

Concurrent trypanosomiasis and ehrlichiosis in a dog - a case report

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ABSTRACT

Trypanosoma sp. and *Ehrlichia* sp. was recorded in a 3½ years old mongrel male dog at the Veterinary College Hospital. In the blood profile, neutrophilia with monocytosis and elevated levels of creatinine kinase and aspartate aminotransferase were noted. The ECG showed bradycardia, right bundle branch block, deep "s" waves and absence of "p" waves. Blood smear examination revealed the presence of both organisms.

Key words: trypanosomiasis, ehrlichiosis, dog, mixed infection

Introduction

Trypanosoma cruzi is a protozoan responsible for causing Chagas disease primarily affecting South American people. The disease is characterised by a rarely fatal acute myocarditis soon after infection followed by a long asymptomatic phase. Some cases then progresses to a debilitating and often fatal phase characterised by dilative cardiomyopathy

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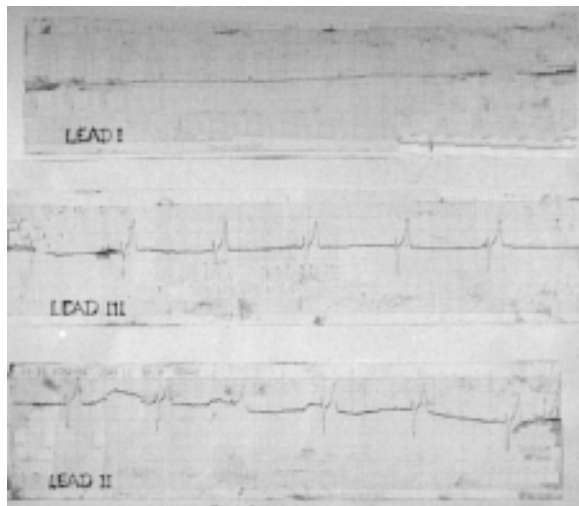
or megaviscus syndrome. Most cases have been diagnosed at necropsy. So, little is known about the temporal relationship between the development of acute and chronic clinical disease (BARR et al., 1992). Concurrent occurrence of *Trypanosoma cruzi* and ehrlichiosis in dogs is a rare occurrence and hence reported.

Materials and methods

A 3½ years old mongrel male dog was brought to the small animal medical unit of Madras Veterinary College Hospital with a history of weight loss, anorexia, diarrhoea and exercise intolerance.

Results

On initial physical examination the dog showed severe depression, pyrexia, difficulty in respiration, hyperaemic mucus membrane and lymphadenopathy. The dog could not stand, but was stiff in its gait and preferred to lay down in sternal recumbency. There was mass loss and generalised muscular weakness. The pulse and respiratory rates were



Pic. 1. Electrocardiographic changes in a dog with ehrlichiosis and trypanosomiasis

normal. A CBC was performed and the animal had neutrophilia and monocytosis. The biochemical profile revealed elevated levels of creatinine kinase (86 iu/l) and aspartate aminotransferase (57 iu/l). The blood smear examination revealed *Trypanosoma* sp. and *Ehrlichia* sp. A definitive diagnosis was made based on the findings of haemoflagellates and *Ehrlichia* sp. in the circulation. The probable route of transmission of this infection was ingestion of infected vector or contaminated feces on a self inflicted wound.

The electrocardiographic observations were bradycardia, right bundle branch block, deep 's' waves, presence of ventricular premature contractions and absence of 'p' waves or hidden 'p' waves. Marked dilatation of the left ventricular auricular wall was detected in echocardiography.

Discussion

The acute stage of trypanosomiasis in human beings is reported to be symptomatic in approximately 25% of those infected. Symptomatic individual often develops ECG abnormalities. The most common ECG abnormalities were prolongation of P-R interval, primary 'T' wave changed, reduced 'R' wave amplitude, prolongation of Q-T interval and ST-T changes (LARANJA et al., 1956) and included VPC which are often multiform in configuration, right bundle branch block, prolonged Q-T interval and left anterior hemiblock (ARRIBADA et al., 1986). Several ECG abnormalities seen in this case are consistent with the findings in human reported by the above mentioned authors.

The 'R' wave amplitude depression and MEA shifts have been attributed to myocardial disease but are non-specific findings that do not generally represent focal lesions (ANDRADE et al., 1981). In this present case the decreased 'R' wave amplitude may be due to the myocardial involvement.

Muscle damage was evident by clinical observation and increased serum creatinine kinase activity. Increased aspartate aminotransferase was associated either with the muscle damage (or) hepatocellular leakage, as

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damage to either tissue can cause an increase in AST activity. Monocytosis was probably due to the replication of *Ehrlichia canis* in that cell.

Echocardiography have been used to define anatomical abnormalities and revealed characteristic appearance associated with *T. cruzi* induced heart disease in human beings. Those findings included ventricular dilatation, diffuse hypokinesis and thinning of left ventricular wall (ACQUATELLA et al., 1980). This is in agreement with the present study.

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SAŽETAK

Trypanosoma sp. i *Ehrlichia* sp. ustanovljene su u psa mješanca u dobi od tri godine. Pretragom krvi utvrđena je neutrofilija i monocitoza te povišena razina kreatinin-kinaze i aspartat-aminotransferaze. Elektrokardiografijom je ustanovljena bradikardija, blokada desne grane živčevlja miokarda, duboki 's' valovi te odsutnost 'p' valova.

Ključne riječi: tripanosomijaza, erlichioza, pas, mješovita infekcija
