retention of the fetal membranes for more than 8 - 12 hrs. after parturition [1,2]. Normally, the expulsion of fetal membrane should occur within 3 - 8 hrs. after calf delivery and considered as retained fetal membrane (RFM) in the cattle if it is not removed within 12 - 24 hours of calving. The incidence of RFM is higher (5% - 15%) in healthy dairy cows than beef cows [3].

Retained placenta predisposes the cows to metritis, displaced abomasum, and mastitis [4]. In cattle, the main etiology of RFM is associated with the disturbance in the loosening process between the fetal cotyledons and the maternal caruncles that is related with many infectious and non-infectious factors [5-7]. The occurrence of RFM increased in case of abortion especially due to infectious causes like brucellosis or mycotic abortion), dystocia, twin birth, hypocalcemia, high environmental temperature, old age of the cow, still or premature birth, placentitis and nutritional disorders [6,8].

Retention placenta is mediated by impaired migration of neutrophils to the placental interface during the periparturient period. The role of this impaired neutrophil extends into the postpartum period and mediates the recognized complications of retained fetal membranes [9]. Moreover, the level of cortisol increase, estradiol concentrations decrease in late pregnancy and increased uterine contraction are observed in cows affected with retained fetal membranes. Also, the ratio of prostaglandin (PG) E_2 to PGF_2 may also have altered. Thus, the retention of fetal membranes will precipitate if the placental detachment is greater than that of uterine motility [10,11].

The diagnosis of the case is obvious since degenerating, discolored and fetid membranes are observed hanging around the vulvar region. Besides, the retained fetal membranes may also remain within the uterus and not be seen easily, in such case their presence may be signaled by a foul-smelling discharge. Systemic illness are not obviously seen in most cases unless it is related to toxemia [6]. Subclinical and uncomplicated cases of retained placenta are great challenge for animal handlers and milkers but generally not directly harmful to the cow. The risk of recurrence during the subsequent parturition will be high in cows that have previous history of retained fetal membranes [9,10,12].

The manual removal of the retained fetal membranes is not recommended since it can be potentially harmful. If the case remains untreated, it may remain till 2 - 11 days. Besides, the use of intrauterine antibiotics has not been found to be effective and may be harmful [6,10]. Even though they are used commonly, oxytocin, estradiol, PGF2α, and oral calcium preparations remains less effective to treat retained placenta. Additionally, systemic antibiotics are administered in case of systemic signs of illness. Eliminating predisposing factors could help to decrease the incidence of retained fetal membranes in areas where the case is high. Provision of balanced feed and mineral supplementation like vitamin E and selenium has been found very important [7,8,13].

Retained fetal membrane remains an economically important disease in the dairy industry that needs rapid treatment to avoid development of further complication such as endometritis and toxaemia [8,14]. The current case report discusses the clinical management of a retained fetal membrane.

Case Presentation

History

An 8-years old Holstein Friesian cow weighing 330kg was presented to the Mekelle University Veterinary Teaching Hospital with chief complaint of suspended inappetence and bad smelling vulvar discharges. The cow had a history of normal calving before a week. Prostaglandin (PGF2α) was injected after 24 hours of calving by the veterinarian. The farm management practices were intensive, while the vaccination and deworming status were up-to-date.

Clinical examination and finding

On presentation, the dairy cow was under good health status and responsive. The rectal temperature, heart beat and respiration rate were within the normal physiological range. Upon detailed clinical examination, brownish foul-smelling discharge was seen on the vulvar opening. Based on the history and clinical findings, the case was diagnosed as retained fetal membrane or placenta.

Treatment and outcome

After proper restraining, the cow was injected with prostaglandin (PGF2α) intramuscularly to remove the retained placenta. Besides, the uterus was lavaged through an intrauterine povidone iodine (0.5%) and a liter of 0.9% sodium chloride (NaCl) using artificial insemination gun loaded with its sheath to pass through the vulva into the uterine body to manage the brownish foul-smelling discharge. The retained fetal membrane was removed after treatment with PGF2α and 0.9% NaCl. The flushing was repeated using 0.5% povidone iodine to flush out all the brownish foul-smelling discharges and increase the chance of full recovery.

Moreover, 20 mL of a broad spectrum long acting oxytetracycline 20 mg/kg was also given intramuscularly twice within 48-hour interval to treat uterine infections. For the treatment, Flunixin meglumine (1.1 mg/kg) was given intramuscularly once a day for three consecutive days to manage the pain and inflammatory. Upon follow up, the cow showed recovery after 7 days post treatment and responded well to the treatments. Then, the vulvar discharge finally disappeared. The owner was advised to avoid the consumption of such milk till

proper withdrawal time (four days post treatment). Besides, it was also advised to provide the cows with proper and balanced rations that contains calcium, phosphorus, vitamin A and E as well as selenium. The current case report discusses a successful management of retained placenta in dairy cow.

Discussion

In the present case, the clinical signs of retained fetal membrane were clearly observed with degenerated cells seen hanging from the vulvar opening more than 24 hrs. post parturition. Foul-smelling vaginal discharge is the only clinical sign seen if retained fetal membrane will remain within the uterus. Besides, it is not considered as harmful unless it is accompanied with systemic illness or toxaemia [6,7].

Most commonly manual removal of retained fetal membranes is not considered as treatment option and has several complications. Intrauterine myometrial stimulants and systemic antibiotics are most commonly administered as treatment for retained fetal membrane. Oxytocin has been used for long as treatment to remove the retained fetal membrane [7,8]. In contrast, the current case report discusses Prostaglandin (PDF2α) found effective in treating the incidence of retained placenta. This might be due to oxytocin is released during parturition by healthy cows to induce uterine contraction and remove the fetal membrane. However, if the fetal membrane is not separated from the caruncles, oxytocin will not hasten its passage and thus, the condition will persist [9,10,12,15].

In the present case, the cow was presented to the veterinary hospital with foul odor vaginal discharge; however, there was no change in physiological parameters. After treatment with PGF2α and a litre of 0.9% sodium chloride into the uterus, the retained placenta together with cloudy colored discharge was removed. This is similar to the previous report of Abdullah., *et al.* [8] in terms of case handling and this can be used to treat a mild case of retained placenta.

Furthermore, retained placenta may lead to septic metritis which is a great concern regarding its future reproductive performance [7,9,16]. Hence, it is advised to administer different spectrum of antibiotics like Oxytetracycline, 10% and 20% [14]. Similarly, broad spectrum long acting Oxytetracycline was administered to treat and prevent further uterine infection.

Conclusion

Early management of retained placenta improved the reproductive performance the dairy cattle and prevent complication such as occurrence of toxaemia, infertility or death.

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