ABSTRACT

A study on the pathogenesis of haemorrhages, tissue damage, disseminated intravascular coagulation and thrombocytopenia in *Trypanosoma vivax* infected cattle was carried out in order to determine the clinico-pathological changes, ultrastructural changes in tissue, peripheral leukocytes and platelets, haematological parameters, levels of parasitaemia, thrombocyte counts, megakaryocyte changes, PPC, PFC and PST.

Ten animals were infected with *Trypanosoma vivax* (KETRI 2445) and four served as controls. The study was carried out over a period of 28 days. Two animals died 22 days post infection and the others were sacrificed in extremis.

Clinically, the infected animals had pyrexia, tachycardia, tachypnoea, rough hair coat, anaemia, haemorrhages, inappetence, salivation, incontinence, depression, nasal and lacrimal discharge, diarrhoea, meleana, emaciation, bilateral corneal opacity, incoordination of hind limbs and recumbency. The gross and histopathological lesions included haemorrhagic pancarditis, pulmonary oedema, interstitial and glomerular nephritis, haemorrhagic gastroenteritis, splenic and hepatic hemosiderosis and erythrophagocytosis, thrombosis, icterus and mononuclear cell infiltration in tissues.
Haematological findings revealed reduction in PCV, RBC, Hb, WBC and thrombocyte count. All the animals tested positive for PST. The PPC and PFC values were not significantly altered. Thrombocytopenia was inversely proportional to parasitaemia. Ultrastructural changes included increased activity of the leukocytes, platelet and microvascular damage and extravascular localization of trypanosomes.

It can therefore be concluded that the haemorrhages observed in the present study were due to thrombocytopenia, DIC and microvascular damage induced by *T. vivax*. Platelet destruction, platelet consumption as part of DIC and dysthrombopoiesis were the cause of thrombocytopenia which was inversely proportional to parasitaemia. Severe haemorrhagic pancarditis was one of the common lesions. The parasite was localized extravascularly confirming that *T. vivax* is both a plasma and a tissue parasite.