

Puerperal Tetanus in Water Buffalo – A Case Report

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Abstract: Reports of tetanus in buffaloes are scanty in comparison to cattle, horse, sheep and goat. A six years old Murrah buffalo, five days post-partum, was presented for treatment with a history of manual removal of retained placenta. Prolapse of third eyelid, complete locking of jaw, development of curve in spine, erection of ear and typical "pump-handle" position of tail were visible signs. Diagnosis was established on the basis of case history and clinical signs. Treatment was carried out with irrigation of genital tract with 3% solution of hydrogen peroxide and administration of hypertonic saline solution (7.5%), dextrose normal saline (5%), penicillin G procaine in high dose, ketoprofen and chlorpromazine. The animal fell like a stiff, wooden structure on day 11 of the onset of the disease and succumbed to its illness.

Keywords: Tetanus, post-partum, third eyelid, pump-handle position, water buffalo.

INTRODUCTION

Tetanus is an acute fatal toxæmic disease caused by a specific neurotoxin tetanospasmin produced by the bacterium *Clostridium tetani*, a Gram-positive, spore-forming bacterium that grows under anaerobic conditions in necrotic tissue. The disease is characterized by generalized rigidity, muscle stiffness, trismus (lockjaw) and hyperesthesia. *Clostridium tetani* is found in 30-42% of world soil samples and in the digestive tract and faeces of animals, especially horses. There is considerable variation in susceptibility between the animal species, the horse being the most susceptible and cattle the least. Introduction to the genital tract at the time of parturition is the usual portal of entry in cattle [1]. Water buffalo is susceptible to most diseases and parasites that afflict cattle, although the effects of disease on buffalo and its productivity are sometimes less evident [2]. Tetanus in buffaloes is relatively less reported [3]. Here, we report a case of fulminant tetanus in an adult buffalo in India.

CASE DESCRIPTION

A six years old Murrah buffalo, five days post-partum was presented for treatment by a farmer of village Rawalwas Kalan, district Hisar with the history of manual removal of retained placenta. The animal was anorectic since third day of parturition and had a temperature of 38.6°C. Pulse rate, muzzle condition and water intake were normal and there were no other

signs of physical injury on body. There was no foul smell from the genital tract. Five days post-partum, prolapse of third eyelid was visible with the animal not allowing its calf to suckle. Discussion with the farmer revealed death of a cross bred cattle calf due to tetanus following its debudding about six months ago in same barn.

There were rapid movements of third eyelid across the cornea followed by a slow retraction. Prolapsed third eyelid (Figure 1) was the earliest and consistent sign, which could be exaggerated by sharp lifting of muzzle or tapping of the face below the eye of the animal [1]. Jaw muscles (prominently masseter) gradually became rigid, thereby restricting jaw movements. This progressed to complete locking of the jaws (Figure 2) by 7th day. Other signs for stiff muscles included drooling of saliva from the mouth, dilatation of nostrils and unsteady straddling gait. Ears became hard and their tips got curved (Figure 3) on day 8. Tail lost its flexibility and gradually stiffened by day 9 (Figure 4). It was held out stiffly towards one side and the spinal arch had started curving giving a bow like appearance (Figure 5). The stiff muscles made it difficult for the animal to sit or stand comfortably. Towards the end of the course of disease, the animal started giving a wooden appearance. Hyperesthesia with exaggerated response to stimuli, failed attempts at swallowing water and micturition following intravenous fluid therapy were the other clinical signs. Rectal temperature and pulse rates were within normal range in early stages of the disease but the animal developed high fever (40°C) during later stages. Jugular vein was barely palpable and the animal stopped urinating on

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day 10. The animal fell like a stiff, wooden structure on day 11 of the onset of the disease and unfortunately succumbed to its illness.



Figure 1: Prolapse of third eyelid



Figure 2: Locking of the jaws



Figure 3: Curved ear tip



Figure 4: "Pump – handle" like position of tail



Figure 5: Bow like appearance of spinal arch

Probable portal of entry of organism seemed to be genital tract at the time of parturition in this case. Treatment was carried out with irrigation of genital tract with 3% solution of hydrogen peroxide [4]. Antibiotic penicillin G procaine in high dose @ 30,000 IU per kg body weight twice daily was given for 4 days. Ketoprofen @ 3mg/Kg body weight intramuscularly at 24 hour interval was also given. Administration of tetanus antitoxin was not attempted because it is of limited value once clinical signs have appeared. Muscle relaxant chlorpromazine @ 1mg /kg body weight intramuscularly three times a day was administered as a supportive therapy to control muscle spasms. Hypertonic saline solution (7.5%) and dextrose normal saline (5%) were given daily from the day animal was off-feed. Buffalo was segregated from the rest of the herd and housed in a dark and quiet place with soft straw bedding. Appearance of the symptoms in this case coincided with the period of 5-10 days reported for tetanus in horses and cattle [1].

DISCUSSION AND CONCLUSION

Reports of tetanus in buffaloes are less common in comparison to that in cattle, horse, sheep and goat.

Diagnosis of tetanus in buffaloes, just like in other species, is entirely based on typical clinical signs like prolapse of third eyelid (first symptom), muscle stiffness and restriction of jaw movements followed by complete locking of jaw, development of curve in spine, erection of ear and typical “pump – handle” (Figure 4) position of tail [1, 5]. However, prolapse of third eyelid being a clinical sign was observed in the advanced stage of disease in the bovine species [3]. Diagnosis was established on the basis of case history and clinical signs. Thus, tetanus is a disease to be considered in buffalo in India. This case report along with a potential epidemiological association with an earlier death of a cross-bred cattle calf, 20 days post debudding due to tetanus, suggests the contamination of soil with *Clostridium tetani* spores in the concerned barn. These spores might have gained entry into the genital tract via retained placenta from soil bedding/fomites and proliferated and produced tetanolysin and tetanospasmin when traumatic injury took place due to manual removal of placenta. Introduction of organism during handling of post-partum metritis leading to tetanus in a high yielding dairy cow has been documented [6]. Such tetanus cases associated with unsanitary conditions at the time of parturition can be avoided by adopting hygienic

practices and proper sanitation. *Clostridium tetani* spores can persist in soil for years and are resistant to most common disinfectants. Vaccination is usually not practiced in buffaloes but in areas where further cases may be anticipated two doses of tetanus toxoid @1-2ml I/M 45 days apart can be given in late pregnancy.

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