

Canine Dirofilariasis In Panamá. First Case Report.

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Short report

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Abstract

Background. The living beings have suffered with the climate changes that are affecting the planet in the latest decades. This has allowed the development of many vectors with the correspondent increase in their vector-borne diseases (VBD). Panama is a country that historically has suffered with the effects of the VBD even before the Panama Canal construction. *D.immitis* is a worldwide distribution parasite found in most American countries, but heretofore it was not recorded on the Panamanian isthmus.

Methods. Here we report a male, 5.5 years old dog in the Boca Chica region, San Lorenzo district, Chiriqui province, Rep of Panama. The canine arrived with serious cardiopulmonary symptoms, convulsions and strong arrhythmia. We examined the dog's blood cells and found hemoglobin levels in 2.7 g/dL, and a quick snap quattro test showing a positive result for *D. immitis*. Because of the gravity of the symptoms and the evident suffering of the patient, the owners requested that the dog be euthanized. We proceeded with the euthanasia and removed the heart. It was fixed in formaldehyde and sent for an anatomic histopathology study.

Results. Thirty whole adult nematodes were found, 14 females and 16 males, measuring between 20.2 cm and 12.4cm long on average, respectively, located on the pericardium, pulmonary artery and right ventricle and atrium. The anatomy histopathology results shows chronic myocarditis, chronic pericarditis, and enlargement of the right ventricle. However, the pulmonary artery-vein endothelium, and inner space seems to be normal. Inflammatory infiltrate was found on myocardium compound of lymphocytes and macrophages, characterizing the myocarditis. Monocytes/macrophages infiltrate was found on the pericardium at the place where the specimen was collected characterizing the pericarditis.

Conclusions. We can conclude, starting with the observed case, that *D. immitis* epidemiological research is necessary in Panama to ascertain the real prevalence and pathogenesis of the nematode in this country, to identify the vectors involved, the damage to dogs, the prevalence in wild animals, and the incidence of lesions on humans. Studies are indicated to identify *Wolbachia* sp bacteria on the nematode, clarifying this bacteria's participation in the pathogenesis of heartworm disease.

Full Text

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Figures

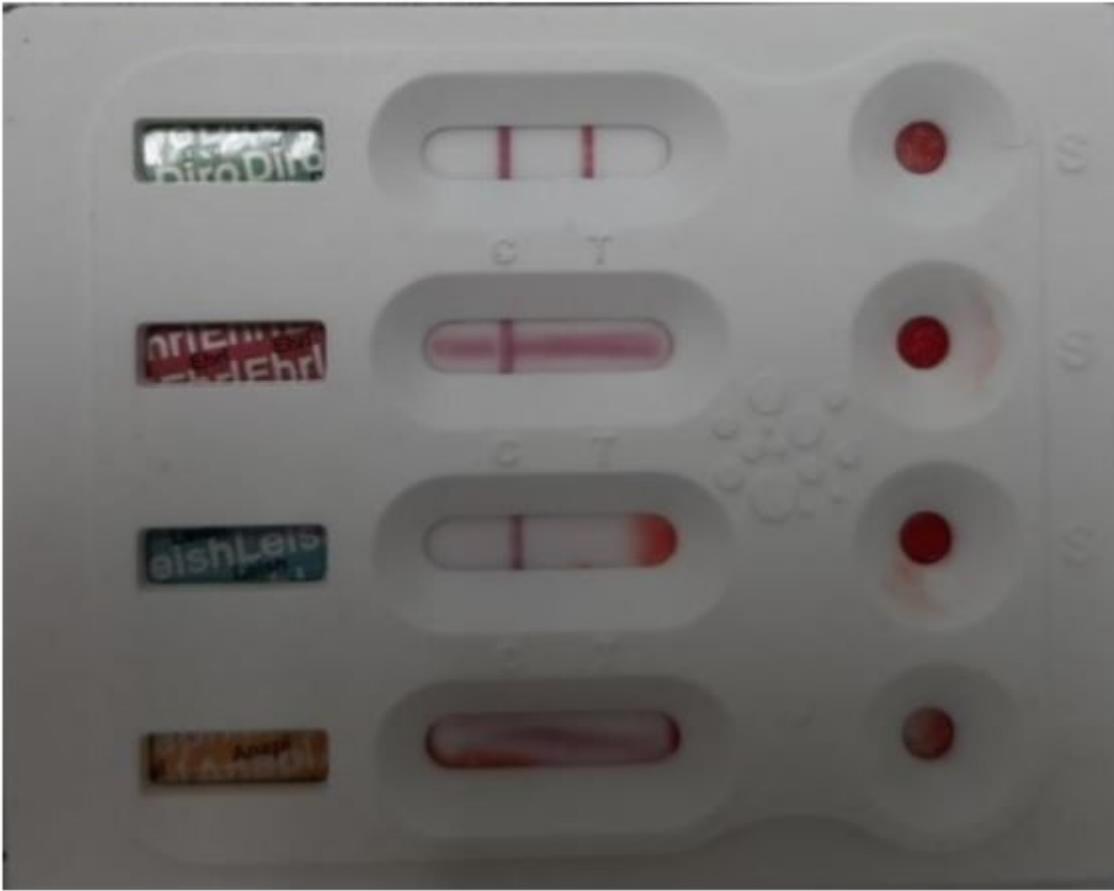


Figure 1

Uranotest Quattro® Diagnostic Kit from Urano Vet. Canine whole blood positive to *D. immitis* and from Boca Chica, Chiriquí, Panamá. Photo HVHP.

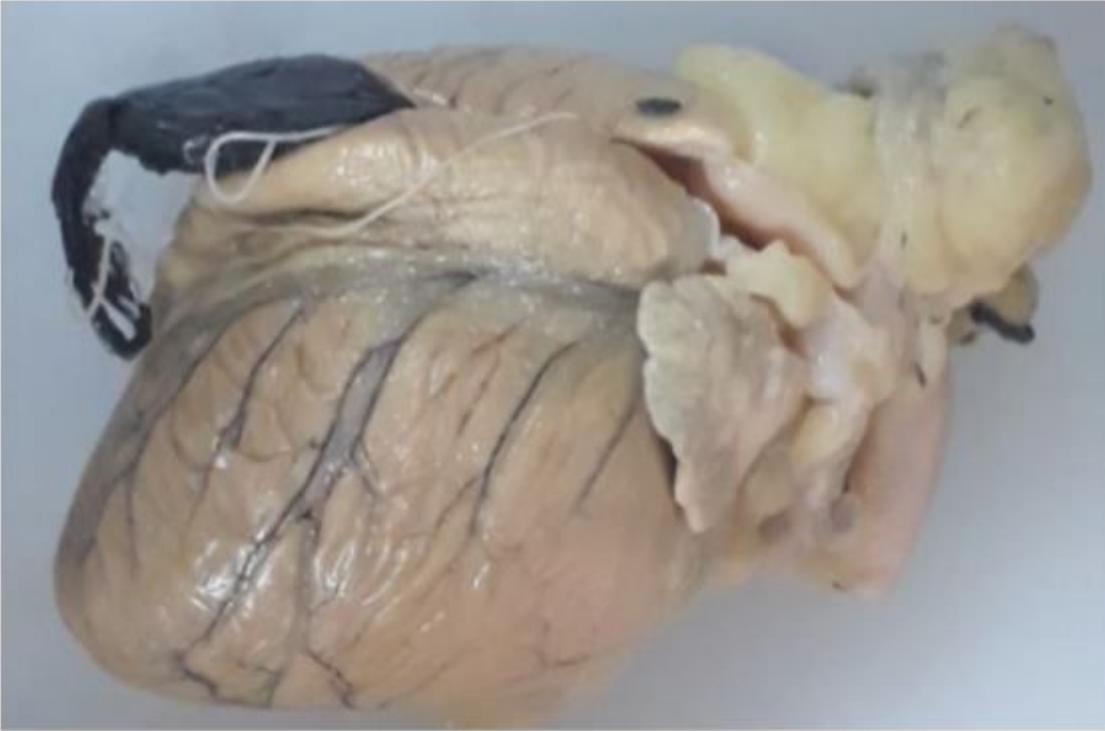


Figure 2

Canine heart, from Boca Chica, Chiriquí, Panama, whole preserved in formaldehyde with adults of *D. immitis* emerging together with the clot through the cut in the right ventricle. Photo MDofChiriqui.

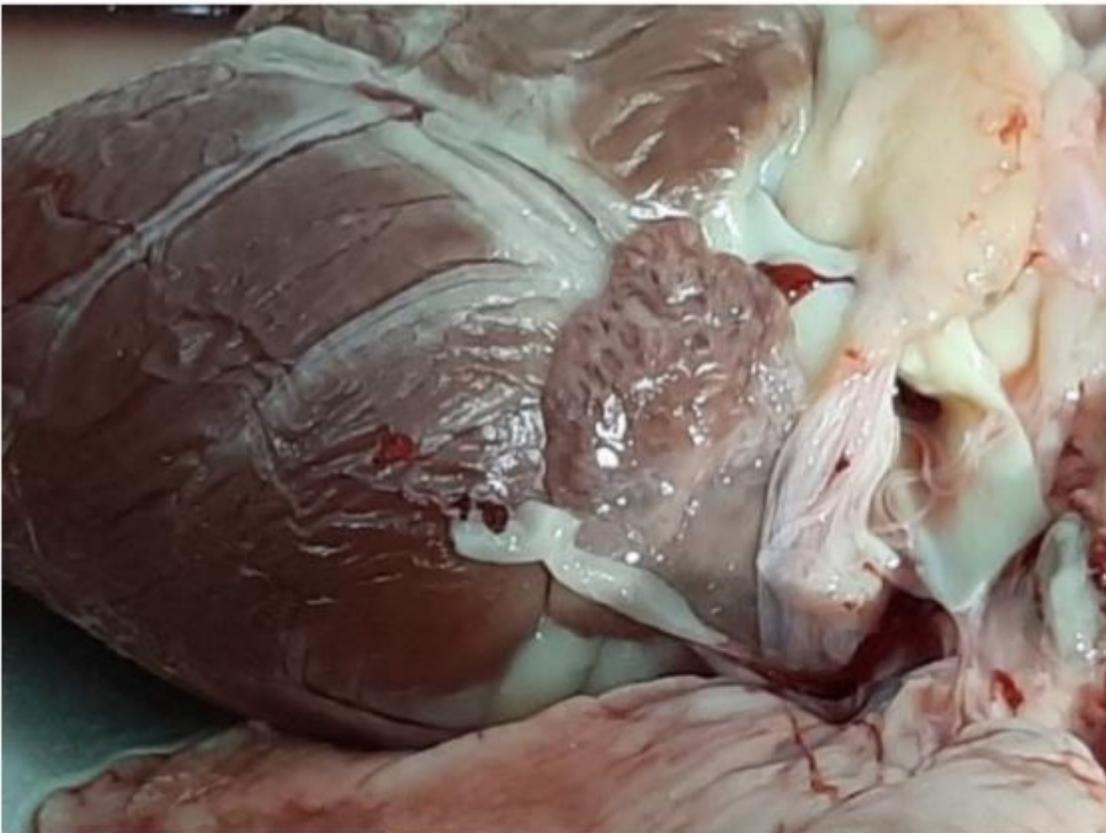


Figure 3

Adult *D. immitis* in the pulmonary artery lumen of a canine from Boca Chica, Chiriquí, Panama. Photo HVHP.

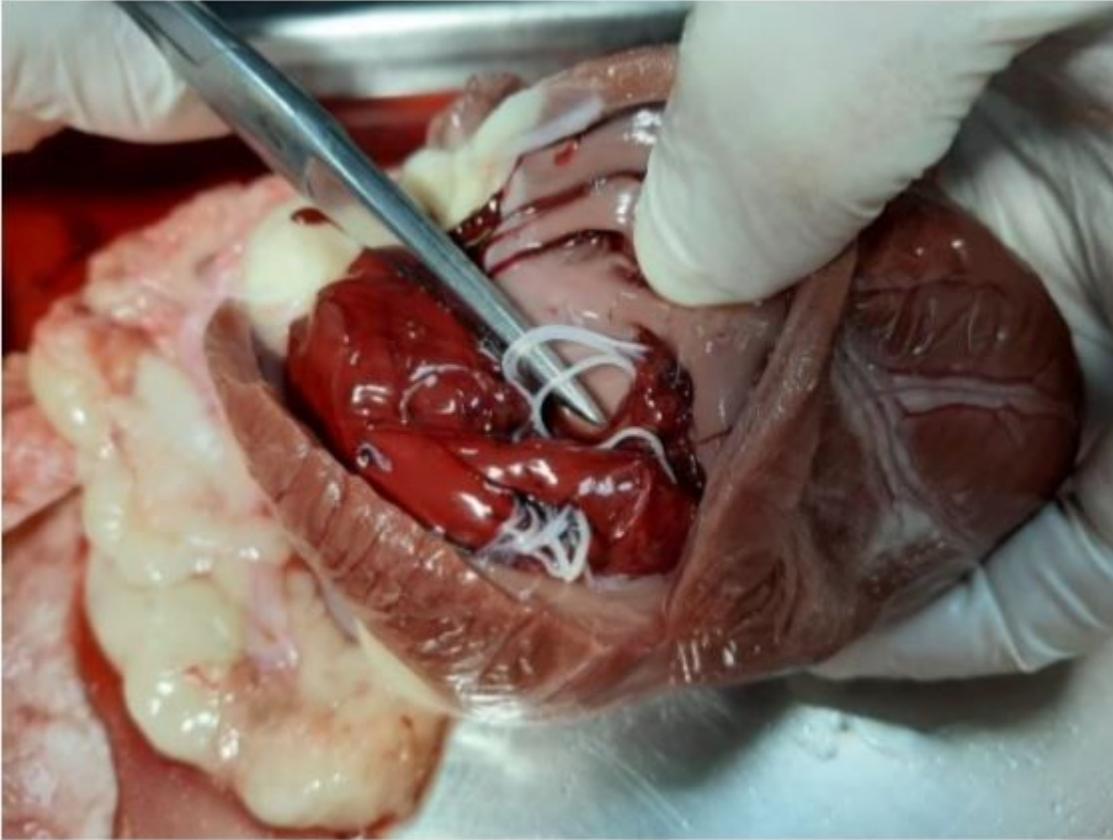


Figure 4

Adult *D. immitis* in the right ventricle of a canine from Boca Chica, Chiriquí, Panama. Photo HVHP.

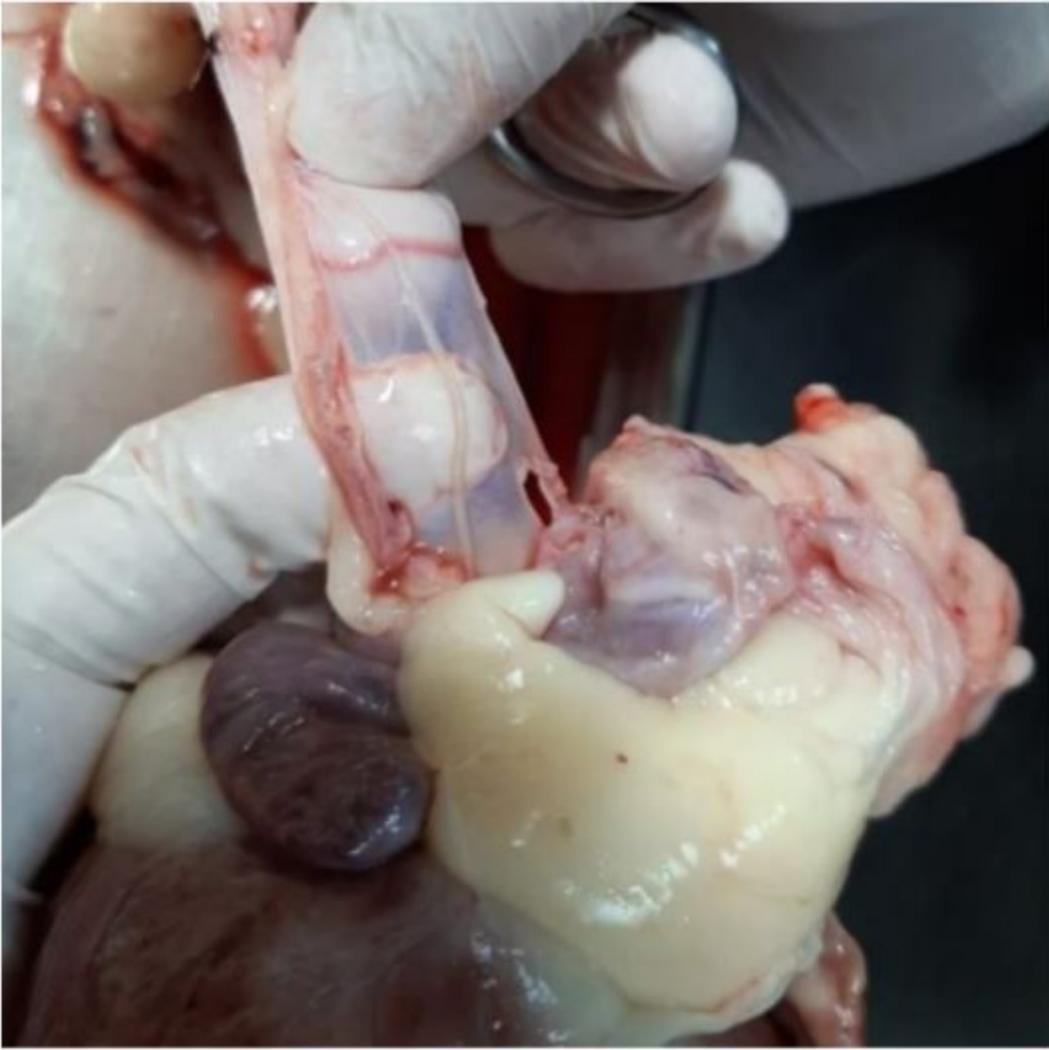


Figure 5

Adult *D. immitis* in the pericardium of a canine from Boca Chica, Chiriquí, Panama. Photo HVHP.

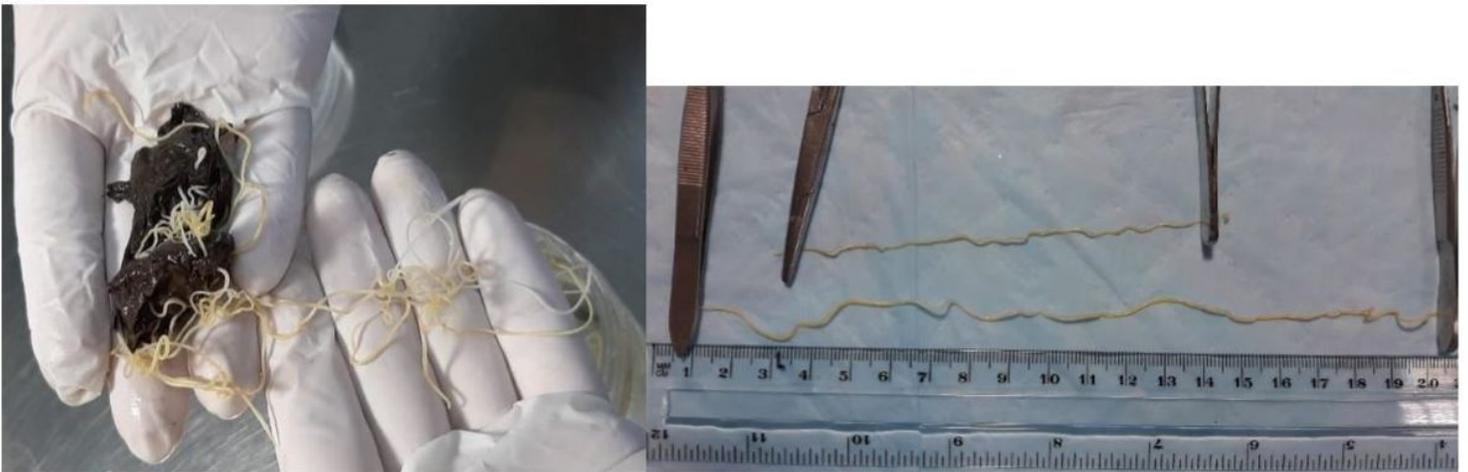


Figure 6

Adult *D. immitis* removed by necropsy from the right ventricle and atrium, pulmonary artery and pericardium of a canine from Boca Chica, Chiriquí, Panamá. Photo HVHP.

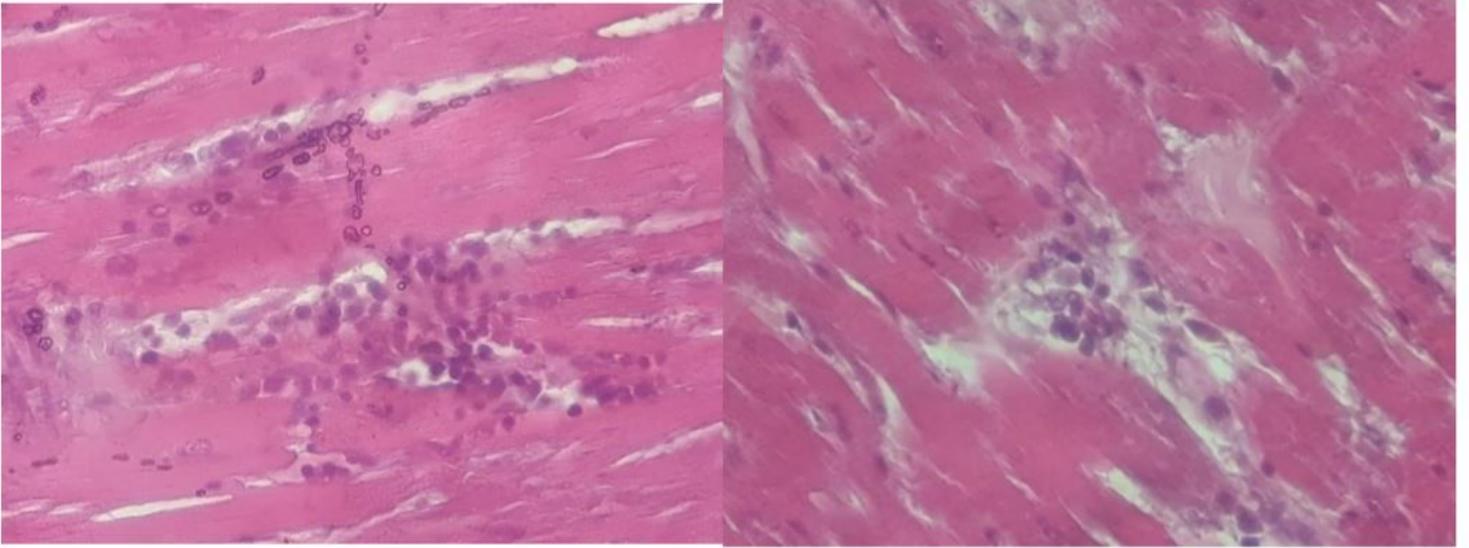


Figure 7

Inflammatory Infiltrate composed of lymphocytes and macrophages in the myocardium. Micrograph 200x, Hematoxylin-Eosin. Photo MDofChiriqui.

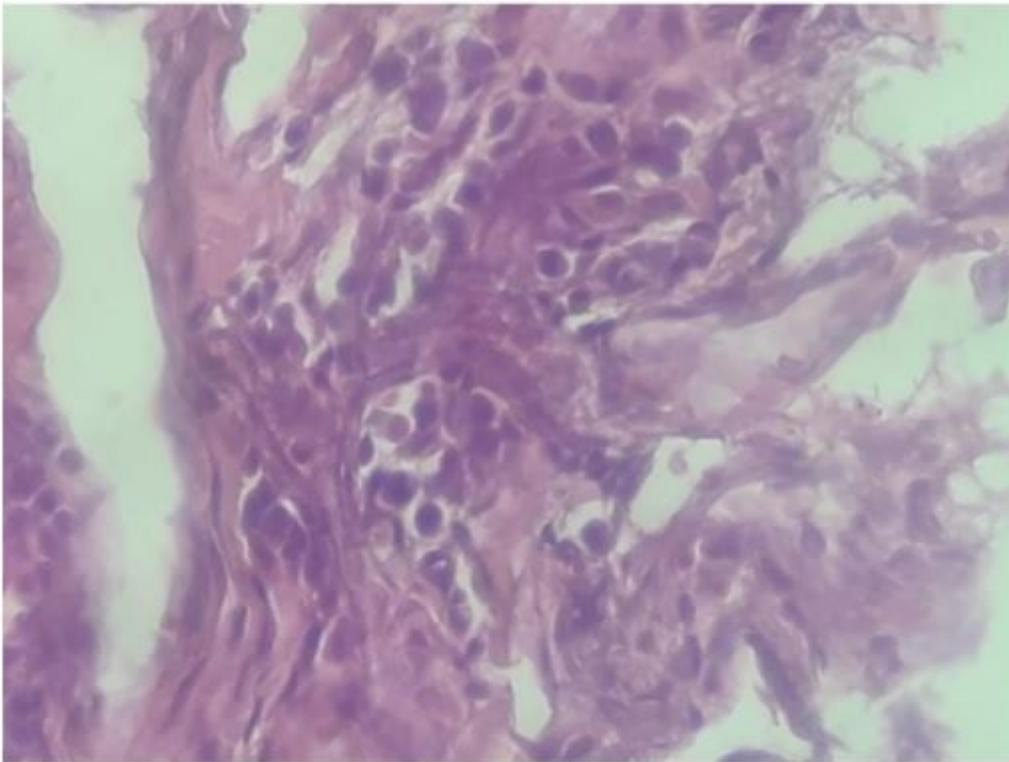


Figure 8

Monocyte and macrophage infiltrate in the portion of the pericardium where the nematode was found. Micrograph 200x, Hematoxylin-Eosin. Photo MDofChiriqui.

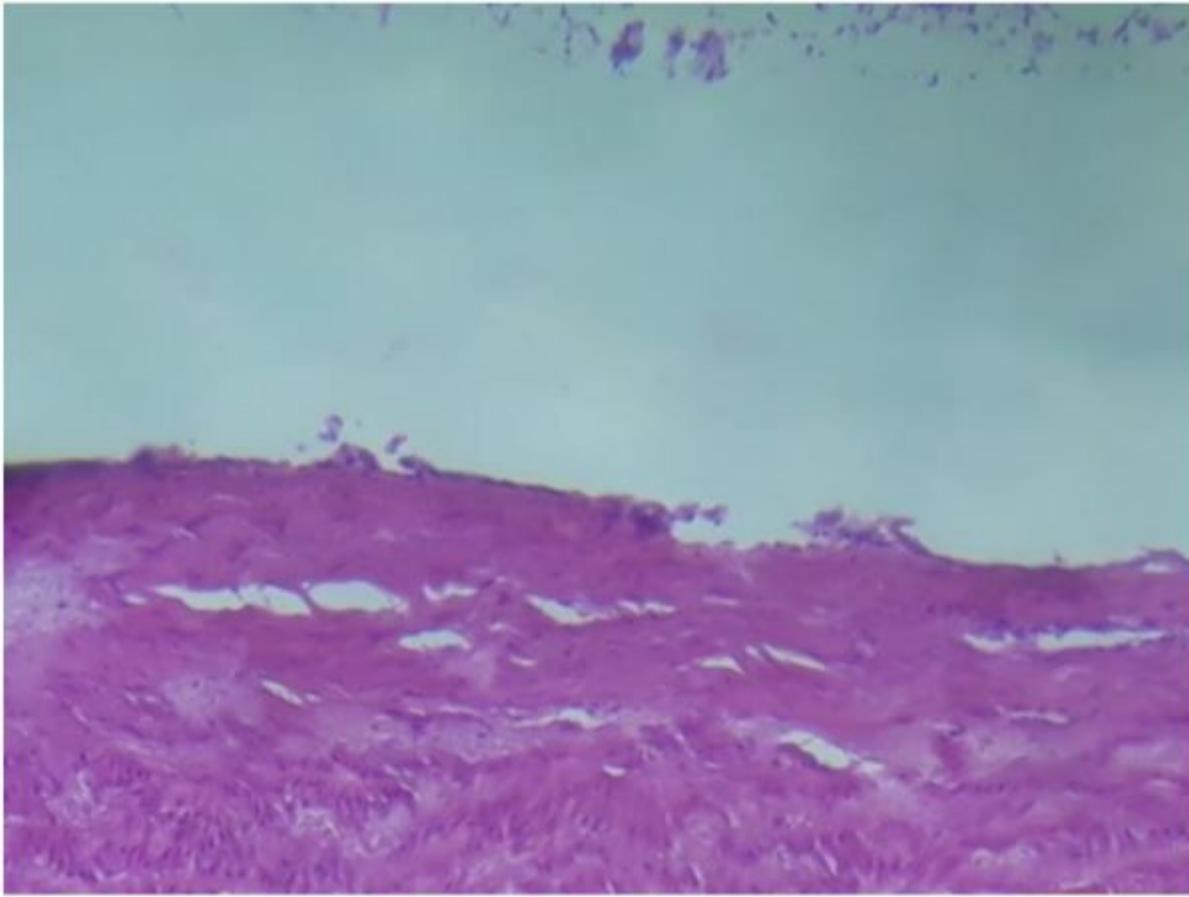


Figure 9

Histopathological section of the wall of the pulmonary artery with a normal appearance. Micrograph 200x, Hematoxylin-Eosin. Photo MDofChiriqui.

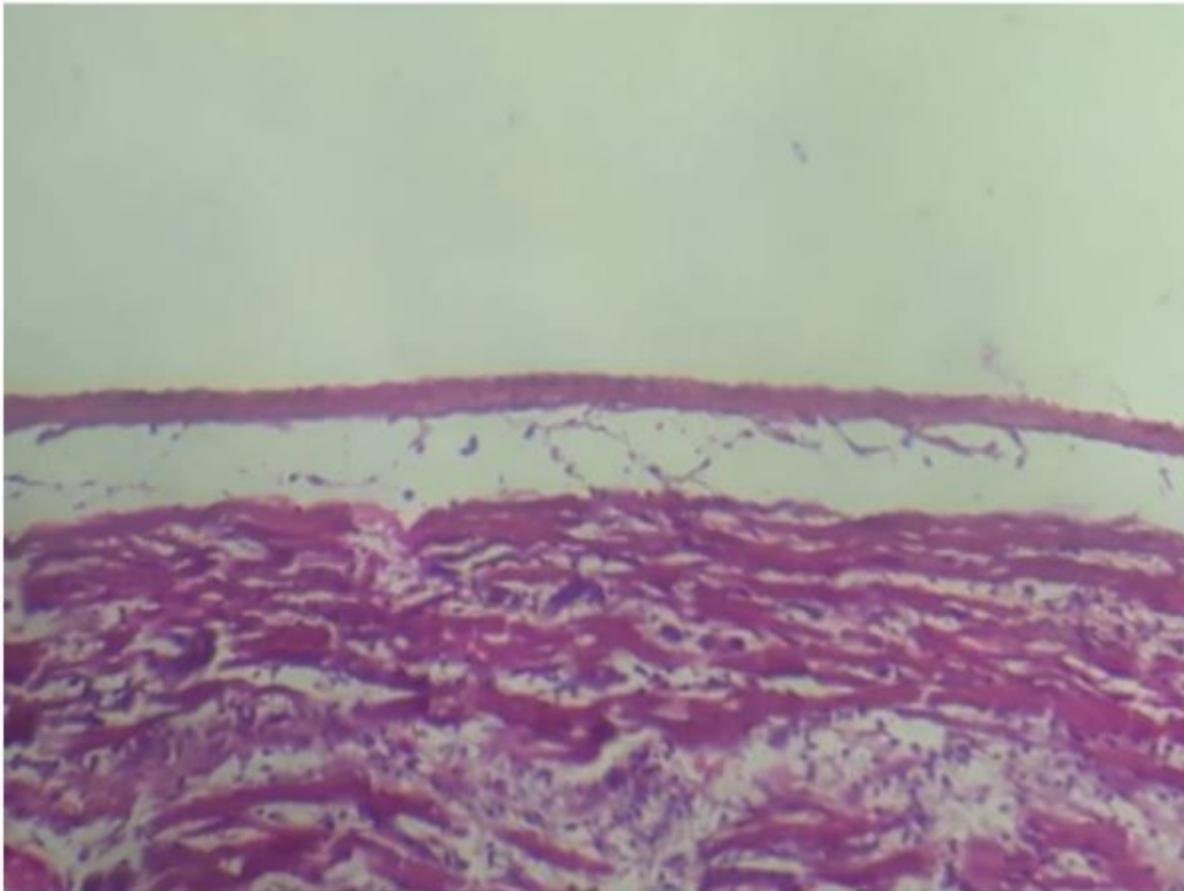


Figure 10

Histopathological section of the wall of the pulmonary vein with a normal appearance. Micrograph 200x, Hematoxylin-Eosin. Photo MDofChiriqui.

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