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Parasite-host interaction in odontocete cetaceans of Canary Island

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The cetaceans residing in the Canary coasts are species considered as natural heritage of the archipelago. The Canary Islands is an area with great biodiversity in cetaceans with at least 30 different resident species, most of them odontocetes and there is a Canary Island Stranding Network whose objectives is the monitoring and study of cetaceans that for different reasons strand on our coasts. Dead stranded cetaceans are regularly pathologically studied by Veterinary Pathologists at Institute of Animal Health (University of Las Palmas de Gran Canaria) since the 90s. Parasitized organs have been grossly and microscopically analyzed from 1999 to 2012 and the etiological diagnoses due to parasitic disease are included in the natural pathological categories. In the period 1999-2005, within the pathological category associated with a good nutritional status, diagnosis by parasitic pathologies represented 18.7%, including *Nasitrema* sp., *Toxoplasma gondii* and *Crassicauda* sp. while within the pathologies associated with a significant loss of nutritional status, the main lesions were related to multiorgan parasitosis (45.2%), where lesions by ciliated protozoa and pulmonary nematodes predominated. On the other hand, during the period 2006-2012, within the pathologies associated with good nutritional status, parasitic etiological diagnoses were diagnosed in 28.6%, including cases of toxoplasmosis at CNS and systemic level, renal, arterial and uretral crassicaudiasis, *Nasitrema* sp. with involvement of the pterygoid sinuses, middle and inner ear and extension to the CNS, severe parasitization by *Brachycladium atlanticum* and *Pholeter gastrophilus* in the gallbladder and in the pyloric stomach, respectively. Finally, in the pathologies associated with a significant loss of nutritional status, etiological diagnoses due to parasitic disease accounted for 26.5%. Disseminated toxoplasmosis, lesions due to *Nasitrema* sp. and multisystemic ciliate protozoa were observed. The role of parasites as a cause of stranding and death has been widely discussed in the scientific literature. These studies corroborate the presence of certain parasites and offer evidence supporting the lethality of some agents, depending on the functional importance of the affected organ.

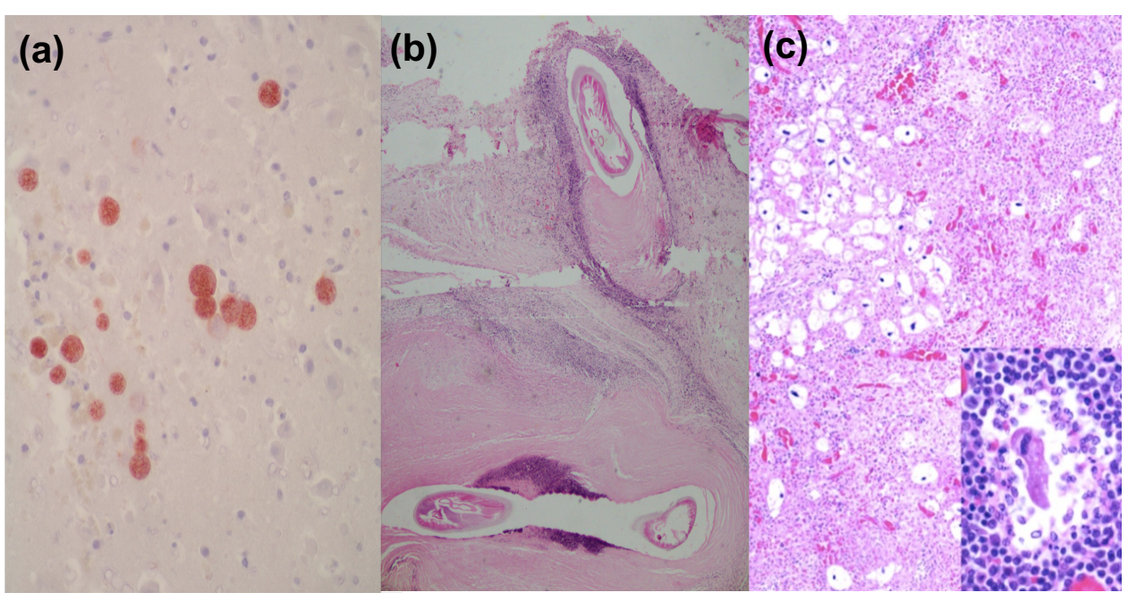

Figure 1. Histological images of different parasites affecting organs. (a) *Toxoplasma gondii* in the SNC leadind to encephalitis. (b) *Crassicauda sp*. causing urinary obstruction. (c) Ciliated protozoa in the linph node causing pyogranulomatous linphadenitis.

Figure 2. Macroscopic images of different parasites affecting organs. (a) *Nasitrema* sp. intralesional in the SNC with hemorragies (b) Severe parasitization by *Crassicauda sp*. in the kidney. (c) *Pholeter gastrophilus* in the stomach mucosa. (d) *Bolbosoma* sp. causing intestinal luminal obliteration. (e) Pulmonary nematodes in the pulmonary tract.