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Successful recovery of holstein friesian crossbred prepartum downer: A case report

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Abstract
A Holstein Friesian crossbred cow maintained at Krishi Vigyan Kendra, Trichy was presented with a history of normal appetite, rumination and defecation but unable to stand. On examination, the physiological parameters were in the normal range. The animal had the urge to get up at times even though it was in sternal recumbency. The blood sample was taken to check the serum calcium and phosphorus. The animal was assisted to stand in slings thrice daily. During that time the hot water massage was provided to all the four limbs of the animal. The position on the animal was changed periodically in order to prevent bed sores. After 18 days of prompt treatment the animal stood up with full recovery and given birth to heifer calf after ten days.

Keywords: Prepartum downer, sternal recumbency, hypokalemia, hyponatrimea

Introduction
Downer cow syndrome is the condition where the animal will be active and alert but it is unable to stand. Most of the time it occurs following hypocalcemia, due to sternal recumbency for more than 24 hours even after administration of calcium, magenesium and phosphorus. This syndrome is one among the major problems easily diagnosed but will have to do cumbersome treatment at field level. Prolonged recumbency due to inadequately treated and unresponsive hypocalcaemia is one of the common causes of downers syndrome [1]. The downer cow syndrome is a condition occurring following parturient paresis, characterised clinically by prolonged recumbency even after two successive infusions with calcium [2]. This condition prevails in moderate to high producing dairy cows. This syndrome may also be the result of many factors like hypophosphatemia, undernourished cow, trauma, high protein intake and fat cow syndrome [3]. The downer syndrome might also occur due to the combined effect of muscle and nerve injuries, persistent hypocalcaemia and hypophosphataemia, myocardosis, hepatosis, septic mastitis and other factors [4].

Case History
A Holstein Friesian crossbred dry cow maintained at Krishi Vigyan Kendra, Sirugamani, was presented with a history of normal appetite, rumination and defecation but unable to stand. The clinical parameters were in the normal range such as 99.5^{0}F body temperature, 55 per minute heart rate and 22 per minute of respiration rate. However the animal had the instinct to get up on its own. As per the record the animal was pregnant about eight months. On rectal examination live fetus was noticed. Cow was unable to stand up in spite of repeated attempts to rise up. The cow was assisted to stand up by inserting two blunt poles one in front of the udder and another near the sternal region just behind the elbow joint. The efforts taken were in vein. However, pinprick test was carried out in all the four limbs to rule out the limbs sensitivity and nerve function. The test revealed that the animal was not having any nerve injury. The blood sample was collected from the animal on the third day to check for serum calcium and phosphorus and sent to Animal Disease Intelligence Unit- Tiruchirappalli.

Treatment
The animal was given symptomatic treatment by administering inj. Calcium magnesium borogluconate 300ml slow i/v and inj. 25% DNS 1000ml i/v along with inj Tribivet 10ml, inj. Meloxicam @ 0.5mg/kg body weight intramuscularly. The same treatment was continued for three subsequent days.

The blood sample results showed normal level of serum calcium (10.1 mg/dl) and phosphorus (5.6 mg/dl). Hence, on the next day the animal was administered with 10 ml Tribivet epidurally amd 10 ml of Tonophos i/m. The animal was put to slings thrice in a day and allowed to stand in its support for one hour (Fig 1). During that time, the animal was given physiotherapy treatment like massaging all the limbs with paddy straw soaked in hot water from shoulder to metacarpals in fore limbs and from thurl to metatarsal in hind limbs. The farm labours were advised to change the position of the animal once in two hours to prevent the formation of bedsores. As the days advanced the animal circled over the housed area with an urge for feed intake. The animal was provided with oral medication of Powder. Orcalite downer 50 gm and mineral mixture 25 mg twice daily for two days. Cow responded well with treatment and physiotherapy. On 18th day of treatment the cow stood up without the help of slings. (Fig 2.)

Discussion

The animal with preparturient paresis responded well to sodium and potassium supplements. The supplements given epidurally and orally also lead to improvement of the animal. Insufficient calcium in heavy animals suffering from parturient paresis may result in incomplete response and lead to failure of animal to rise. The treatment has to be taken in war foot manner or else it may lead to permanent recumbency due to ischemic necrosis of muscle [5]. The recumbent downer animals were to be checked for Hypophosphataemia [1]. As per [6] thirty-two percent of the downer cows had phosphorus concentration below 4 mg/dl. In concurrence to this case [7] also reported that decrease in potassium concentration results in increased downer and increased mortality percentage. The position of the animal needs to be changed in frequent manner so that incidence of the ischemic necrosis is less. This can be achieved with the help of slings and pulley. Care should be taken by placing soft bedding material in between gunny bags so that it does not damage the udder. The thoroughly rubbing the limbs with paddy straw soaked with hot water stimulates the blood circulation. A downer cow can be successfully treated if the correct diagnosis of the cause of the recumbence is noted early. Massaging of the limbs, turning of the cow and lifting the cow onto it feet will help the cow to recover faster [8].

Conclusion

The right diagnosis and prompt treatment by correcting all the parameters like Calicum, Magnesium, Phosphorus, Sodium and Potassium. In this pre partum downer the level of calcium and phosphorus were in the normal range. The animal showed wonderful response after administration of potassium powder for two consecutive days. Hence hypokalemia and hyponatremia should also be considered while treating the downer cows.

Fig 1: Animal put to slings with gunny bag attached

Fig 2: Complete recovery of the animal

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