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Medical Imagery

# Motile microfilaria captured by fluorescent microscopy and the unmasking of eosinophilia following treatment

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ABSTRACT

A 24-year-old patient from Cameroon presented to our hospital because of a foreign structure in her left eye. To our knowledge, for the first time, fluorescent microscopy revealed motile microfilariae, and the diagnosis of loiasis was established. Despite substantial microfilaremia, eosinophilia only unmasked after the initiation of antiparasitic therapy.



## Explanatory text

A 24-year-old female Cameroonian patient presented to our Infectious Disease Center because of a foreign structure in her left eye (Figure S1). A slightly elevated eosinophil count (0.59/nl) was observed at admission. To rule out parasitic bloodstream infection, fluorescent microscopy was performed and revealed motile structures, identified as live microfilariae (Video 1). This was confirmed in the wet mount microscopy and subsequent examinations of blood smears stained with Giemsa. Diagnosis of microfilaremia loiasis with an initial microfilarial density of 1200/ml was established. After 2 weeks of therapy with albendazole 400 mg qd, an increase in the eosinophil count (Figure S2) was observed [1]. The regimen was changed to diethylcarbamazine on day 32 and continued for another 3 weeks leading to the complete resolution of symptoms and the successive normalization of blood smears. Loiasis is a neglected filarial disease caused by *Loa loa* (the African eyeworm) mainly occurring in Central and Western Africa [2]. In the past, albendazole therapy has been linked to inflammation-mediated pathologies [3]. Interestingly, even in patients with substantial microfilarial counts—especially those from endemic countries—immune reaction in the form of eosinophilia can be unremarkable and may only be unmasked after the initiation of antiparasitic therapy [4,5].

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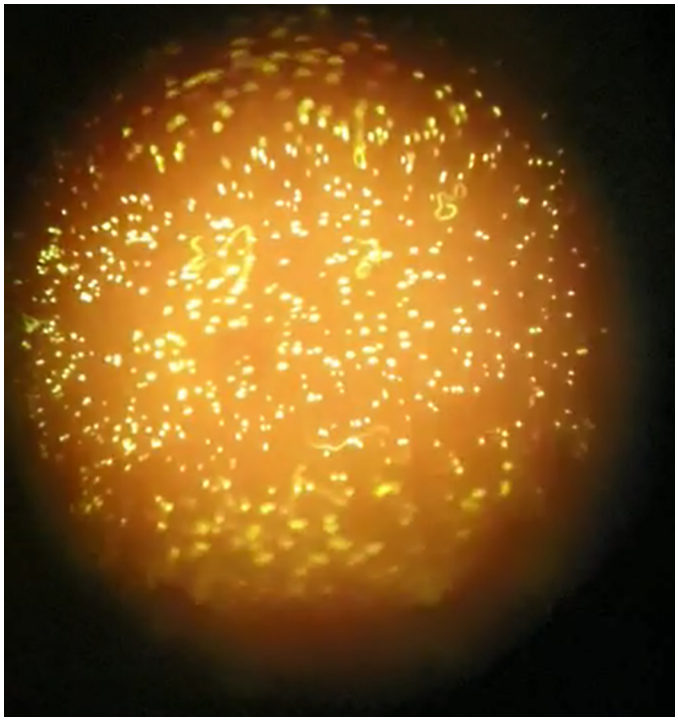

**Video 1.** Fluorescent microscopy (quantitative buffy coat [QBC]; malaria tubes, QBC Diagnostics, Philipsburg, USA) and wet mount microscopy of blood smears showing motile microfilariae.

## Declarations of Competing Interest

Gerrit Kann, Hermann Juling, Valentina Ilievski, Gerrit Burger, Stephan Göttig, and Nils Wetzstein have nothing to disclose. Christoph Stephan has received fees for lectures and/or advisory board services from Gilead Sciences, Janssen-Cilag, MSD & ViiV Healthcare, and travel grants for scientific conference attendance from Gilead, Janssen, and AbbVie.

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## Author contributions

GK, HJ, VI, and SG performed microbiological diagnostics and filmed the presented videos. NW treated the patient. GK and NW wrote the initial draft of the manuscript. GK, HJ, VI, GB, SG, CS, and NW critically revised the manuscript.

## Supplementary materials

Supplementary material associated with this article can be found, in the online version, at doi:10.1016/j.ijid.2023.07.006.

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