

BOVINE NEONATAL TETANUS: A CASE REPORT

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ABSTRACT

Tetanus is a fairly common disease occurring in all types of livestock. It is relatively rare in buffalo, but due to unhygienic practice following parturition, the umbilicus or the navel easily gets infected through contamination of soil or faeces and buffalo calves can get tetanus. A case report of neonatal tetanus in buffalo with typical clinical signs is described in the present study.

Keywords: buffaloes, *Bubalus bubalis*, calf, neonatal, tetanus

INTRODUCTION

Tetanus is a non contagious, non febrile infectious disease of mammals caused by exotoxin tetanospasmin produced by the vegetative stage of *Clostridium tetani* under anaerobic conditions. Tetanus occurs in all parts of the world and is most common in closely settled areas under intensive cultivation. It occurs in farm animals as individual or sporadic cases but outbreaks are common following wounding management procedures. Although recovery rate is high in adult cattle, the case fatality rate may be as high as 80% in young ruminants (Radostitt *et al.*, 2000). Apart from other factors, one important reason for neonatal tetanus

is infection in the umbilical cord due to unsanitary conditions at parturition (Suleman, 1982). A case of this type in a male buffalo calf is reported herewith.

CASE HISTORY, CLINICAL SIGNS AND DIAGNOSIS

A one-month-old male buffalo calf was presented to the clinics of the faculty with a history of rigidity of the entire body, hyperesthesia, inability to suckle and stand and also no defecation and urination for the previous two days. Upon clinical investigation, the calf displayed anxious and alert expressions. The ears were erect. Hyperesthesia was evident. Saliva was drooling from mouth. There was great stiffness in all the limbs. The calf was unable to stand, if forced, it adopted a "sawhorse" or "wooden horse" posture (Figure 1). It had great difficulty in walking and was prone to fall. Even after the calf fell, the limbs remained in the state of tetany. The hind limb stuck out stiffly behind and the fore legs forward (Figure 2). Opisthotonus was marked. There were occasional tremors of muscles of the face and limbs.

The jaw was completely locked and difficult to open. However the temperature (102°F) and pulse (72/minute) were within normal limits. Also there was no prolapse of third eyelid and no stiffness in

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Figure 1. "Sawhorse" or "wooden horse" posture.



Figure 2. The hind limb stuck out stiffly behind and the fore legs forward.

the tail. The umbilicus was not properly healed and was found soiled with faeces. Upon detailed anamnesis and clinical investigation the case was tentatively diagnosed as neonatal tetanus.

TREATMENT, RESULTS AND DISCUSSION

Soon after diagnosis, the treatment was initiated as per the principles given by Radostit *et al.*, 2000, i.e. elimination of causative bacteria, neutralization of residual toxin, control of muscle spasm and maintenance of hydration and nutrition. The calf was injected with AC vet (product of Intas Pharmaceuticals, India) 1 gm intravenously (i/v). Injection multivitamin 10 ml slow i/v along with 1 litre of injection normal saline solution (NSS). Injection diazepam was given 0.4 mg/kg body weight intra muscularly. Tetanus antitoxin was administered 1000 IU i/v and 500 IU in and around umbilicus after 30 minutes of administration of tetanus antitoxin at umbilicus, the umbilicus was cleaned and debrided aggressively. Thereafter it was irrigated with NSS and sponged with hydrogen peroxide. Despite of all these efforts the calf unfortunately succumbed in a few hours.

Due to unhygienic practice following parturition, the umbilicus or the navel easily gets infected through contamination of soil or faeces during seating. Upon invading in the depth of wound and following average incubation of 10-14 days, the organism under anaerobic condition produces tetanospasmin, which acts upon the muscle and is responsible for the spasm which is a classical sign of the disease (Safarov *et al.*, 1972). Locked jaw, erect ears and constipation are due to the spasm of related muscles. The various clinical signs observed in this case are almost similar to those reported in a cross-

bred calf (Bhikhane and Kulkarni, 1998). Penicillin being drug of choice helped in the elimination of causative bacteria. Although administration of antitoxin is advocated parentally as well as locally to neutralize the residual effect of toxin (Stauder, 1973), its effect after appearance of clinical signs is questionable. The wound should always be cleaned only after 30 minutes of administration of antitoxin locally because aggressive cleaning, debridement or irrigation may facilitate the absorption of toxin. Maintenance of hydration and nutrition is necessary particularly in cases where the animal is unable to eat and drink due to lock jaw. Diazepam was given in order to relieve tetany and spasm of muscles. Despite of all these efforts the death in this case may have been due to respiratory arrest/failure following spasm of the muscles of respiration.

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