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Case Report

Lymphatic Filariasis Presenting as Asymptomatic Unilateral Inguinal Swelling

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I N F O

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A B S T R A C T

Filariasis is endemic in the tropical areas of the world including India. Its common presentation is lymphadenopathy limited to groin and femoral triangle of thigh and also as filarial lymphoedema of legs. The finding rate of microfilaria worm has been reported to be only 0.078% of all samples from lymph node swellings which is rare. Conventional diagnostic investigations include the detection of microfilaria in the blood while in this case it was detected also in FNAC and again confirmed by excision biopsy of inguinal lymph node. Here we report a young female having asymptomatic unilateral inguinal swelling demonstrating lymphatic filariasis.

Keywords: Filariasis, FNAC, Lymphadenopathy, Microfilaria

Introduction

Filariasis is a parasitic infestation manifested by a parasite *Wuchereria bancrofti*.[1] There is head, body and tail in the parasite.[2] In countries such as India, Asian countries and china this parasite have nocturnal periodicity because vector culexfatigans mosquito bites in night and host sleeps at that time.[3] Humans are the definitive host and there is no animal or reservoir host. Intermediate host is the female mosquito and Microfilaria never develops or multiplies in human blood. Recurrent lymphangitis or lymphedema of legs are the main features which causes lymphatic vessel obstruction. Lymph nodes of groin region are involved in majority of cases. This case is important because of rare finding of microfilaria in FNAC of inguinal lymph node and as a differential of tubercular lymphadenitis.

Case Report

A 19-year-old girl, from Uttar Pradesh presented to Medical outdoor with an asymptomatic gradually progressive unilateral swelling in the left inguinal region in the last 3 months. There was no history of genital ulcer, urethral discharge, any systemic symptoms. On local examination of swelling, a solitary subcutaneous mildly tender, firm, mobile 6.5 × 5 cm swelling was present in the left inguinal area (Figure 1).

Figure 1.Left sided inguinal swelling as lymphatic filariasis

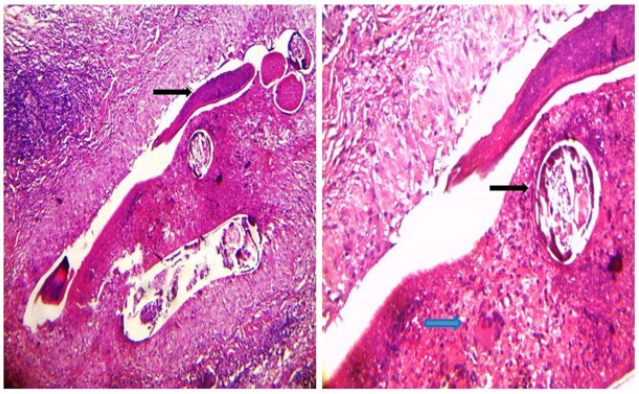

Figure 2.Section from a lymph node showing calcified adult filarial worm (Black arrow) along with foreign body giant cell granuloma (Blue arrow) (X 40, Hematoxylin and Eosin stain)

Except this swelling no any other findings were found on local and systemic examinations. We did Fine-Needle Aspiration Cytological (FNAC) examination of this swelling keeping in mind of differential diagnoses of tubercular lymphadenitis, inguinal bubo and filariasis. A filamentous organism was seen on May-Grunwald-Giemsa staining of the smear, which was suggestive of microfilaria parasite. There was an outer covering, which was slightly curved with a dark black nuclear column (Figure 2).

Lab investigations showed peripheral eosinophilia. Human immune deficiency virus (1 and 2) was non-reactive. On the basis of morphological features and immunochromatography based antigen-assay, final diagnosis of filarial lymphadenitis established. The patient was treated with diethylcarbamazine, 6 mg/ kg as a single dose. Swelling was subsiding within months.

Discussion

Lymphatic filariasis is common disease which is endemic in most of the countries of the world and about 1.4 billion people are assumed to be at risk world-wide. Asia, Africa, Pacific Islands, South America and Caribbean basin are the most affected geographic areas.[4]In India, the endemic states are Bihar with the highest endemicity (over 17%), Kerala (15.7%) and Uttar Pradesh (14.6%).[5] *Wuchereria Bancrofti*, *Brugia Malayi*, *Onchocerca Volvulus* and *Loa Loa* are the important filarial species and the vectors are *Culex Quinquefasciatus* (*W. bancrofti)* and *Mansonia Annulifera* (*B. Malayi*).[4] Parasites larvae are deposited in the human body by the bite of infected mosquitoes and then larvae migrates to loco-regional lymph nodes where these larvae get matured in adult stage. The adult fertilized female *Wuchereria Bancrofti* releases microfilariae in the blood stream. These microfilariae are sucked by mosquitoes at the time of blood feed where they transform into infective larvae in a period of 10-14 days. Now these get move to the proboscis of mosquito's and are injected in the human body perpetuating the life cycle.[6, 7]

Mature *Wuchereria Bancrofti* worms produces a type 2 helper cell inflammatory response of interleukins 4, 5, 9 and 10, resulting in raised IgE levels, formation of granuloma, peripheral blood and tissue eosinophilia, endothelial and connective tissue proliferation. There is occurrence of irreversible anatomical and functional changes in lymphatic vessels which causes permanent dilatation and tortuosity of lymph vessels.[8]

Acute lymphadenitis, asymptomatic subcutaneous swelling, acute lymphangitis, lymph node swellings, funiculo-epididymoorchitis, nodules in breast, chronic lymphedema, hydrocele, thyroid or salivary gland, tropical pulmonary eosinophilia and chyluria are the various clinical pictures of lymphatic filariasis.[9-11] Lymphatic filariasis occurs in nearly 25-30% of all total cases of filariasis while lymph node involvement is found in about 0.047% cases.[10] Chronic lymphedema and increased bacterial and fungal infections occurs in cases of recurrent lymphangitis, transforming into deformities which affects the quality of life of patients.[9]

Non-invasive and invasive diagnostic methods are there, of which imaging modalities like ultrasonography and magnetic resonance imaging where regular twirling motion of echogenic particles of either adult filarial worms or microfilaria in scrotal lymphatics (filarial dance sign) is visualised, are non-invasive modalities. Lymphoscintigraphy gives anatomical and functional defects in lymphatic vessels by use of radiolabelled dextran.

Immunochromatographic and deoxyribonucleic acid probes can demonstrate even species of worm also.[9] This is sensitive and specific method. Peripheral venous blood smears withdrawn at midnight or after diethylcarbamazine provocation during the day can demonstrate microfilaria. Fine-Needle Aspiration Cytology (FNAC) provides a simple, inexpensive and rapid way to diagnose microfilariae and adult worms.[9-11] However, finding of microfilaria in FNAC is an uncommon phenomenon. Superficial sites like lymph nodes, breast lumps, scrotal swellings, thyroid swellings, and soft tissue swellings have very low chances of microfilaria detection.[10, 11] Only 0.078% of detection rate of microfilaria is noted in all samples of lymph node swellings.[10] Body morphology, nocturnal motility, staining pattern, nuclear characteristics and presence or absence of nuclei at the tip are the differentiating points among all species of microfilaria.[6,9] Treatment is done by diethylcarbamazine, 6 mg/kg one dose or every day for a period of 12 days in divided doses, oral ivermectin 200 µg/kg, and albendazole 400 mg twice daily for 2 weeks.[3,9] Chronic lymphedema is very difficult to manage. Limb elevation, massage, regular exercise, local care, intermittent pneumatic compression of the involved organ and surgical interventions like omentoplaxy, lymph node venous shunt,

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excisional surgery and skin grafting are used with different success rate.[9] A single annual dose of oral albendazole 400 mg and diethylcarbamazine 6 mg/ kg of body weight is recommended for prevention of filariasis in endemic countries.[4,9] A number of subunit vaccines are used for prophylaxis but none of them is effective.[12]

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Conflicts of Interest: None

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