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Incidence of Placental Retention in Kundhi Buffalo around Tandojam, Pakistan

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Abstract

Four hundred fifty pregnant buffaloes were registered in surroundings of Tandojam out of those, 406 calved buffaloes were used for this study. On the basis of placental expulsion time, the animals were divided in to three groups; A (Normal time), B (Delayed placental expulsion) and C (Placental retention). The study revealed that 318 buffaloes expelled their fetal membranes with in normal time period i.e. up-to 8 hours postpartum, while 88 buffalo did not deliver the fetal membranes in time. In group, B; 39 animals expelled their fetal membranes between 9-12 hours postpartum, were categorized as delayed cases, while 49 animals retained their placenta beyond 12 hours postpartum, and were considered as pathological retention. The average time of expulsion of placenta was recorded as 3.80, 10.13 and 18.56 hours in groups A, B and C respectively. The resumption of estrus cyclicity in all in the groups was recorded as 118.70±48.71, 121.88± 40.99 and 144.68± 49.07 days respectively. Group; A was significantly different (< 0.05) from group C, whereas A and B, B and C were not significantly different from each other. It was found that the administration of Penbiotic and Oxytocin, when used after 8 hours postpartum, promoted the expulsion of fetal membranes, and resulted in early postpartum estrus resumption in buffaloes.

Keywords: Buffalo, Placenta, Retention, Incidence, Postpartum.

Introduction

Buffaloes provide quality food like milk and meat and are the source of power for farm operation and transport. Buffaloes are high producing animals (Khan, et al., 2004) and are considered as the "Black Gold" of this region. The estimated population of buffaloes in Pakistan is bout 29.9 millions (GOP 2009). In Pakistan buffalo population is scattered in herd of various sizes ranging from one head to several hundreds (Afridi, et al., 2009) and makes difficult for scientific management especially reproductive management (Qureshi et al. 2002).The Kundhi is the well-known milch breed and is found in the Sindh province of Pakistan. Large numbers of commercial farms are available in Peri-Urban areas of main cities of Sindh province. Most of these animals belong to Kundhi buffalo breed.

Tandojam is a small Town and is situated 15 km in the east of Hyderabad City, where a large number of small (10-50 animals) commercial herds of buffaloes are maintained. Most of these animals belong to Kundhi buffalo breed. The milk of these animals is supplied directly or collected by middleman and supplied to TandoJam town and Hyderabad City. The farming system is semi-intensive and the animals are fed with concentrate, wheat husk, cottonseed cake and seasonal green fodders (Zea-Maize, Alfalfa and sugar cane tops).

In the study area, natural breeding system is in practice and very few artificial insemination services are available on the request of the owner/farmer. The trend of pregnancy confirmation is now getting popularity in farm community. Vaccination and deworming is also inadequate. No regular sexual health management program is in practice. Productive buffaloes should produce and raise viable calf, return to estrus early during postpartum period and conceive again and repeat this cycle process at regular intervals till the end of its productive life. Calving puts stress on the health of animals, leading to retention of placenta and increased postpartum period.

The postpartum retention of placenta is one of the major pathological problems faced by the farmers and field veterinarians in practice (Hussein, 1983). It causes heavy financial losses due to cost of medicine used, delay in uterine involution, prolonged first postpartum estrus interval, reduced fertility rate and increase in calving interval.

Normally, placenta is expelled within 0.5 to 8 hours after parturition in cattle and buffalo (Roberts, 1982).

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If it is retained beyond this, the condition is known as retention of placenta. A sufficient research work has been done on reproductive disorders in bovine in each part of the Pakistan. No work seems to be undertaken on the incidence and treatment of retention of placenta in buffalo in the area under investigation. The aim of the study was to record the incidence of retention of placenta and design an effective treatment regimen to maintain fertility status of the animal at optimum level.

Materials and Methods

Four hundred fifty pregnant buffaloes within 10 kilometers radius of Tandojam were registered. Out of those, 406 calved buffaloes were used for this study. The animals were observed twice a week as a routine. The farmers were educated to inform in case of calving in general and retention of placenta in particular. All the animals were divided in to three groups as A, B and C according to the time of expulsion of placenta and treatment regimens (Table 1).

All the groups were observed for first postpartum estrus for the period of nine months. The data thus collected were subjected to percentage. The incidences of retention of placenta in buffalo were recorded. The time required for expulsion of placenta in various groups was also recorded to establish the group. Statistical differences between the groups were determined by Analysis of variance (ANOVA) and HSD applied where appropriate.

Inj: Penbiotic = Procaine Penicillin 100000 I.U.
Benzyl Penicillin 1500000 I.U.
Streptomycin 05 g

Inj: Oxytocin = Oxytocin 10 I.U.

PessariesUtenol= Sulphathiazole 1750 mg
Penicillin –G 10 0000 I.U
Streptomycin Sulphate 50 mg
Ethinyloestradial 0.5 mg

Results and Discussion

Out of 450 registered buffaloes, 406 (92.23%) calved animals were utilized for present investigations. The incidence of retention of placenta was recorded as 12.67% in buffaloes. The average time taken for expulsion of fetal membranes was found to be 3.80, 10.13 and 18.56 hours in groups A, B and C respectively. The first postpartum estrus in the groups was observed on day 118.70+48.71, 121.88±40.99 and 144.68+49.07 respectively (Table-II). The difference between the groups was significant while no difference was observed between A and B groups.

It was observed that 318 buffaloes (78.33%) expelled their fetal membranes within normal time period (up to 8 hrs postpartum), while 88 buffaloes (21.67%) took longer time in expelling the fetal membranes and treated with a single dose of Oxytocin and Penbiotic. Out of which, 39 animals (9.61%) responded after receiving the treatment and expelled placenta before 12 hours, while 49 buffaloes (12.67%) required manual removal and additional treatment was mentioned for the group C (Table-1). The administration of antibiotics and oxytocin, when used after 8 hours of calving, helped in expelling the fetal membranes. Similar findings were reported by Hussain (1983) in buffaloes and Muhammad and Muhammad (2002) in cattle.

The present findings for the incidence of retention of placenta fall in the range (10-15%), reported by Roy and Luktuke (1962) in buffaloes. Slightly higher values (16-18%) were reported by Dhanani et al. (1987), Oresnik (1995) and Sabery et al. (1997). The incidence of retention of placenta increases with parity, twins and premature births (Samo, 1983) and varies from country to country, year to year and from herd to herd (Hussain, 1983). The normal time of expulsion of placenta recorded in the current study was in close agreement to the results (3-8 hours) of Banerjee (1995) in cow. The findings (3.33 hours) of Roy and Luktuke (1962) in buffaloes were also in agreements to the findings of present study. Gudi (1971), Ahmed et al. (1984) and Devaraj and Janakirman (1983) have reported similar values (4.56-4.93 hours) in buffaloes.

Table 1 Grouping of the animals according to placental expulsion time and treatment regimen

Group	Placental expulsion time	Treatment regimens
Group-A(Control)	8 hours postpartum	No treatment. Normal time
Group–B (Delayed Placental Expulsion)	8 to 12 hours postpartum	Inj: Penbiotic 5 g (i/m) once only inj: Oxytocin 5 ml (i/m) once only (10 IU/ml)
Group-C (Retention of Placenta Pathological)	12 hours and onward	Manual removal, Intrauterine Pessaries: Utenol N-8, once only. Inj: Penbiotic 5g (i/m) repeated for three days Inj: Oxytocin 5 ml (i/m) Repeated twice a day (10 IU/ml)

Table 2 Expulsion time of placenta and first postpartum estrus in buffalo

Variables	Normal placenta (*Group A)	Delayed placenta (Group B)	Retained placenta (*Group C)
Placental expulsion time	3.8 hours	10.13 hours	18.56 hours
1st Postpartum estrus (days)	118.70 ± 48.71[a] (SD)	121.88 ± 40.99 (SD)	144.68 ± 49.07 [a] (SD)

*Similar super-script groups are significantly different from each other.

The present findings for first postpartum estrus in normal and delayed groups fall in line with the results (125.73 days) reported by Rao et al. (1973) in Surti buffaloes. This indicates that, the cases of delayed fetal membranes, if handled timely and properly, have no adverse effect on first postpartum estrus in animals as 331 buffaloes (81.53%) came in estrus during the current study period.

It is concluded that majority of buffaloes expelled their fetal membranes before 8 hours (average 3.8 hours) after calving. The administration of oxytocin and antibiotics helped in the expulsion of placenta and resumption of early postpartum estrus in buffaloes. The pathological retention adversely affected the postpartum reproductive performance of buffaloes as indicated by the appearance of first postpartum estrus.

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