

# Successful Management of Downer Syndrome in Cow By Medicinal Treatment Along With Physiotherapy

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**Abstract:** A cow was presented to Govt. Veterinary Hospital, Sihana, Chittorgarh, Rajasthan, with the history of dystocia due to big size calf. After forceful traction, the calf was delivered. After delivery cow was remained down and unable to stand up. The cow was bright and alert with normal apatite, defecation and urination. Milk production was reduced. All the physiological and clinical parameter was within normal range at the time of presentation and cow was remains in sternal recumbency and frequently tries to get up. Treatment was done by medicine along with physiotherapy to correct the etiological factor. Physiotherapy was performed including soft bedding of sandy soil, massage of hind limbs with vegetable oil and supportive slings. Cow was able to stand up without help of slings after complete recovery.

**Keywords:** downer syndrome, dystocia, sternal recumbency, physiotherapy

## 1. Introduction

One of the most challenging problem for veterinarians is management of recumbent/downer animals. Prolonged recumbency due to inadequately treated and unresponsive hypocalcaemia is one of the common causes of downers syndrome. Cox (1982) proposed that downer cow was any cow which was down in sternal recumbency for more than 24 hours without evidence of a systemic involvement. Blood *et al.* (1983) defined the downer cow syndrome is a condition occurring following parturient paresis, characterised clinically by prolonged recumbency even after 2 successive infusions with calcium. Ninety four per cent downer cows were average to high producers. About 30 % of cows treated for milk fever will not stand for up to 24 hours after treatment and turn to downer animals (Radostitset *al.*, 2000). Allen and Davies (1981) suggested that downer syndrome occurred as a result of one of combination of the factors like milk fever, hypophosphataemia, fat cow syndrome, excessive protein intake, Vitamin E & Selenium deficiency, recumbency due to trauma and malnutrition. Jonsson (1983) suggested that downer syndrome occurred as a result of one of combination of the factors like muscular injuries, nerve injuries, persistent hypocalcaemia, persistent hypophosphataemia, myocardosis, hepatosis, septic mastitis and other factors. Jonsson (1983) also observed that 65% cases of injuries of muscles, nerves and hind limbs terminate as downers.

## 2. Case History

A cow was presented to Govt. Veterinary Hospital, Sihana, Chittorgarh, Rajasthan, with the history of dystocia due to big size calf. After forceful traction, the calf was delivered. After delivery cow was remained down and unable to stand up. Cow was unable to stand up in spite of repeated attempts to rise up. Cow tried to stand up repeatedly but could not rise on their feet.

## 3. Sign and Observation

The cow was bright and alert with normal apatite, defecation and urination. Milk production was reduced. All the physiological and clinical parameter within normal range at the time of presentation such as body temperature 100.5<sup>0</sup>F, heart rate 56 per minute, pulse rate 66 per minute and respiratory rate 21 breath per minute. Cow was remains in sternal recumbency and frequently tries to get up. Cow was tried to rise fore quarters but failed to put up weight on hindquarters. Cow was able to stand with some assistance by lifting the tail and head or with the help of wooden sticks below thorax and abdomen with precaution to avoid any injury to udder. The all limbs were checked for sensitivity to pain by pricking with a needle to rule out nerve paralysis. The all fore limbs and hind limbs showed sensitivity to pain.

## 4. Treatment

Treatment was done by medicine along with physiotherapy to correct the etiological factor. Injection Oxytetracycline at the dose rate 10 mg/ kg body weight and Meloxicam at the dose rate of 0.5 mg/kg body weight were administered intramuscularly for five and three days respectively. Injection Calcium magnesium borogluconate (Mifex) 450ml (300ml slow i/v and 150ml s/c and Injection 5% DNS 2000ml i/v once were administered. Injection Tribivet (Vit. B<sub>1</sub>, Vit. B<sub>6</sub>, Vit. B<sub>12</sub>) 10 ml i/m. and injection Tonophospan 10ml i/m for 3 days were administered. Injection Triamcinolone (Vetalog) 5 ml i/m for 3 alternate days. Powder chelated Agrimin Forte 50 gm bid for 10 days orally given. Powder Potassium chloride 30 gm orally for 5 days was given. Physiotherapy comprised of soft bedding (paddy straw and sandy soil) and supportive slings. Sand was used as bedding material because cow was easily rolled from one side to other and for the regular removal of excreta. The cow was rolled from one side to the other for every 3 hours to prevent bed sores. Cow was assisted to stand for 30 minutes four to six times a day using supportive slings. The sling

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was designed in such way that the weight of the animals is equally distributed (Fig. 1). Massage of hind limbs with vegetable oil to increase muscular activities was carried out and hot water fomentation was performed. Cow was responded well with treatment and physiotherapy. Cow was able to stand up without help of slings after complete recovery.

## 5. Discussion

The cow was appeared bright, alert and normal defecation, urination with normal appetite after recovery. This recovered cow was responded to slings and medicinal treatment including Ca, Mg, P and K preparations. Insufficient calcium in heavy animals suffering from parturient paresis may result in incomplete response and lead to failure of animal to rise. If these animals are not treated soon, ischemic necrosis of muscle will occur leading to permanent recumbency even if the animal is subsequently treated with sufficient calcium (Radostits *et al.*, 2000). The reliable indicator of muscle injuries is the creatine kinase activity in serum which increases many folds (Prasad *et al.*, 1988). Hypophosphataemia is alleged to be one of the commonest causes of downer syndrome and have been observed in recumbent animals. About 32 % of the downer cows had phosphorus concentration below 4 mg/dl (Wadhwa and Prasad, 2007). Fenwick (1969) observed that there was definite increase in number of downers and deaths with decreasing potassium concentration. The animal should be shifted to suitable site for proper nursing preferably on sandy soil floor. Animal should be turned from side to side regularly to minimize the degree of ischaemic necrosis. If possible, lifting of the animal is beneficial. This can be done with manual labour or with the use of slings using chain and pulley. Lifting should be done carefully to avoid further damage to muscle and nerves. When the animal is hoisted or able to stand unaided, the blood circulation should be stimulated by massaging the limbs. A downer cow can be successfully treated if the correct diagnosis of the cause of the recumbency is noted early. A lot of special handling, care and patience are required to help the recumbent cow. Massaging of the limbs, turning of the cow and lifting the cow onto it feet will help the cow to recover faster (Muthoni MS and Nganga K, 2009).



**Figure 1:** Cow with specially designed sling in which weight of the animals is equally distributed

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