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Case Report

Lymph Node Enlargement in Neck Filariasis as a Rare Cause: A Case Report

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Abstract

Lymphatic filariasis is endemic to tropical countries and is the most common cause of acquired lymphedema in the world. *Wuchereria bancrofti* is the main etiological agent responsible. While the presentation of filariasis in limbs is common, isolated presentation as a single enlarged lymph node in the neck is very rare. We describe a 48-year-old Indian woman, who presented with a hard lymph node in the neck. There was no other significant lymph node enlargement. The overlying skin was erythematous, and no other findings were present on examination. Ultrasonography of the neck revealed a single enlarged lymph node in the left level 2 region, and fine-needle aspiration cytology showed microfilariae with surrounding inflammatory infiltrate. The patient was started on oral diethylcarbamazine and after 2 weeks of therapy, the lymph node enlargement in the neck subsided and the erythema was relieved.

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Keywords ● Lymphadenopathy ● Lymph node enlargement ● Filariasis ● Neck

Introduction

Filariasis is a disease group affecting humans and animals, caused by filariae; like parasitic worms. Of the various described filarial parasites, only a few cause infection in humans. The disease process usually manifests by the disfigurement and incapacitation of the extremities, genitals, and breasts. The parasitic worms live within the lymphatic system and cause severe inflammation and damage to the lymphatic system. Lymphatic filariasis is only secondary to leprosy as a major cause of permanent and long-term disability worldwide.

Case Presentation

We describe a 48-year-old woman, who presented to the outpatient wing of the ENT Department of Kannur Medical College, Anjarakandy, Kerala. She presented with a tumoral mass in the left side of the neck of 1 month's duration. There were no other presenting complaints. The swelling was reported to be slowly increasing in size. Clinical evaluation of the tumor revealed an enlarged lymph node in the left level 2 region of the neck about 5×4 cm in dimension, and the overlying skin showed mild erythema (figure 1). There was no tenderness on examination or no history of pain or fever. There were no associated pharyngeal or laryngeal symptoms and no history of any nasal complaints. Subsequent nasal and laryngeal endoscopic examinations were within normal limits. Systemic

What's Known

- Filariasis as a rare cause of isolated lymph node enlargement has been described. Diagnosis was established by excision biopsy following imaging studies.

What's New

- Filariasis presenting as isolated lymph node enlargement in the neck is rare. Diagnosis via FNAC and subsequent treatment with diethylcarbamazine resulting in full resolution has not been reported before.

examination revealed no major anomalies and was found to be within normal limits.

Written consent was obtained from the patient to report the case and relevant photographs.

A complete hemogram evaluation showed normal blood counts, and peripheral smear revealed no abnormal cells. Ultrasonography of the neck showed a single enlarged lymph node in the level 2 region with no other significant anomalies. Fine-needle aspiration cytology of the swelling was ordered, and it showed microfilariae (figure 2). Subsequent treatment with diethylcarbamazine (DEC) was administered, and the patient reported complete resolution of her symptoms.

Discussion

Filariasis is a major health issue in tropical and subtropical countries. Over 1 billion people are at risk, with more than 1 million people being already infected.[1] Chronic infection causes elephantiasis, a disfiguring disease. The global burden of filariasis is on the rise, and the disease is especially prevalent in the tropics.[2]

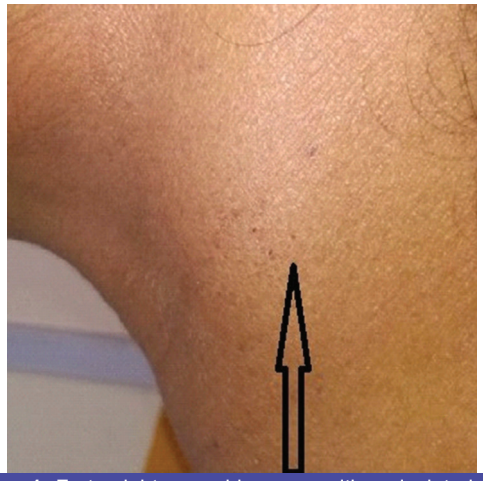

Figure 1: Forty-eight-year-old woman with an isolated neck swelling in the left level 2 region.

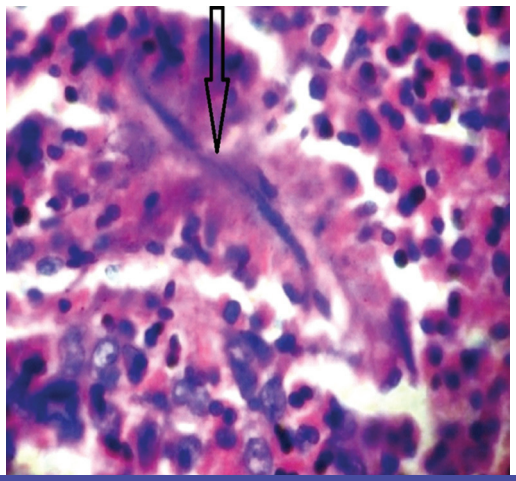

Figure 2: Microfilariae are seen surrounded by inflammatory infiltrate.

The major offending organisms in lymphatic filariasis are *Wuchereria bancrofti* and *Brugia malayi* or *Brugia timori*. Of these, *Wuchereria bancrofti* is the most prevalent species. Mosquitos (*Anopheles*) serve as the vector for the disease.[3]

Wuchereria bancrofti completes its life cycle in 2 hosts. The definitive host or the primary host is man and the secondary host is several species of mosquitos (figure 3). The worms exhibit sexual dimorphism, with the female worms being longer than the males. After mating, thousands of microfilariae are released in to the bloodstream. When the mosquito sucks blood, the microfilariae enter the stomach of the vector, where they undergo a series of changes to form 3rd stage larvae, which are the infective form. They are transferred to the human host when the mosquito takes a blood feed, and they migrate to the lymphatics and become adult worms.

Microfilariae show the phenomenon of periodicity. In other words, they come into the peripheral blood during night time. Hence, the blood should be ideally collected nocturnally. Microscopic examination of blood and identifying microfilariae is the standard diagnostic methodology. A thick smear examination of blood after staining with Giemsa is the most prevalent practice. Antibody testing is also used nowadays for diagnosis.

Filariasis is not often mentioned as a cause of isolated lymph node swelling in the neck. Other inflammatory and neoplastic causes are often suspected. Cytological evaluation essentially helps in differentiating neoplastic and inflammatory causes and in cases of obvious swellings provides a valuable diagnostic tool. Many a time, fine-needle aspiration cytology may not be conclusive and in such cases the need for magnetic resonance imaging and guided biopsy has been reported before.

DEC has been used as an antifilarial drug since 1947. The current dose of DEC for treatment is 6 mg/kg/d for 12 days up to a total dose of 36 to 72 mg/kg of body weight.[4] The World Health Organization calls for the distribution of community-wide annual mass drug administration of single doses of albendazole plus either DEC or ivermectin to interrupt the transmission of the parasite for 4 to 6 years. The discovery of DEC in 1947 was a major breakthrough in the elimination of lymphatic filariasis. After extensive mass testing, Japanese scientists achieved elimination of lymphatic filariasis in 1978.[5] After mass screening with blood smears, positive cases were treated

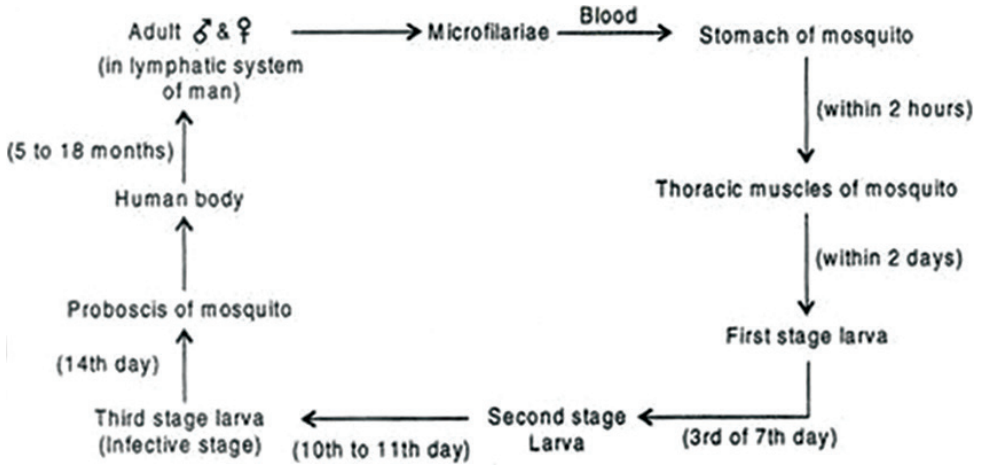

Figure 3: Life cycle of *Wuchereria bancrofti*.

with DEC, 6 mg/kg once a day for 12 days. Additionally, vector control was achieved by spraying with dichlorodiphenyltrichloroethane (DDT) or malathion.

Systematic reviews of various randomized controlled trials have shown the efficacy of multiple drug regimens in lowering the microfilariae of *Wuchereria bancrofti*. Other methods like DEC-medicated salt have also been advocated.[6] There is a continuing need for large conclusive studies comparing the efficacy of the drug regimens. Indeed, more research is required to fill the existing gap in knowledge at this juncture in the interest of the affected populations.

In the case presented herein, after diagnosis, the patient was started on DEC and antihistamines. DEC was started at a dosage of 150 mg twice daily for a period of 2 weeks. Levocetirizine was given at a dosage of 5 mg at night during the same time. Doxycycline[7] was also commenced as an adjuvant therapy. Doxycycline was given at a dosage of 100 mg twice daily for a period of 10 days. The patient reported improvement in her symptoms with medical therapy as her swelling and erythema subsided within 2 weeks of treatment. Subsequent examination was found to be within normal limits, and no further treatment was required.

Due to financial constraints, magnetic resonance imaging could not be performed and biopsy of the lymph node was not done as fine-needle aspiration cytology was diagnostic. The possibility of filariasis must be considered in lymph node enlargement in the neck, especially in endemic areas, and the diagnosis can be established by noninvasive investigations. Once diagnosis is established, medical therapy with DEC is the way to go. In the early stages, full resolution of the symptoms can be achieved.

Conclusion

Lymphatic filariasis, albeit rare, should be considered as a differential diagnosis in lymph node swellings in the neck. Fine-needle aspiration cytology may serve as a useful screening tool in differentiating neoplastic and inflammatory lesions. In the early stages, medical therapy with DEC can produce good results in the filarial disease of the neck.

Conflict of Interest: None declared.

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