

Tetanus in post-parturient cows - a report on six clinical cases

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ABSTRACT

Six post-parturient cross-bred cows suffering from tetanus diagnosed based on history and clinic signs such as stiffness, lockjaw, erect ears etc; were treated with tetanus antitoxin, procaine penicillin G and diazepam. Five animals died of tetanus in spite of the treatment given. One animal survived the disease and was cured completely within two weeks time.

Key words: Tetanus, post-parturient cows

Six crossbred cows were referred by field veterinary staff between the year 2000-2002 with the symptoms of inappetance, salivation and sharp decline in milk yield that did not respond to the routine antibiotics and other treatment in the field. History of these cases revealed that they had recently calved. Two of these had history of dystocia which was relieved manually by the field Para-veterinary staff. Three had normal calving but had history of retention of placenta, which had been manually removed. One animal had normal calving and normal expulsion of the placenta.

On examination, the animals exhibited hypersensitivity, anxious look, mild to moderate stiffness of the neck, mild prolapsed third eyelid on tapping the face below the eyes, salivation, suspended rumination and bloat. Five out of six animals were not eating but could drink a little amount of water with difficulty. One animal was not able to take both feed and water. Gradually there was stiffness of the forelimbs, lockjaw, raised and stiff tail, erect ears and the pupil were dilated and fixed. These symptoms were seen in almost all the animals with varying degree. The rectal temperature ranged from 102.6°F to 103.4°F. The respiration was rapid and shallow. One animal went into lateral recumbency and exhibited complete stiffness of limbs and opisthotonus. This animal succumbed before the initiation of the treatment.

The cases were diagnosed as tetanus based on clinical signs. The animals were given procaine penicillin G 80 Lac I.U twice daily, injection diazepam @ 0.3mg/kg intravenous as and when required, dextrose saline @ 5 lit daily intravenous and tetanus antitoxin.

1, 00,000 I.U. at a time intravenously as an infusion. Simultaneously adsorbed purified tetanus toxoid was administered intramuscularly. Rumen was trocarised to relieve bloat. Three animals died 2-4 days following the start of the treatment, even though these animals had been given tetanus antitoxin. One animal died when the tetanus antitoxin was being repeated on the second occasion. The animal succumbed within five minutes of the start of the intravenous drip. This animal had shown slight improvement following the first dose of the tetanus antitoxin. One animal survived the disease and was cured completely within two weeks time. This particular animal showed dramatic improvement following single dose of 1, 00,000 I.U. of antitoxin. Subsequently treatment with diazepam and procaine penicillin, housing in dark, noise free environment and plugging of external auditory meatus resulted in complete cure.

In the present case study all the six cases exhibited typical symptoms of tetanus. There was no history of any injury or wound prior to these animals falling sick. Clinical examination also did not reveal any wound or mark of injury on the body of the animals. The probable source of infection in these animals was uterus, which had been handled in five out of six cases. Similar observation has been made by Davison (2000) and Quinn *et al.* (1994). In one case where uterus was not involved, an autoinfection from the proliferation of the bacteria in the gastro-intestinal tract might have resulted in the clinical signs (Radostits *et al.*, 2000). Recovery from the disease has been reported (Bhikane and Kulkarni, 1998), but in the present study only one out of six animals could be saved. This could be because the treatment was initiated late in the course of the disease in these animals. Death in one

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animal which showed initial improvement following tetanus antitoxin administration can be attributed to anaphylactic reaction as the tetanus antitoxin used was of equine origin. However, no obvious signs of anaphylaxis were noticed in this animal. Although specific dosages have not been determined for domestic animals, suggested dosages range from a single subcutaneous dosage of 1000-5000 I.U./500 kg animal to 1000-5000 I.U./kg (Radostits *et al.*, 2000). Tetanus antitoxin @ 100000 I.U. as single dose was used in the present study as an infusion and one animal could be saved. Diazepam @ 0.1-0.4mg/kg intravenous 2-4 times daily has been found to be effective in reducing severe muscular spasms in large animals (McGuirk, 1983). In the present study diazepam @ 0.3mg/kg intravenous was found effective in relieving muscular rigidity. There was excellent muscular relaxation and the animals showed improved respiration with minimal of effort.

As only one animal out of six could be saved, it is suggested that active immunization with adsorbed tetanus

toxoid should be used in animals nearing parturition or a schedule of prophylaxis be followed during pregnancy as is being followed in human beings. Moreover, tetanus should always be considered in differential diagnosis in the sick post-parturient cows.

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