



LETTER TO THE EDITOR

Correspondence: “The One Health concept applied to dirofilariasis—a zoonotic disease”



To the Editor,

We have read with interest the paper by Silva et al.¹ “human pulmonary dirofilariasis: a pitfall in solitary pulmonary nodule”.

After careful analyses, we would like to comment on certain statements from the article.

In this paper authors report the case of a 38-year-old man who presented to the emergency department with face edema, eosinophilia (2000/uL) and a chest X-ray showing a small peripheral solitary lung nodule on the right lung. Post-operative histopathological diagnosis was consistent with a central zone of necrosis surrounded by granulomatous inflammation and a fibrous wall. Besides that, a filarial worm was found in the lumen of an artery within the area of necrosis containing remnants of *Dirofilaria immitis*.

The zoonotic implication of *Dirofilaria* spp. infections is important since shortly after the inoculation of stage 1 larvae (L1) by vector mosquitoes, there is the possibility of larval migration along human tissues.² This can provoke ocular, skin and pulmonary nodular lesions, which are frequently and erroneously diagnosed as pulmonary carcinomas.² Moreover, the diagnosis of malignant neoplasm requires invasive procedures before reaching the correct diagnosis.²

The paper by Silva et al.¹ caught our attention as, upon biopsy, the morphological identification of dirofilariasis parasites can be difficult to obtain, due to a loss of parasite integrity after tissue excision with consequent underdiagnosis, and a diagnosis based solely on the histological features only allows the determination of the genus *Dirofilaria*.³ In addition, there are confirmed *Dirofilaria* spp. circulating in Portugal, namely *Dirofilaria repens*,⁴ which has been reported to cause human pulmonary dirofilariasis with nodules that can be mistakenly diagnosed as malignant.⁵ Noteworthy, Ferrari et al.⁵ have reached definite diagnosis by

multiplex-PCR targeting mitochondrial cytochrome oxidase subunit I gene (mtDNA cox1).

Determining *Dirofilaria* spp. based solely on histological diagnosis is yet to be confirmed and, when the parasite's DNA extraction is possible, the methods of molecular diagnosis based on sequencing can play a fundamental role in the identification of the etiological agent involved.² Hence, we would like to highlight the diagnostic accuracy of PCR followed by dideoxy chain termination sequencing as a valuable and affordable method to confirm worm species.

Dirofilariasis/dirofilariosis is not difficult to treat when diagnosed with accuracy; however, it remains an underdiagnosed infection and disease because of the complexity in identifying the parasites involved. The use of molecular biology techniques to detect and identify them is likely to overcome the complexity associated to the diagnosis.³

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