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Tetanus in a calf: A case report

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Abstract

A one-day old female Crossbred Jersey (CBJ) calf was presented to the Referral Veterinary Polyclinic (RVP), ICAR-IVRI with the complaint of dullness, inappetence and dribbling of urine from the umbilical cord since birth. Physical examination revealed high temperature (104.5°F), difficulty in drinking milk, erect ears, muscle rigidity, hindlimb stiffness and difficulty in walking. Based on these classical findings, the present case was diagnosed as Tetanus. The calf was treated with Anti Tetanus Serum (ATS), procaine penicillin, and fluid therapy for 5 days. The animal showed uneventful recovery following therapeutic management.

Keywords: Tetanus, *Clostridium tetani,* Calf, Anti tetanus serum (ATS)

Introduction

Tetanus is a non-contagious bacterial disease caused by *Clostridium tetani*, Gram positive bacteria, spore forming obligate anerobic bacteria. Among these, umbilical infection is the primary cause for tetanus in young animals like calves, sheep and foals. (Das et al., 2011; Popoff, 2020 and Saravanan *et al*., 2021). Neonatal tetanus can occur with contamination of umbilical cord due to certain insanitary conditions such as parturition (Constable *et al*, 2017). The present case describes about tetanus in a calf.

Case History and Observation

Day old female CBJ calf weighing around 28 kg was presented to the Referral Veterinary Polyclinic (RVP), ICAR-Indian Veterinary Research Institute with the history of inappetence, dribbling of urine from the umbilical cord. High temperature (104.5°F), difficulty in drinking milk, muscle rigidity, stiffness in the hindlimb (Fig 1), absence of stifle joint flexion and erect ears carrying backwards (Fig 2) with no abnormality in the forelimb were noticed. The calf showed difficulty in walking and jumping gait was observed while walking. Blood sample was taken for haematological examination. Fecal sample was taken for parasitic endoparasites. Faecal sample was negative for endoparasites. Haematological analysis was within the normal range.

Fig.1. Calf in lateral recumbency with hindlimb stiffness and erect ears

Fig.2. Calf shows erect ears carrying backwards

Treatment and Discussion

Based on these findings, the calf was diagnosed with Neonatal Tetanus. The calf was treated with Fortified procaine penicillin (@ 6000 IU/kg IM), tetanus toxin, anti-tetanus serum (@ 1500 IU was given subcutaneously :3 doses), Normal saline (@ 10 ml/kg IV), diazepam (@ 0.5 mg/kg IV) and vitamin B1 B6 B12 (@ 2ml IV) was given for the period of 7 days. By

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the 3rd day of treatment, the calf showed improvement in the milk intake and significant reduction in the stiffness of hindlimb was observed. Complete recovery was noticed on the 7th day of treatment.

Fig.3. After treatment

Anti Tetanus Serum @ 1500 IU SC SID (2 doses) was given for the effective neutralization of toxin as given by the previous reports (Bhikane *et al*., 2005; Das *et al*., 2011; Khan et al., 2016). The significance of Anti tetanus serum (ATS) is to neutralize the unbound toxin in the body of the animal outside the central nervous system. Normal saline was given to restore the hydration status. Administration of Anti Tetanus serum (ATS) in the earlier stage of Tetanus infection is highly effective in successful improvement of the condition.

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