



E-ISSN: 2320-7078

P-ISSN: 2349-6800

www.entomoljournal.com

JEZS 2020; 8(5): 1420-1422

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Received: 12-06-2020

Accepted: 10-08-2020

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Clinical management of trypanosomiasis in tiger cub: A case report

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Abstract

Trypanosomiasis has been reported in large feline population from India and has been responsible for mortality in number of animals of rare species. The present report describes a case of fulminant trypanosomiasis in 10-month old male tiger cub showing high fever, nervous signs involving head pressing, delirium beside vomiting. Trypanosomes were observed in both thick and thin smear of blood. Hematological examination showed total leucocyte count within normal range, severe left shift with 50% of immature band cells and possibility of DIC (severe thrombocytopenia). Uneventfully but far timely management and therapy of animal should have succumb to trypanosomiasis as massive parasitemia and nervous signs were indicator of bad prognosis. Single dose of berenil containing Diminazene aceturate as active ingredient, was injected along with supportive therapy at recommended dose rate for treatment of sick tiger cub.

Keywords: Anaemia, management, trypanosomiasis, tiger cub, zoo

Introduction

Trypanosomiasis has been reported in large feline population from India and has been responsible for mortality in number of animals of rare species. It is caused by *Trypanosoma evansi*. Generally, all blood sucking flies can transmit the disease, despite the fact that *Tabanus* and *Stomoxys* are most well-known. When there is abrasion in oral mucosa, the wild carnivores may get infection by ingestion of infected meat. It affects tigers, lion, leopard, jungle cat, jaguar, wolf, deer, elephant, wild pig etc [1]. Among wild animals, Tiger and elephant are highly susceptible to trypanosomiasis [2]. Anaemia is the most common cause of death of infected animals [3] which is might be due to increase erythrophagocytosis and increased destruction of RBCs by the trypanosome organism [4]. All species of *Trypanosoma*, apart from some strains of *T. vivax* which produce a hyper acute and acute infection, characterized by high fever, parasitemia, weight loss, sleepiness, lymphadenopathy, weakness, panting, head pressing, reluctant to walk to move, corneal opacity, edema of limbs, seizure and hemorrhages on the mucosal and serosal surface [5]. Sporadic reports of trypanosomiasis in tiger due to *T. evansi* have been reported by many authors from different parts of the country. However, no reports of trypanosomiasis in tiger from Gujarat could be traced in the scientific literatures. Hence, the present case report seems to be the first report of *T. evansi* in tiger from Gujarat.

History and observation

A 10-month old male tiger cub at Sarathana Zoo was found in recumbent position and taking respiration vigorously. Immediately the animal was brought to squeeze cage for detailed examination. The visible mucous membrane was slightly pale and watery. The cub was normal day before illness. On clinical examination, animal had shown intermittent fever (103.5-105°F), panting, Pulse rate were 76/min., enlargement of pre-scapular lymph-node, yellowish urine, reluctant to move, sleepy mood, head pressing, delirium besides vomiting.

Diagnosis

Blood sample was collected for blood protozoa from the tail vein. Trypanosomes were observed in both thick and thin smear of blood. Hematological examination showed total leucocyte count within normal range, severe left shift with 50% of band cells and possibility of DIC due to severe thrombocytopenia. On the basis of clinical finding and microscopic detection of organism condition was diagnosed as trypanosomiasis and clinical treatment undertaken.

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Treatment and Discussion

Berenil (containing diminazene aceturate) @ 3.5mg/kg body weight deep I/M single dose, DNS @ 400 ml twice daily I/V for 3 days. Meloxicam @ 0.2mg/kg body weight I/M bid for 3 days. Belamyl (containing B-complex with liver extract) @ 2ml I/M bid for 3 days followed by Tab. Liv 52 DS orally for 15 days once daily. On 4th day, animal responded to treatment and eating as usual. The rapid respiration gradually decreases and become normal after treatment. Nervous signs were recovered and does not show sign. again. On 6th day, cub was walking normally. the animal was under close observation with supportive therapy being continued. Diagnosis in these cases was uniquely based on the microscopic detection of trypomastigotes and by response to therapy. The rapid clinical improvement accompanied by the disappearance of trypomastigotes in blood smears performed after the end of therapy seems to confirm the diagnosis. Due to massive parasitemia, animal should have succumbed to an uneventful death however; timely management and therapy of animal protected it from disease. In the described clinical case, the Tiger demonstrated intermittent fever (103.5-105°F), anorexia, panting, enlargement of pre-scapular lymph-node, drowsiness, head pressing, delirium and vomiting. The blood smear revealed trypanosomes. Similar clinical signs were observed by [6]. But some author [7] also observed bilateral corneal opacity with ocular discharge which is characteristic finding in chronic form of trypanosomiasis in jungle cat. However, in our case, the animal did not show any signs of corneal opacity, swelling of hind limbs and diarrhea. Diagnosis in these cases was uniquely based on the microscopic detection of trypomastigotes and by response to therapy. The rapid clinical improvement accompanied by the disappearance of trypomastigotes in blood smears performed after the end of therapy seems to confirm the diagnosis and indicates that diminazene aceturate effective against trypanosomes. Similarly, [8] who also successfully treated male Tiger with Berenil along with supportive therapy. In the described clinical case, the total leukocyte count was within normal range. However, severe left shift with 50% of immature band cells and possibility of DIC due to severe thrombocytopenia were observed in the blood smear. This finding consistent with severe impairment and reported to be a poor prognostic indicator in cats. Usually, this happen as the

bone marrow's ability to supply neutrophils to the blood is exceeded by the rate at which neutrophils move into inflamed tissue [9, 10] reported *T.evansi* infection in an apparently healthy male Royal Bengal tiger which belonged to Arignar Anna Zoological Park, Chennai that had died suddenly due to massive parasitemia. Blood smears collected immediately after death of the animal revealed *T.evansi* organism. Enlargement of spleen and lymph nodes, an increase of pericardial fluid, congested liver, spleen, kidney, lung and brain were noted on post mortem examination. Similarly, unexpectedly death in tigers due to massive parasitemia were also reported by [11, 12]. Due to massive parasitemia, animal should have succumbed to an uneventful death however; timely management and therapy of animal protected it from disease.

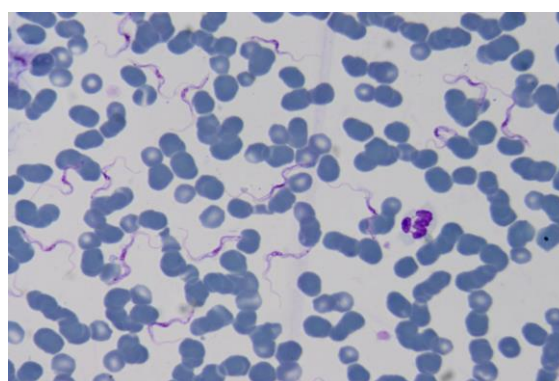


Fig 1: Blood smear showing trypomastigotes organism in tiger cub

Conclusion

A trypanosome spp. infection was detected in the tiger cub of Dr. Shyama Prasad Mukharjee Municipal Zoo, surat, and was treated successfully with berenil @ 3.5mg/kg body weight. The diagnosis was based on microscopic detection and confirmation through positive response to treatment. The case highlights certain improvements like routine screening of large cats in captivity for infectious and preventive disease and the adaption of good hygiene and proper sanitation measure for prevention and control of haemoprotozoa to avoid uncalled for mortality in these rare species.

Table 1: Complete Blood Count (CBC) of male tiger cub during the disease

Test	Result	Unit	Normal Value
Hb	13.40	g/dl	8-15
TLC	8.4	10 ³ /μl	5.5-19.5
Platelet count	4.6	10 ⁵ /μl	3-5
Band cells	00	%	0-1
Neutrophils	83	%	35-75
Lymphocytes	09	%	20-55
Eosinophils	04	%	2-12
Monocytes	04		1-4
Basophils	00		rare

Reference

1. Reid SA, Husein A, Partoutomo S, Copeman DB. The susceptibility of two species of wallaby to infection with *Trypanosoma evansi*. Australian Veterinary Journal. 2001; 79(4):285-8.
2. Chandrasekharan K. Prevalence of infectious diseases in elephants in Kerala and their treatment. In the Asian

elephant: ecology, biology, diseases, conservation and management. Proceeding of the national symposium on the Asian elephant. Kerala Agriculture University, Trichur, India, 1995, 148-155.

3. Logan-Henfrey LL, Gardiner PR, Mahmoud MM. Animal trypanosomiasis in sub-Saharan Africa. In: Kreier JP, Baker, JR Editors Parasitic Protozoa. San Diego, CA,

- USA: Academic press. 1992; 2:157-275.
4. Mbaya A, Kumshe H, Nwosu CO. The mechanisms of anaemia in trypanosomosis: A review. *Anaemia*. Shanghai: In Tech. 2012; 29:269-82.
 5. Urquhart GM, Armour J, Duncan JL, Dunn AM, Jennings FW. *Veterinary Parasitology*. 2nd Ed. Blackwell Science Co. UK, 2002, 217.
 6. Devasena B, Shobhamani B. Trypanosomiasis in a tigress-a case report. *Intas Polivet*. 2006; 7(1):117.
 7. Dakshinkar NP, Dhoot VM, Uphadhye SV, Bhojne GR, Sarode DB, Kolte SW. Trypanosomiasis in a jungle cat. *Indian Vet J*. 2002; 79(1):66-67.
 8. Khan BN, Ali Z, Yasmeen R, Bibi F, Mehboob Z, Mehboob N. Trypanosoma infestations in Royal Bengal Tiger (*Panthera tigris tigris*) at Lahore Zoological Gardens and its therapy. *The Journal of Animal and Plant Sciences*. 2015; 25(3):477-82.
 9. Manohar BM, Selvaraj J, Jayathangaraj MG, Khan PN. Pathology of Trypanosoma evansi infection in a tiger. 2003; 80:505-507
 10. Burton AG, Harris LA, Owens SD, Jandrey KE. Degenerative left shift as a prognostic tool in cats. *Journal of Veterinary Internal Medicine*. 2014; 28(3):912-7.
 11. Sinha PK, Mukherjee GS, Das MS, Lahiri RK. Outbreak of trypanosomiasis evansi amongst tigers and jaguars in the zoological garden, Calcutta. *The Indian Veterinary Journal*. 1971; 48(3):306.
 12. Choudary C, Narasimhaswamy B, Hararamdas J, Rao PB, Rao MR. A case of sudden death in a male tiger cub (*Panthera tigris*) with trypanosomiasis-a note. *Indian Veterinary Journal*. 1986; 63(6):506-7.