Atypical Presentation of Cervical Lymphadenopathy in a Case of Lymphatic Filariasis

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Abstract- Lymphatic filariasis, caused by Wuchereria bancrofti is an important parasitic disease included in the National vector-borne disease control programme in India to bring down the microfilariae carriage rate and disease prevalence in endemic zones in the country. Unplanned urbanization and frequent travel of people from non-endemic areas to endemic areas has increased the threat of this infection, even in non-endemic zones. We report a case of a 19 year old girl from Rajasthan (non-endemic state) who came with the complaint of cervical lymphadenopathy. Extensive follow-up of patient with various investigations such as CBC, urine complete, X-ray, CECT neck, Giemsa staining of PBF, FNAC of lymph node and AFB staining of sputum were carried out when a final diagnosis of lymphatic filariasis could be established by demonstrating live, motile microfilariae in EDTA blood sample collected in night hours. Also, Giemsa-stained PBF revealed sheathed microfilariae with cephalic space: breadth ratio of 1:1, regularly placed purple-coloured nuclei over the entire length and tail-tip free of nuclei.

Index Terms- eosinophilia, lymphatic filariasis, microfilariae, Wuchereria bancrofti.

I. INTRODUCTION

Lymphatic filariasis (LF) is frequently encountered in the Asian, African and some of the South American countries [1] that is in the tropics and sub-tropics affecting over 73 countries [2]. WHO has given a worldwide distribution and status of preventive chemotherapy for lymphatic filariasis as shown in Figure 1 [3].

It is an important public health problem in India where about a third of the global population accounting to 300 million people live at risk of this disease [4].

The disease was recorded in India as early as in the 6th century B.C. by the famous Indian physician Susruta in his book 'Susruta Samhita'.The disease is caused by three species of nematode thread-like worms – Wuchereria bancrofti, Brugia malayi and Brugia timori, known as filariae. Male worms measure about 3-4cm in length and female worms between 8-10cm [5].

Nocturnally periodic W. bancrofti (microfilariae appear in peripheral blood circulation only during night): The most widespread form transmitted by *Culex quinquefasciatus,* a ubiquitous mosquito, breeds in almost all organically polluted water bodies [6].

Several cases of lymphatic filariasis (LF) have been reported in non-endemic countries due to migration of people from endemic to non-endemic zones and international travel which facilitate the spread of this parasitic disease across non-endemic zones [7].

II. CASE REPORT

We report a case of a 19-year old girl residing in Basni locality of Jodhpur, Rajasthan. She presented in surgical OPD of Mathuradas Mathur Hospital associated with Dr S.N.Medical College, Jodhpur with the chief complaint of swollen lymph nodes in right neck region for duration of 1 year which had started developing mild pain from last 10 days. The patient also complained of headache and cold from last 3 days.A history of stay of past 3 years duration in a local district in Uttar Pradesh was also given by her.She did not have any history of breathlessness, sore throat, malaise, lethargy, vomiting or weight loss. Also, she did not suffer from any chronic illnesses like diabetes, asthma or hypertension. No other family member suggest such type of history.

On examination, she was afebrile. The right cervical lymph nodes were palpable, 4 in number, varying in size from pinhead to pea-size; discrete, tender and non-matted (Figure 2). Enlargement in any other lymph node was not seen.

The patient was evaluated with various investigations to establish a diagnosis. Complete blood count (CBC) revealed eosinophilia with eosinophil count ranging upto 1500/cu.mm. of blood. Peripheral blood film (PBF) made from blood collected in EDTA vial did not show any parasite. Fine needle aspiration cytology (FNAC) of lymph node was unyielding. A chest X-ray was unremarkable. Urine complete was done to rule out proteinuria or haematuria due to renal involvement. Sputum for acid fast bacilli with 2 samples (on spot and early morning) was carried out to rule out the possibility of tuberculosis. A contrast-enhanced computerized tomography scan (CECT) was carried out to identify the nature and characteristics of enlarged lymph nodes. CECT showed multiple enlarged homogenously enhancing, oval-shaped cervical lymph nodes in right neck region. A small, non-enhancing, hypodense lesion with peripheral thick enhancing rim was noted in retropharyngeal space adjacent to adenoid (6x6 mm).

Owing to eosinophilia, negative PBF findings, travel history to endemic belts of Uttar Pradesh and nocturnal periodicity of Wuchereria bancrofti, a night blood sample was collected again in EDTA vial at 01 a.m. Then, a wet mount was prepared from it.

Live, motile microfilariae lashing the red blood cells were observed [8].

For stained preparations, thick blood smears were first dehaemoglobinised with distilled water, fixed with methanol and finally Giemsa staining was carried out to demonstrate microfilariae; the morphology of which was confirmed as Wuchereria bancrofti in thin blood smears due to presence of hyaline sheath, cephalic space: breadth ratio of 1:1, regularly placed purple-coloured nuclei over the entire length with tail-tip free of nuclei (FIGURE 3) [9].

On confirmation of filarial infection, the treatment was instituted with 100 mg diethylcarbamazine,thrice a day for 21 days [10].On a repeat CBC after 21 days,eosinophilia reached upto 2500/cu.mm. of blood and there was initial flaring of lymph node lesions at 10^{th} day which gradually subsided in a month's time. This can be explained by the fact that alive and mobile adult worms and microfilariae do not excite any tissue reaction but dead and fixed adults and microfilariae excite severe reaction, which may include eosinophilia, eosinophilic abscess, neutrophilic abscess, necrosis and epithelioid cell granuloma [11].

There remains a possibility of low rates of infection being reported in non-endemic areas.as the development of elephantiasis or lymphoedema takes 10 years to develop after infection,Therefore,it is very necessary for the physicians to be aware of the signs and symptoms of lymphatic filariasis, and infection should be considered in the differential diagnosis of people with a relevant travel history [12].

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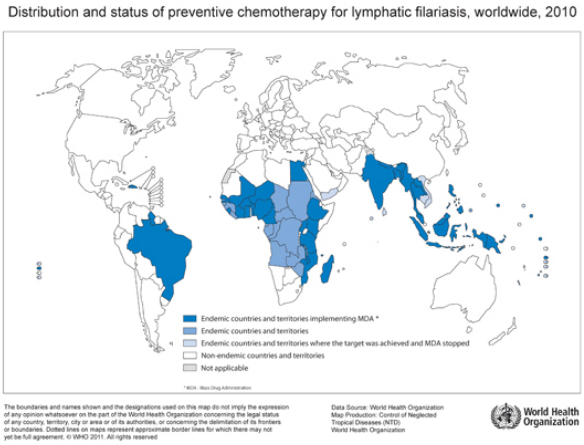

Figure 1:Distribution and status of preventive chemotherapy for lymphatic filariasis worldwide

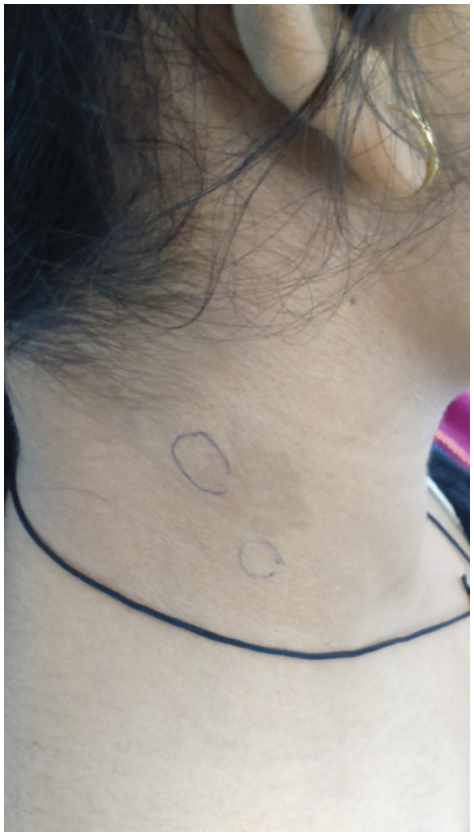

Figure 2:Enlarged cervical lymph nodes in 19-year old girl

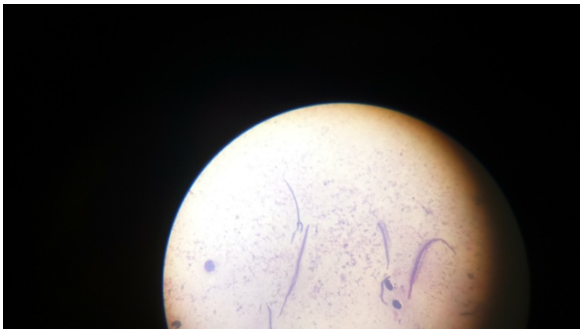

Figure 3:Giemsa-stained peripheral blood smear from night blood sample demonstrating microfilariae of Wuchereria bancrofti (10X)