Case Report

Therapeutic Management of a Downer Cow – A Case Report

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Abstract

A six-year-old Sahiwal cow of Instructional Dairy Farm in the Department of Animal Husbandry and Dairying, SCS College of Agriculture, AAU showed a symptom of lateral recumbency and subnormal temperature. It was a dystotic cow and unable to lift the hind part after 8 hours post calving. Complete loss of appetite was observed leading to severe dehydration. Prognosis was found to be poor. Little response was observed when treated with calcium and magnesium borogluconate. Even after several attempts the cow failed to stand up. The characteristic crawling with the forelimb resulted in the development of wounds in various regions viz. knees, shoulder, brisket, tuber coxae and thighs. A combination of therapy and physical management could save the life of the Sahiwal cow and complete recovery was noticed after 35 days.

Key words: Post-parturient, Lateral Recumbency, Downer Cow, Rehydration, Ca Depletion and Hot Fomentation

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Introduction

'Downer cow' or 'Post parturient recumbency' is to describe a cow that is so injured, weak sick to stand or walk (Carolyn *et al*., 2007). The affected animals are usually bright and alert but are unable to stand. The downer cow is also be defined as a post-parturient recumbent cow does not get up even after two successive treatment with calcium (Geetha and Gnanraj, 2017). Depending upon the symptoms observed the downers cow can be of two types i.e. 'Alert downer' and 'Non-alert downer'. Alert downers are more or less active, showing normal appetite, defecation and urination and normal body temperature. They usually positioned as sternal recumbency, crawling with forelimbs to get up but could not raise the hind-part. This condition

might be associated with nerve injury during parturition time and due to potassium depletion owing to prolonged recumbency (Kronfeld, 1976). The non-alert downers are somewhat critical and are in lateral recumbent position and there is complete loss of appetite, dull and depression. Due to continuous pressure on the floor the non-alert downers develop several wounds over knees, shoulders, hocks, tuber coxae and thigh region.

Case History and Observations

A six years old Sahiwal cow weighing around 350 kg was about to ready for its third calving. The cow was showing symptoms of parturition on 17th December, 2018. Strain started at 10.00 O'clock in the morning and continued for 9 hours, but no water bag was observed. However, at 7.00 O'clock in the evening the water bag comes out. The cow was continuously given strain and become tired to give further strain to deliver the calf. A drip of 5% DNS 1000 ml was given. When no foetal part was observed in the birth canal and it was thought that it might be a dystokia case. Manual handling through birth canal was done to correct the position of the foetus and a gentle force was required to deliver a live female calf at 8.00 O'clock in the evening. The size of the calf was somewhat bigger and the weight was 22 kg, recorded in a platform balance. The cow stood of its own, licked the calf to dry and allowed the calf to suck colostrum. The complete placenta was expelled out after 4 hours of calving. Next day morning the cow showed lateral recumbency, limbs were become stiff and the temperature was recorded as 36.5º C. The cow was unable to lift its hind part, tried to stand with its fore limbs but failed. Immediately the cow was administered with 450 ml calcium borogluconate (Calboral), followed by 450 ml calcium magnesium borogluconate and dexamethasone 5 ml intravenously in slow drip. No response at all was observed after two calcium drip and the symptoms were similar to that of the non-alert downer's cow. After few days unilateral swelling of the sub-mandibular lymph node was noticed.

Fig. 1: Lateral recumbency of a cow showing downer's syndrome

Fig. 2: Recovered cow

Treatment and Discussion

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There is no specific treatment of a downer's cow. However, symptomatic treatment along with physical management was started and constant supervision was done in the process of recovery of the animal.

Downer's cow is a disease condition which is always associated with hypo-calcaemia. Calcium depletion may arise owing to reduced calcium absorption in the digestive tract due to poor appetite (Chakrabarti, 2016). Jesse *et al*. (2016) also reported a case of hypo-calcemia in a post-parturient 4-year-old Holstein Friesian cow and were successfully managed by administration of calcium borogluconate and the prognosis was good. However, in the present study, the cow lost the appetite completely for 3-4 days, while little water was drenched orally. Thus, the cow was got extremely dehydrated. First attempt was made to rehydrate the cow by parenteral administration of 5% dextrose (1500 ml) and Ringer's Lactate (1000 ml) daily for 7 days. Thereafter, 5% dextrose (1000 ml) and NS (1000 ml) was given daily for another 10 days. Oral calcium was also administered @ 100 ml daily. Besides, antibiotic Ceftiofur Na 1 g was given i/m 24 hourly for 3 days to prevent systemic infections. Supportive treatment with prednisolone 10 ml i/m twice daily for 2 days followed by once daily for another two days was provided. The line of treatment of the downer's cow with corticosteroid was also suggested by many authors. Chakrabarti (2016) stated that in dystotic cow, sometimes pelvic nerves were affected due to pressure of the foetus at the time of calving. Injury of the obturator nerve might impair the standing ability of the cow. In the present case too, the cow was unable to lift the hind part and that might be because of injury to the pelvic nerve during the time of parturition. Injectable preparation containing Methylcobalamin, Vitamin B_6 and Nicotinamide was given intravenously @ 10 ml daily for 7 days which was followed by 10 ml intra muscularly at alternative days for another 10 days. The response to treatment was very slow. However, the condition of the cow was improving during the course of treatment. The cow was also given phosphorus injection @ 20 ml daily for 5 days. Phosphorus was attempted to balance the calcium phosphorus ratio. To stimulate the appetite, the cow was given rumenotoric while to alter pH of the rumen, sodium bicarbonate was given @ 100 g daily for two days. After 17 days the animal was started taking grasses and little amount of concentrate. As observed the appetite was improved day by day.

Physical Management

Management and nursing of downer cows was considered important in addition to therapeutic treatment. Initially the cow was kept on concrete floor bedded with straw and gunny bags. The cow was tried several times to stand up but failed to raise the hind limbs. Continuous crawling with the forelimbs causes several wounds in knees, shoulders, brisket, thighs and tuber coxae. The position of the cow was changed at every 8 hours interval. Later on the cow was shifted to straw bedded earthen floor. The wounds were dressed with Tincture of iodine followed by topical application of ointment and spray. Washing and drying of udder was done regularly helped in prevention of mastitis. Hot fomentation at the hind quarter helped greatly during

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the process of treatment. Several researchers were used sling or pullies (Geetha and Tensing, 2017) to lift the downer cow. However, in the present case, due to lake of such facility in the farm no attempt was made to lift the cow by using sling or pullies. Massaging of the muscles was also done to restore muscle activity of the limbs which was also suggested by Chakrabarti (2016).

The cow could able to bear its weight on 35th day of illness and it stood without any support for a period of 15 minutes. Thereafter, she stood up several times a day and moved slowly with staggering gait. Within a week a drastic improvement was noticed and the cow was recovered completely. However, the milk production was dropped severely.

Depending upon the nature of the disease and extent of weakness, the course of the disease may be varied. Phillip (2015) carried out an experiment on 103 numbers of downers cow with satisfactory level of nursing and observed that 18 numbers of cows had recovered by day 3 and 31 numbers had recovered by day 7 and the remaining 54 cows had recovered eventually. However, Radostits *et al.* (2000) reported recovery of a downer cow after 14 days of sternal recumbency. In another case, studied by Geetha and Tensingh (2017) where a crossbred Jersey downer's cow showed symptom of sternal recumbency and recovered after 30 days of treatment and constant supervision. Moreover, the author suggested the use of lifting device in management of the downer cow. However, in the present case the downer cow was managed to stand without use of any lifting device.

Conclusion

In the present case study, the cow was lying in lateral recumbency and there was complete loss of appetite, severe injury on muscles and nerves was noticed, thus the prognosis was said to be very poor. But, the combination of treatment and physical management recovered the cow even after 35 days of illness. Lastly, it can be concluded that, proper treatment, care and management can save a cow's life and bring back in production even after long period of recumbency.

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