PARAGONIMOSIS IN A ROYAL BENGAL TIGER- A CASE REPORT

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ABSTRACT

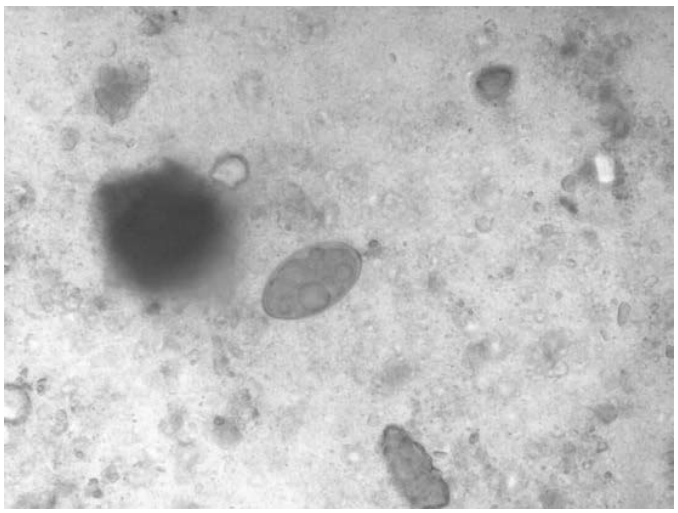
Paragonimosis is an important trematode infection affecting free living and captive wild felids all over the world. *Paragonimus westermanii,* is the most important and widely distributed of the many *Paragonimus* species that exist. This paper reports a case of Paragonimosis due to *P. westermanii* in a rescued royal Bengal tiger and its successful treatment with oral administration of Praziquantel- Fenbendazole combination.

INTRODUCTION

Paragonimosis is an important parasitic disease affecting wild felids. *P. westermanii* infections have been reported in tigers (Rao and Acharya, 1984) and it's eggs were detected in faecal samples of civet cats and toddy cats (Singh *et al*., 2006). *P. westermanii* infection was detected during necropsies of tigers from different parts of country like Corbett National Park, Uttar Pradesh (Arora and Das, 1988), Kanha National Park, Madhya Pradesh (Parihar and Shrivastava, 1988), Vandalur Zoological Park, Tamil Nadu (Latha *et al*., 2000) and Assam State Zoo in Guwahati (Nashiruddullah and Chakraborty, 2001). The species was also reported from a clouded leopard (Hiregoudar and Pethkar, 1970) and was found in a leopard during post mortem and coprological examination in Thiruvananthapuram Zoo (Pythal *et al*., 1993; Varadharajan and Pythal, 1999). In captivity, the parasitic infections in these animals can aggravate and can pose a serious threat (Muoria *et al*., 2005).

CASE HISTORY AND OBSERVATION

A 16 old male tiger (*Panthera tigris*) was rescued from Wayanad forest and presented to Zoo hospital, Thiruvananthapuram with the history of dyspnea, wound and debility. The animal was said to have devoured almost twenty tethered cattle as it could not hunt wild fauna due to exercise intolerance. Faecal sample examination revealed presence of yellowish brown operculated eggs of *P. westermanii* (Fig. 1). Based on clinical signs and faecal sample examination the condition was diagnosed as paragonimosis.



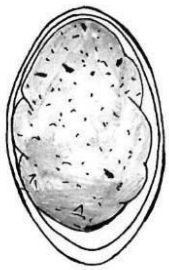


Fig. 1. *P. westermanii* egg – yellowish brown with operculum, shell thickened at the opposite pole.

TREATMENT AND DISCUSSION

The animal was baited with fenbendazole 3.75 mg/ kg body weight and praziquantel 1.75 mg/kg daily (Fentas plus veterinary, fenbendazole I.P. 15 mg/ml and praziquantel I.P. 5mg/ml, INTAS Pharmaceuticals Ltd) for 14 days continuously in meat. The usual dose rate for fenbendazole is 20-30 mg/kg orally for 5 days and praziquantel is 5-7.5 mg/kg orally for wild felines (Swarup *et al*., 2009). Baiting such large dosage in meat may result in reduced palatability and rejection of meat by the animal. Hence the low dose regimen for two weeks was formulated. The tiger started showing improvement in dyspnea after two weeks. But the faecal sample examination after two months still revealed the presence of *Paragonimus* ova. Hence the regimen was repeated for a period of three weeks. Faecal sample examination after two months revealed the presence of *Paragonimus* ova and the regimen was again repeated for a period of 21 days orally, OD. Animal was also given ivermectin orally at a dose rate of 50 mg/kg b.wt. and long acting Enrofloxacin (Flobac SA, Enrofloxacin 100 mg/ml, 30ml vial, INTAS Pharmaceuticals Ltd.) at a dose rate of 1ml/30kg b. wt. as IM. This time, no ova could be detected on feacal sample examination after two months and even after six months. Gradual reduction in dyspnea was observed after six months and animal recovered uneventfully.

The most common species of *Paragonimus* encountered in Indian wild carnivores is *P. westermanii* though *P. compactus, P. edwardsi* and *P. kellicotti* have also been reported. The flukes remain inside the cysts in the lung parenchyma and rarely in brain, spinal cord and other organs. Most of the cases are reported based on post mortem findings and in a few instances through faecal sample examination (Acharjyo, 2004). Eggs may be found in sputum, faeces and

occasionally in pleural and peritoneal fluid. It is difficult to find the eggs, as they are released intermittently and in small numbers. The pulmonary infection develops slowly which could be manifested as chronic intermittent cough, lethargy, hemoptysis and dyspnea associated with pneumothorax and pneumonia.

Praziquantel is the drug of choice for both pulmonary and extra pulmonary paragonymosis. Fenbendazole or albendazole given daily for two and three weeks, respectively are also valuable treatment protocol for reducing number of eggs deposited and eventually killing the parasites. (Ned, 1991). Triclabendazole at 10 mg/kg body weight has comparable efficacy, safety and tolerability with praziquantel.

SUMMARY

Paragonimosis is often asymptomatic but when it causes disease, *P. westermanii* generally manifests as a lung infection. Definitive diagonosis can be made by identifying *P. westermanii* eggs in sputum or faeces. The disease can ususally be effectively treated with praziquantel.

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