

CASE REPORT

Brugia malayi in Cervical Lymph Node Aspirate: A Rare Case Report

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ABSTRACT

Filariasis is endemic worldwide with the main focus in the tropical areas. Reported cases of filarial lymphadenopathy are caused by *Wuchereria bancrofti*, which is limited to the groin, the femoral triangle, and axilla, causing lymphedema of lower and upper limbs, and is usually diagnosed clinically and by the presence of microfilaria in peripheral blood smear. We are reporting an unusual case of cervical lymphadenitis, which on fine needle aspiration cytology (FNAC) showed microfilaria of a rare species, *Brugia malayi*. The purpose of this article is to make clinicians aware of this rare disease as one of the differential diagnoses of cervical lymphadenopathy in an endemic country like India.

Keywords: *Brugia malayi*, Cervical lymphadenopathy, Fine needle aspiration cytology, Microfilaria.

How to cite this article: Srivastava A, Mohan C, Kumar S, Agarwal R. *Brugia malayi* in Cervical Lymph Node Aspirate: A Rare Case Report. Int J Adv Integ Med Sci 2016;1(2):79-80.

Source of support: Nil

Conflict of interest: None

INTRODUCTION

Filariasis is a parasitic disease that is most commonly caused by *Wuchereria bancrofti*. It is a major public health problem in tropical countries, such as Southwest India, China, Indonesia, Malaysia, Korea, Philippines, and Vietnam.¹ In India, it is caused by two closely related nematodes – *Wuchereria bancrofti* and *Brugia malayi*. In India, Asian countries, and China, they show nocturnal periodicity due to night biting habits of the vector, *Culex fatigans* mosquito, and sleeping habits of the host.² Man is the definitive host; animal or reservoir host is not known. Female mosquito is the intermediate host.

The disease mainly involves the lymphatic system of the human body. In human beings, it causes recurrent lymphangitis, which causes obliteration of lymph vessels.

The clinical presentation in the early stage of the disease is acute adenolymphangitis accompanied by fever, headache, myalgia, and pain in arms and legs. These symptoms can be because of an allergic reaction to the microfilariae. During the chronic phase of the disease, there is an obstruction of the lymphatic system, leading to elephantiasis. In this stage, there is tissue reaction due to dead or dying adult worms.¹

The most frequently involved lymphatics are those of the lower limbs, retroperitoneal tissues, spermatic cord, epididymis, and mammary glands.^{2,3}

We are presenting an unusual case of cervical lymphadenitis, which on fine needle aspiration cytology (FNAC) showed the presence of microfilaria of *B. malayi*.

CASE REPORT

A 26-year-old female, a resident of Bareilly with no history of travel outside Bareilly in the last 2 years, came to the ear, nose, and throat outpatient department with a complaint of fever during nights for the last 2 months and a swelling in the neck since the last 10 days. On examination, the patient was found to have bilateral upper cervical lymphadenopathy. She had taken antibiotics from some local doctor elsewhere but did not get relief. Fine needle aspiration cytology was advised, which showed microfilaria with a nucleus at the tail end, and it did not have a smooth curve, which was suggestive of *B. malayi* (Fig. 1). Night time blood sample was taken, and

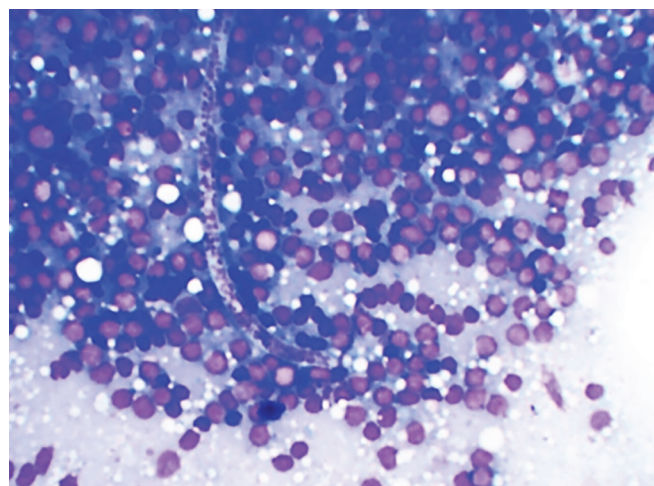


Fig. 1: Fine needle aspiration cytology of cervical lymph node stained with May–Grunwald–Giemsa (MGG) stain showing microfilaria of *B. malayi* with a nucleus at the tail end

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it confirmed the presence of microfilaria in the peripheral blood smear. Differential leukocyte counts showed eosinophilia, supporting the diagnosis. Patient was given diethylcarbamazine (DEC) for 21 days and follow-up was done. Patient's fever subsided initially in 3 to 4 days, followed by improvement in cervical lymphadenopathy.

DISCUSSION

According to Schmidh and Roberts in 2000,⁴ there are 119 million cases of lymphatic filariasis globally, of which *B. malayi* is accountable for 10% of cases. Out of the eight identified species, three are known to cause lymphatic filariasis. These are *W. bancrofti*, *B. malayi*, and *Brugia timori*.⁵ The microfilariae find their way into the lymphatic system by penetrating the skin following a mosquito bite. The bancroftian and Brugian microfilaria show a nocturnal periodicity as a part of the biological adaptation, correlating with the nocturnal habits of the *Culex* mosquito. The infected larvae develop into adult male and female worms, which are found in the lymphatic system of humans. The male worm measures 40 mm while the female measures 50 to 100 mm in length. The female worm is viviparous, giving birth to as many as 50,000 microfilariae per day.⁵

Filariasis is an important cause of disability, because of both its social stigma and psychosocial damage and economic losses. The disease is ranked by the World Health Organization as the second leading cause of permanent and long-term disability and has been targeted for elimination by 2020.⁶

Lesion usually occurs due to permanent damage to the lymph vessels. It can cause lymphadenopathy of groin or femoral or generalized lymphadenitis, and the literature shows the detection of microfilariae cytologically from thyroid, soft tissue, bone marrow, epididymis, lung, bronchoalveolar fluid, breast, gastric brushing, cervicovaginal smears, and hydrocele fluid.⁷

Three rare features that were noted in our case were that, one, in terms of species, it is rare to find *B. malayi*, which accounts for 10% of lymphatic filariasis, two, the involvement of cervical lymph nodes, an unusual site, and lastly, the non-routine method of diagnosis, which was FNAC.

The nematodes have also been reported in association with various benign and malignant tumors.⁸

On clinical presentation of the case, diagnosis can be made of filariasis, but final definitive diagnosis can be

made only by demonstration of microfilariae in circulating blood or in any body aspirate as in the case discussed above. As far as treatment is concerned, DEC is the drug of choice, which is effective against both adult worm and microfilaria and is given for a total of 21 days. The other drug used is ivermectin, given in a single dose of 200 to 400 µg per kg body weight.

The other laboratory tests used to diagnose are as follows:⁹

- Demonstration of microfilariae in the peripheral blood
- Immunochromatographic test
- Quantitative blood count
- Ultrasonography
- Lymphoscintigraphy.

CONCLUSION

Filariasis is a disease of local lymphadenopathy, but it can have presentation at an unusual site by an unusual species in a non-endemic area, like in our case. Hence, this finding should be kept in mind as a clinician while treating a case of cervical lymphadenopathy in an endemic area of filariasis.

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