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## Clinical management of retained placenta in a graded murrah Bullalo by local and parenteral therapy

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### Abstract

A pluriparous graded Murrah buffalo calved 4 times was came with history of calved female calf normally 30 hrs before and foetal membrane hanging from the vulva with foetid odour showing straining and anorexia. On clinical examination the animal was dull and depressed with rectal temperature of 39.2 °C. On vaginal examination, the foetid foetal membranes hanging from vulva and four finger dilatations of cervix with foul smelling sero sanguineous discharge comes out along with retained placenta. From the observations the case was diagnosed as retained placental membrane. Placenta was removed manually and to prevent metritis and further septicaemia the animal was treated by parental administration of Inj. Strepto Penicillin 5 gm, Inj. Meloxicam 0.5 mg/kg, Inj. Chlorpheniramine maleate 0.5 mg/kg were administered through intramuscular route for three days. In order to evacuate the placental remnants and uterine contents Inj. PGF<sub>2</sub> alpha 500 micro grams administered through I/m route and advised to give Involon oral liquid first day 200 ml and second and third day 150 ml. Inj. Calcium borogluconate 500 ml, Inj. RL 1000 ml, Inj. Dextrose 25% 1000 ml Inj. Tribivet 30 ml were administered through intravenous route. Oxytetracycline liquid 60 ml through intrauterine route for three days. After days and the animal had an uneventful recovery.

**Keywords:** Retained placenta, manual removal, graded murrah buffalo, local and parenteral therapy

### Introduction

Buffaloes are high milk producing animals and are considered “Black Diamond” as contributing more than fifty per cent of the total milk production in India. Various reproductive disorders creating hindrance in the exploitation of its production potential and thus poor reproductive efficiency remained a major economic concern in terms of reduced fertility, low life time production, longer calving interval and increased medication costs in farm animals. (Sandeep *et al.*, 2019) [16]. Retained fetal membranes in buffaloes constitutes one of the major postpartum complications leading to severe endometritis, metritis, pyometra, perimetritis and ovaritis (Roberts, 1971) [10].

The retained placenta, a common multifactorial postpartum reproductive disease manifesting as failure to expel fetal membranes within 24 h of calving, increases the risk of developing metritis and infertility and reduces milk production and quality, causing great financial losses in the dairy industry. The pathogenesis of RP is still unclear, and there are four popular hypotheses to explain it: deregulation of uterine contractions, dysfunction of the chorionic villi, inflammatory stress, and immune disorders. Many studies have also confirmed that changes in blood metabolites, cytokines, inflammatory factors, immune factors, and hormones are associated with the pathogenesis of RP. However, it is difficult to clarify the complex pathogenesis of RP involving the nutritional metabolic, immune, nervous, and reproductive systems through blood indicators (Yuqiong *et al.*, 2021) [8]. The incidence of retention of placenta in buffaloes ranged from 10-15%. Furthermore, wide variations were reported (2.89-12.23%) and the incidence gradually increases with parity, reached a maximum at the fifth parity (30%) and associated with malnutrition (Kunbhar *et al.*, 2011) [3]. Following RFM, the uterus becomes contaminated with bacteria which have a negative impact on reproductive performance in cattle including delayed uterine involution, a prolonged interval to first service, an increased number of services per conception, a decreased conception rate and a prolonged interval of days open (Mohamed *et al.*, 2018) [4].

Furthermore, RFM have been associated with increased risk for endometritis, metritis, ketosis [6] and mastitis. These diseases can in turn lead to decreased fertility and potential losses in milk production (Goshen *et al.*, 2006) [5].

Many factors were found to affect the postpartum reproductive performances and postpartum fertility in dairy cows including parity numbers, parity season month of parturition parity as well as the sex of new born calves [9]. Furthermore, a meta-analysis of different studies showed that RFM is associated with 2 to 3 more days to first service; the conception rate at the first service following RFM is 4% - 10% lower than non-retained animals. Also, an increase of 6-12 days than normal days open was recognized. Postpartum metritis is common sequelae of RFM, and the rationale behind antibiotics application for RFM to prevent or treat metritis and its negative effects on fertility (Goshen *et al.*, 2006) [5].

The incidence of retention of fetal membranes in buffaloes are 9.98%, 34.61% and 46.87% in normal calving, premature birth and abortion respectively. The study indicates that the lower incidence of retention of fetal membranes in buffaloes with normal calving as compare to premature birth and abortion. The role of certain biochemical constituent's glucose, serum total protein and macro-minerals in various reproductive processes have been well documented in buffaloes. Disturbance of endocrine function, high progesterone and cortisol and low estradiol levels were traced in blood of animals with RFM. There was significant rise in the level of calcium phosphorus and magnesium and there was no significant difference observed in level of glucose, NEFA and progesterone on day 0, 30 and 45. (Sandeep *et al.*, 2019) [16].

Primary cause of retained placental membranes is the failure of fetal cotyledons to detach from maternal caruncles. Various processes involved in the placenta expulsion are the combination of many factors and begin much earlier before actual parturition. Many hormonal and mechanical factors are involved in placenta expulsion, if these fail it leads to the development of the condition followed by a prolonged third stage of labour. Deficiency of endogenous oxytocin along with excess of oestrogen and cortisol predispose to disease development (Roberts, 1971 and Arthur *et al.*, 1989) [10, 9]. Higher incidence rate has been reported in buffaloes i.e., 1.2-33.8% when compared to cattle 2.3-11%. Various deficiencies/imbalance of minerals (Calcium, Phosphorous and Iodine), vitamins (Vitamin A), uterine inertia, chronic wasting diseases, genital disorders and various other infectious causes are associated with this condition (Roberts, 1971) [10].

### Case history and clinical observation

A pluriparous graded Murrah buffalo calved 4 times was came with history of calved female calf normally 30 hrs before and foetal membrane hanging from the vulva with foetid odour showing straining and anorexia. On clinical examination the animal was dull and depressed with rectal temperature of 39.2 °C. Heart rate was 59 per minute. On vaginal examination, the foetid foetal membranes hanging from vulva and four finger dilatations of cervix with foul smelling sero sanguineous discharge comes out along with retained placenta. From the observations the case was diagnosed as retained placental membrane.

### Treatment and discussion

Placenta was removed manually and to prevent metritis and further septicaemia the she buffalo was treated by parental administration of Inj. Strepto Penicillin 5 gm, Inj. Meloxicam 0.5 mg/kg, Inj. Chlorpheniramine maleate 0.5 mg/kg through intramuscular route for three days. In order to evacuate the placental remnants and uterine contents Inj. PGF<sub>2</sub> alpha 500

micro grams administered through I/m route and advised to give Involon oral liquid first day 200 ml and followed by 150 ml on second and third day. Inj. Calcium borogluconate 500 ml, Inj. RL 1000 ml, Inj. Dextrose 25% 1500 ml, Normal saline 1500 ml and Inj. Tribivet 30 ml were administered through intravenous route. Oxytetracycline liquid 60 ml administered through intrauterine route for three days. After three days of treatment the animal had an uneventful recovery.

The commonest method of treatment for retained placenta is the manual removal of the remaining membranes. In a survey of British cattle practitioners (Laven 1995) [3], 92.5 per cent used this method at least occasionally. The techniques used vary from unpicking the cotyledons to light traction from outside the vulva. Superficially, manual removal appears extremely effective and simple, and the method has been used for a long time; Hancock (1952) [6] describes 'grasping the numerous points of attachment one by one and detaching the adherent afterbirth from them, while in practice. However, manual removal was still not considered the complete panacea. Manual removal is still a common procedure in modern cattle practice, because there are two obvious benefits to the farmer. These are, first, an improvement in parlour hygiene (allowing the sale of milk for human consumption in several countries) and, secondly, the removal of the source of a disagreeable odour. There are also supposed benefits to the cow; removing fetal membranes is still thought to remove a potential source of infection, thus preventing or reducing the subsequent effects of increased endometritis and poorer fertility. However, it is unlikely that manual removal actually achieves these aims (Peters and Laven, 1996) [2].

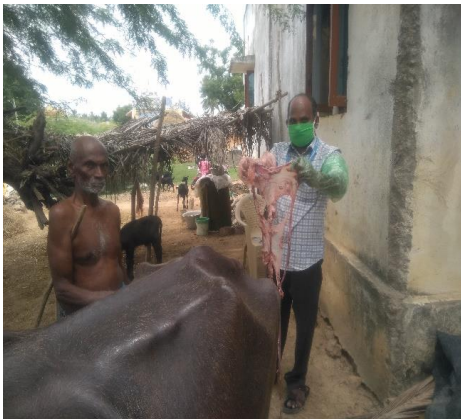
The potential treatments used for uterine infections should eliminate pathogens from the uterus, with possible decreasing of withdrawal periods for milk and meat. Success in the treatment of uterine infections depends on evacuation of the uterine fluids, susceptibility of the infectious agents to the used treatment, concentration and frequency of antibiotic use and the exposure of the entire endometrium (Noakes *et al.*, 2002) [14]. Evacuation of the uterus contributes to the success of further antibiotic therapy. When fluids are expelled, the effectiveness of antibiotics in clearing the remaining infection is improved. The antibiotic should be active against the main uterine pathogens and should maintain its activity in the environment of the uterus. Oxytetracycline is a broad-spectrum antibiotic and is indicated for the treatment and control of infections caused by or associated with oxytetracycline sensitive, rapidly growing bacteria (Sheldon *et al.*, 2004b) [15].

However, most of the buffaloes with retained placenta were subjected to manual removal of their placenta by Ahmed *et al.* (2009) [1]. While, manual removal was followed by hormonal protocols by Majeed *et al.* (2009) [11]. Channa *et al.* (2006) [12] found 69.56% fertility rate by manual removal of the retained foetal mass followed by the administration of oxytocin, calcium and antibiotics locally as well as parentally. Dabas *et al.*, 2011 [13] used Intra uterine infusion 40 ml of oxytetracycline solution for three days to treat retained placenta and cessation of unhealthy discharge was noticed within 3- 5 days in all the cases and the animals attained their milk production in due course of time. Since the non-infectious causes of placental retention are multi factorial and difficult to diagnose and most of the puerperal metritis cases are also found associated with mastitis, hence the use of local and systemic antibiotics after manual placental removal are suggested (Dabas *et al.*, 2011) [13].





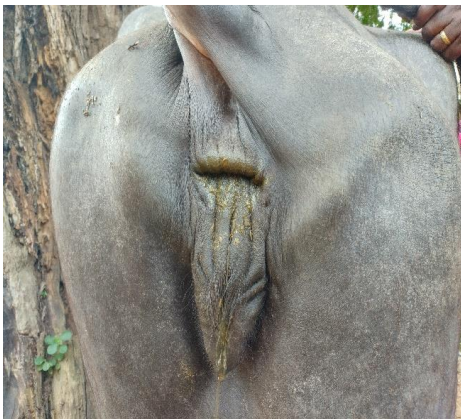
Retained placental membrane hanging from vulva



Examination of Retained placental membrane



Manual removal of retained placental membrane



External genitalia 14 days after complete removal of retained placental membrane and evacuation of uterine fluids

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