Case Report

FATAL TRYPANOSOMOSIS IN A CALF AND ITS CLINICAL FINDINGS – A CASE REPORT

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ABSTRACT

A non-descript breed, 6 month old female calf was presented with history of high fever and severe convulsion at Large Animal outpatient unit Veterinary Clinical Complex of Veterinary College and Research Institute, Tirunelveli. Clinical examination revealed congested mucous membrane, severe dehydration, and enlarged prescapular lymphnode and nervous signs. Haematological examination revealed reduction of haemoglobin and hypoglycemia was noticed in biochemical examination. Blood pictures showed normocytic hypochromic anemia. Peripheral blood smear examination confirmed the presence of Trypanosoma evansi based on the morphological characters. Animal was treated with supportive therapy of 5% dextrose, tribivet and vitamin C. Animal died on the day of presentation but it might have recovered if treated early.

Keywords: Anemia, hypoglycemia, trypanosomosis.

Received : 30.09.2024 Revised : 13.06.2025 Accepted : 24.06.2025

INTRODUCTION

Trypanosomosis is a significant important disease affecting domestic animals, wild and zoo animals. The disease has severe impacts on livestock and cause significant losses to agricultural economy (Singh and Chhabra, 2008). All the economically valued animals are vulnerable to disease caused by unicellular protozoan parasite of *Trypanosoma* genus. Delaying the early diagnosis and treatment leads to high morbidity and mortality (Leach and Roberts, 1981: Connor, 1992). The common route of transmission through major credited routes are biting insects including horseflies, stable flies (*Tabanus, Stomoxys, Haematopota, Chrysops* and *Lyperosia*) and routes are also possible like iatrogenic, vertical transmission or oral route via eating infected meat (Desquesnes *et al.,*

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2013). The disease is common in monsoon and post rainy season in India due to more fly activity (Dodiya *et al.,* 2020). Affected animals are showing important clinical signs like fever, progressive anaemia, weakness, oedema, conjunctivitis, marked depression, abortion, petechial haemorrhages, neurologic abnormalities, and sudden death (Radostits *et al.,* 2006). The present case report describes the trypanosomosis in a non-descript calf and its clinical pathological parameters.

CASE HISTORY AND OBSERVATION

A 6 month old female non-descript breed calf was presented to Veterinary Clinical Complex, Veterinary College and Research Institute, Tirunelveli, Tamil Nadu with the history of inappetence, severe convulsion and sternal recumbency. Clinical examination revealed pyrexia with temperature of 40^{o}C, severe dehydration, pale mucus membrane, enlarged prescapular lymph node and muscular twitching and convulsion. Peripheral blood smear and blood sample were collected and processed. Peripheral blood smear was prepared and was stained with Leishman - Giemsa stain for 1min. Then double the quantity of distilled water was added to the stain and allowed for 20 min. Then, the smear was washed with distilled water, air dried and the slide was observed under oil immersion. Blood smear examination was confirmed positive for *Trypanosoma evansi* (Fig-1 and 2) based on length (26 µm), presence of flagellum, nucleus at centre, presence of large undulating membrane, blunt posterior part and moderate sub terminal kinetoplast. Haematology revealed low haemoglobin content (Table-1) and severe hypoglycemia was (Table-2) noticed in biochemical parameters and other parameters were normal. Based on the clinical signs, calf was treated with 5% dextrose via intravenous route, injection Tribivet 5ml intra-muscular route, injection vitamin C 5ml intramuscular route. The animal died on the day of treatment.

DISCUSSION

The most commonly used chemicals to treat trypanosomosis in animals are diminazene aceturate (Sunandhadevi *et al.,* 2022 and isometamidium chloride (Bharath Kumar Reddy *et al* 2016; Arun Kumar *et al.,* 2024). This case received only supportive therapy and was not given specific treatment. The calf might have saved if animal was brought one day before. In this case, the predominant clinical sigs are nervous signs, it could be a per-acute form of disease. This is agreement with Singh veer and Singla, (2015) who stated that the animal die all of a sudden after showing nervous signs (convulsions, ataxia, apparent blindness, frenzy and circling movement) in per acute form. The cause of death in such animals may be occlusion of minute cerebral blood vessels leading to anoxia and fatality. In this case, there are no major changes in biochemical value except low level of glucose (17mg/dl). This result is concomitant with other report of Takeet *et al.,* 2009 who stated that hypoglycaemia occurs due to large amount of blood glucose utilization by trypanosomes. Anaemia is a

one of the haematological changes due to the extravascular destruction of RBCs and toxins librated by trypanosome organism (Pathak and Singh, 2005). (Singhveer and Chhabra, 2008). Further, it is stated that anaemia in *Trypanosoma* infection is due to erythrophagocytosis and haemolysis (factors from Trypanosoma damage the erythrocytes). In the present case, significant reduction of haemoglobin (6.8 gm/dl) and PCV (18.5 %) were noticed. A presumptive diagnosis was arrived based on clinical signs like anaemia and nervous sigs. However confirmation of trypanosomosis by evidence of organism in blood smears with specific morphological appearances is required. This case was diagnosed and recorded as acute form of trypanosomosis in calf with specific clinical signs like anaemia and hypoglycaemia.

Fig.1. *Trypanosoma evansi* – Calf – Non- Descript – Leishman and Giemsa stain – 400x

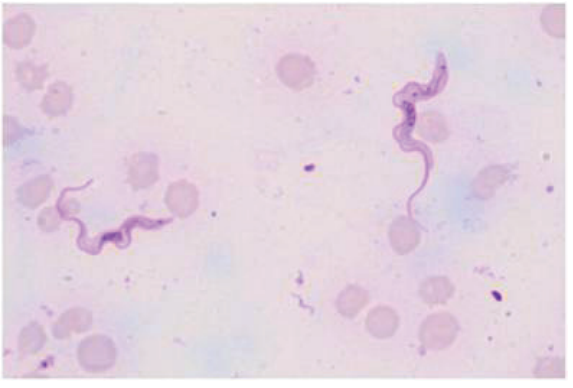

Fig.2. Trypanosoma evansi – Calf – Non -Descript – Leishman and Giemsa stain – 200x

Table.1. Haemotological examination

Haemogram		Differential count	
Hb	6.8 g/dl	Neutrophils	38
PCV	18.5 %	Lymphocytes	61
RBC	1.36million/µl	Monocytes	1
WBC	9200 / µl	Eosinophils	0
Platelets	470,000 lakhs/cmm	Basophils	0
Blood Picture:	Normocytic hypochromic anemia		

Table.2. Biochemical examination

Parameters	Value	Parameters	Value
BUN	130.23 mg/dl	Calcium	8.7 mmol/dL
Creatinine	1.5 mg/dL	Phosphorus	3.1 mmol/dL
Total protein	5.3 g/dL	Magnesium	1.5 mmol/dL
Albumin	2.5 g/dL	Glucose	17 mg/dL
SGOT	116 IU/dL	Sodium	181.91 mmol/dL
ALP	199 IU/dL	Chloride	104.65 mmol/dL

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