
A disease affecting dogs in Brazil, referred to popularly as “nambiuvú” (bloody ears) and believed to be transmitted by ticks, has been observed in animals infected with an unclassified organism described originally in 1908 as a protozoan parasite, and known locally as Rangelia vitalli. In a series of 9 cases, the disease was characterized clinically by anemia, jaundice, fever, lymphaden- splenomegaly, hemorrhage in the gastrointestinal tract, and bleeding from the nose, oral cavity and tips and external surface of the pinnae. The ixodid ticks Rhipicephalus sanguineas and Amblyomma aureo- latum infested affected dogs from suburban and rural areas, respectively. Laboratory findings included regenerative anemia, spherocyto- sis, icteric plasma and bilirubinuria. Cytology revealed zoites in the bone marrow. Histologically, numerous round, 2.5 micrometer zoites were seen within the cytoplasm of blood capillary endothelial cells which were positive immunohistochemically for vWF. Lan- ghans-type multinucleate giant cells were found in the lymph nodes and choroid plexus. There was erythrophagocytosis in the lymph node sinuses and infiltration of the medullary cords by plasma cells. Ultrastructurally, this organism had an apical complex with a polar ring and rhotries, and was contained in the cytoplasm of capillary endothelial cells, within a parasitophorous vacuole which had a tri- laminar membrane with villar protrusions. The organism tested posi- tive by immunohistochemistry for Babesia microti, and was posi- tive by in situ hybridization for B. microti. The disease was repro- duced by intravenous inoculation of blood from a naturally infected dog into an experimental dog. This study shows that this organism is a piroplasm. It seems to be different from Babesia as it has an intraendothelial stage.