https://doi.org/10.18502/jad.v19i2.20197

Letter to the Editor

Microfilaria: A Silent Accomplice in a Patient of Dengue Fever

Mani Bhushan Kumar[1], *Nidhi Singla[2], Manharpreet Kaur[1], Sarabmeet Singh Lehl[3], Jagdish Chander[2]

[1]Department of Medical Microbiology, Postgraduate Institute of Medical Education and Research, Chandigarh, India
[2]Department of Microbiology, Government Medical College and Hospital, Chandigarh, India
[3]Department of Medicine, Government Medical College and Hospital, Chandigarh, India

***Corresponding author:** Dr Nidhi Singla, E-mail: nidhisingla76@gmail.com

(Received 03 Dec 2024; accepted 12 Apr 2025)

Dear Editor

A 35-year-old male, driver by occupation, from Haryana (India), presented in 2018 with chief complaints of high-grade fever, chills and rigors, headache, body ache and vomiting for five days and sputum mixed with blood for one day. There was no history of swelling over the scrotum, legs, groin and hands. All routine tests were found to be within normal limits, but his eosinophil count was 9% (absolute eosinophil count: 612/µL) and his platelet count was decreased to 4000/µL. Based on symptoms, the patient was suspected of having a case of dengue virus infection. A blood sample for non-structural protein 1 (NS1) antigen enzyme-linked immunosorbent assay for dengue virus infection was sent, which came out to be positive, confirming the diagnosis. The next day, a microfilaria was detected while examining the peripheral blood film (PBF) from the same patient. So, a fresh sample was collected at midnight and the peripheral blood film was examined. To the surprise, many live motile microfilariae (>10/wet mount) were seen, which were diagnosed to be of *Wuchereria bancrofti* based on typical morphology (Fig. 1).

The patient was managed symptomatically with a platelet transfusion for dengue and later discharged with advice to take diethylcarbamazine 100 mg thrice a day for 14 days. The patient completed the treatment, and on follow-up, midnight PBF came out to be negative for microfilariae.

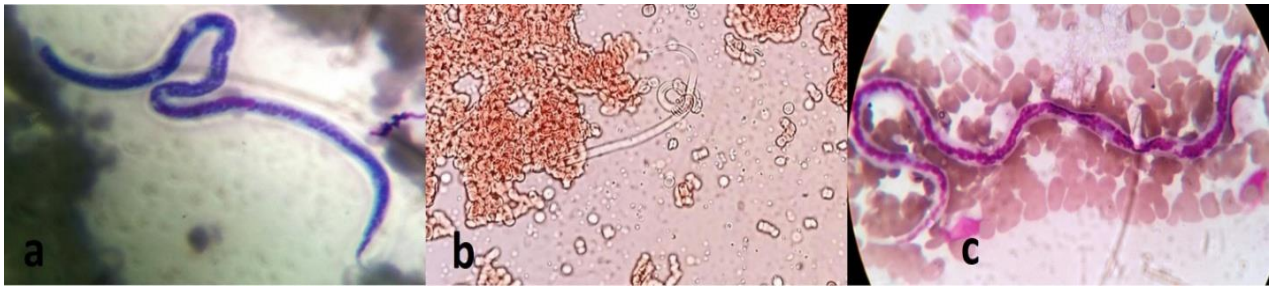

Fig. 1. Giemsa stain (a, c) shows a sheathed microfilaria with a cephalic space (length and breadth of equal size) and a pointed tail end devoid of nuclei. Wet mount (b) shows a sheathed microfilaria, overall suggestive of *Wuchereria bancrofti*, India, 2018

http://jad.tums.ac.ir
Published Online: June 30, 2025

Discussion

In tropical regions, co-infections are common, warranting strong clinical suspicion. Filariasis and arboviral infections share arthropod vectors, enabling co-infection of the vector. Concurrent infections can enhance viral transmission, a phenomenon known as 'microfilarial enhancement of arboviral transmission' (1). For viral development, the virus must cross the vector's midgut barrier. Microfilariae help breach this barrier, allowing viral entry into the hemocoel, accelerating replication and transmission. Viruses may also attach to microfilaria, which act as physical carriers across the midgut (2). Co-infection with dengue and filariasis creates a complex clinical challenge requiring careful management. Filariasis, a neglected tropical disease affecting over 120 million people globally, often remains asymptomatic despite residing in and damaging the lymphatic system (3). India carries about 40% of the global lymphatic filariasis burden (2). In our case, microfilaria was incidentally detected on a peripheral smear. The patient likely had chronic filariasis and acquired a superimposed dengue infection during the mosquito breeding season. The WHO's Global Program to Eliminate Lymphatic Filariasis focuses on two main strategies: mass drug administration (MDA) and morbidity management and disability prevention (4). India aims to eliminate filariasis by 2027, ahead of the global target. Asymptomatic individuals serve as silent reservoirs, risking ongoing transmission and threatening elimination efforts. To counter this, India has adopted a multi-sectoral strategy, including biannual MDA in high-endemic areas to reduce prevalence and transmission (5).

Conclusion

In areas with acute febrile illnesses, accurate diagnosis is vital. Dengue and filariasis are major health concerns and co-infection can worsen outcomes. Asymptomatic filariasis cases can sustain transmission. Early detection is key to prevention and elimination efforts.

Conflict of interest statement

The authors declare that there are no conflicts of interest.

References

1. Sarika K, Anbukkarasi K, Sai Sudha M, Lilly M (2022) A case of dengue co-infection with microfilaria. J Clin Diagn Res. 16: 4–5.
2. Carpenter A, Clem RJ (2023) Factors affecting arbovirus midgut escape in mosquitoes. Pathogens. 12: 220–233.
3. Centers for Disease Control and Prevention (2023) Lymphatic filariasis. Centers for Disease Control and Prevention, Atlanta, Georgia. Available at: https://archive.cdc.gov/www_cdc_gov/globalhealth/stories/lymphatic_filariasis.html
4. Pati S (2023) Eliminating lymphatic filariasis: India's bold plan to finish 3 years ahead of global schedule. Indian J Public Health. 67: 345–346.
5. World Health Organization (2020) Control of Neglected Tropical Diseases. World Health Organization, Geneva. Available at: https://www.who.int/teams/control-of-neglected-tropical-diseases/lymphatic-filariasis/global-programme-to-eliminate-lymphatic-filariasis