LYMPHATIC FILARIASIS- A CASE REPORT

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Abstract:
Filariasis is a disease group caused by filariae that affects humans and animals. Of the hundreds of described filarial parasites, only 8 species cause natural infections in humans. In this, repeated episodes of inflammation and lymphedema lead to lymphatic damage, chronic swelling and elephantiasis of the legs, arms, scrotum, vulva and breasts.
Case presentation: A 72 year old male patient admitted in the hospital with chief complaints of fever, lower right limb swelling, and testicular pain with testicular swelling (mild). Upon laboratory investigations, it was found to be lymphatic filariasis.
Discussion and Conclusion: More than 120 million people are infected. Imaging Ultrasound plays an important role in diagnosing filariasis. This case report deals with swelling of left lower limb and scrotum. The clinical manifestations of filariasis vary from person to person depending upon course of infection and worm load. Simple and cost-effective control strategies should be developed.

IndexTerms **-** Lymphatic filariasis, Scrotal swelling, Lower limb swelling.

I. INTRODUCTION

Lymphatic Filariasis is a parasitic helminth disease that constitute a serious public health issue in tropical regions. The filarial nematodes that cause these disease are transmitted by blood-feeding insects[1]. This is caused by *Wuchereria bancrofti* and *Brugia malayi*. Both parasites produce essentially similar clinical presentation in man, related mainly to the pathology of the lymphatic system. The most widespread infection is due to *W.bancrofti* (98%) and the remaining by *B. malayi* (2%). In India, *W.bancrofti* is trasmitted by the ubiquitous mosquito, *Culex quinquifasciatus* and *B.malayi is* transmitted by Mansonia mosquitoes[2]. Gender specific estimates indicated that prevalence of *W.bancrofti* infection in males is 10% more than that in females[3]. The clinical manifestations of LF may vary from one endemic area to another. Generally, the most common clinical form of the disease is hydrocele with lymphedema and elephantiasis occur less commonly. In India and neighbouring countries, both hydrocele and lymphedema are common. Diagnosis of filarial infection depends on the direct demonstration of the parasite in blood and skin specimens. Circulating Filarial Antigen(CFA) detection test is now regarded as the 'gold standard' for diagnosing W.bancrofti infections[4]. Recent developments in the diagnosis include membrane filtration method for microfilaria detection, ultrasonography and lymphoscintigraphy. Treatment includes diethylcarbamazine which is effective against both microfilaria and adult worm. This lowers the blood microfilaria levels markedly even in singe annual doses of 6mg/kg[5]. The earlier recommended dose of this drug was 6mg/kg given daily for 12 days. Recent studies have shown that single dose of DEC 6mg/kg is as effective as the above standard dose given for 12 days[6]. Established lymphedema cannot be completely cured even though varying degrees of relief is possible with treatment. Few modalities help to prevent further progression by keeping the limb elevated at night, after removing the bandage and regular exercising of the affected limb. Primary prevention of lymphedema is achieved by preventing a filarial infection in the 'at risk' population and thus avoiding the early subclinical pathology caused by the adult parasite, which later leads to lymphedema[7].

II. ABBREVIATIONS

W.bancrofti: Wuchereria bancrofti, B.malayi: Brugia malayi, LF: Lymphatic Filariasis, CFA: Circuclating Filarial Antigen, DEC: Diethylcarbamazine, USG: Ultrasonography, NFCP: National Filaira Control Programme

III. CASE REPORT

A 72 year male patient, presenting with symptoms of fever, scrotal pain with swelling (mild), gross swelling of his left lower limb since one year, walking on his own. Physical examination revealed significant abnormality in left lower limb (**Fig.1**) with non pitting edema. A complete blood count showed no abnormality. Blood pressure was normal. USG revealed anechoic tubular channels in the paratesticular region which showed no flow on Color Doppler study (**Fig.2**). Ultrasound examination showed anechoic tubular channels in the inguinal region and anterior to femoral vessels which failed to show any flow on color flow imaging (**Fig.3**). The patient was given 100mg of oral diethylcarbamazepine(DEC) three times a day. In addition, injectable analgesics, antibiotics were prescribed. Anti filarial treatment was continued in order to reduce the symptoms. Conservative therapy like elastic compression garments are worn on the affected limb following complete decongestive therapy to maintain edema reduction was given to patient apart from medication. Patient was in hospital for 7 days till the fever has been subsided and was discharged with necessary instructions like antifilarial therapy for three weeks followed by conservative therapy regularly and counseled to prevent mosquitoes by using mosquito nets, repellents as it may lead to disease progression.

Figure.1 Filarial lymphedema

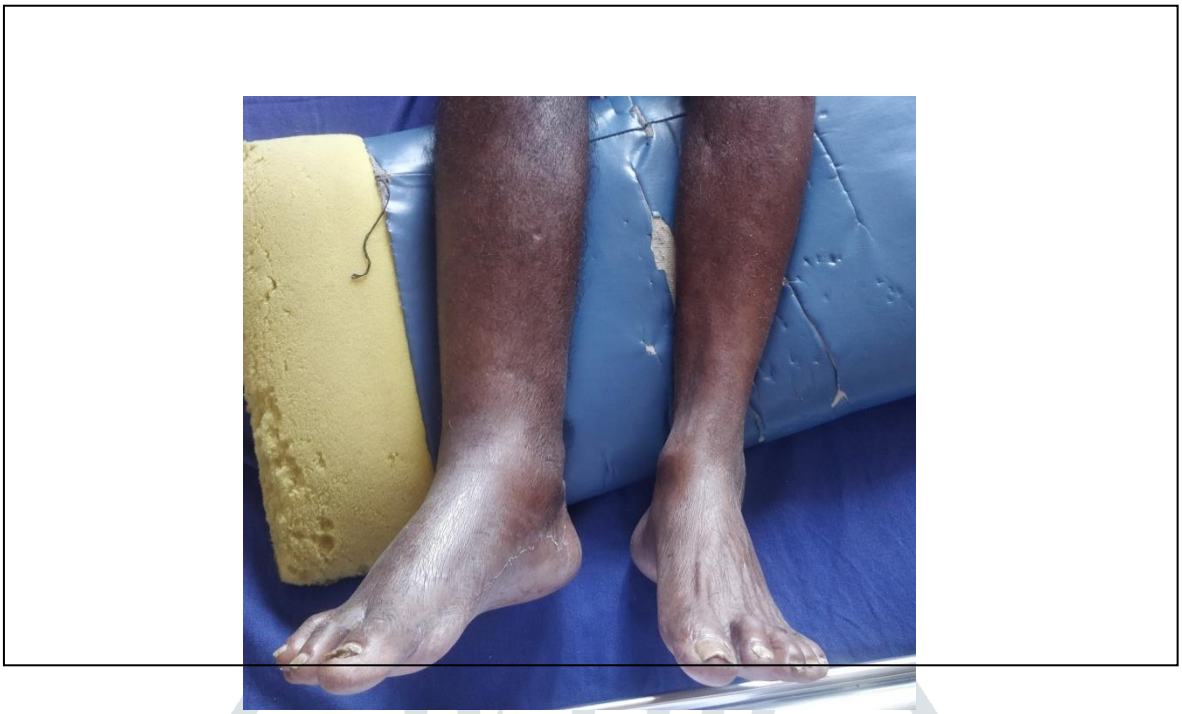


Figure.2 USG images shows anechoic tubular channels in the paratesticular region with linear moving echoes within it. Light microscopy shows linear filarial larvae

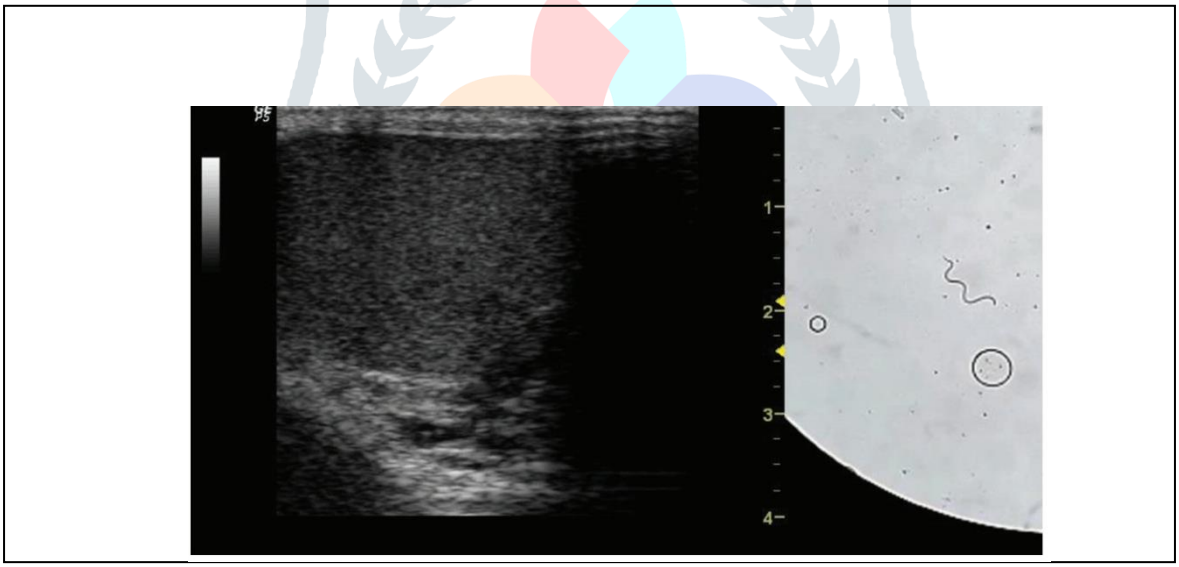
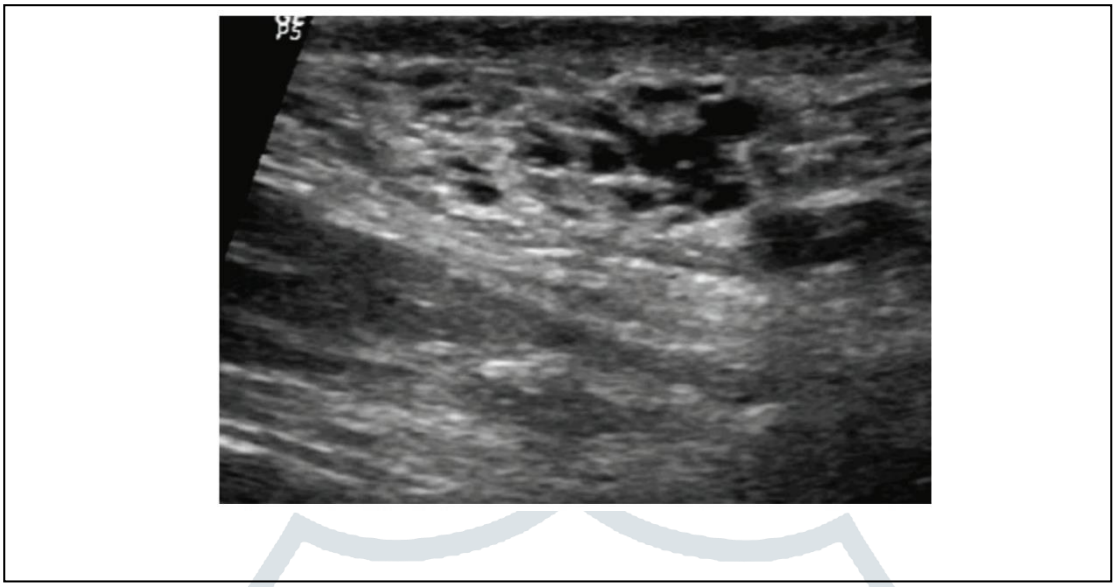


Figure.3 USG images shows anechoic tubular channels in the inguinal region and anterior to femoral vessels



IV. DICUSSION

Lymphatic filariasis(LF), the second most common vector-borne parasitic disease after malaria, is found in over 80 tropical and subtropical countries. WHO estimates that 120 million people are infected with the parasite, with one billion at risk[8]. Victims of this disease mostly are poor who live in conditions which are favorable for mosquitoes to transmit the disease easily. It occurs in all the ages and both genders equally. It generally depends on working in agriculture fields and as labours[9]. The cases of filariasis spread by many environmental factors especially swamp water and pool area with many water plants and the other factors are socio-economic status[10].

In our case report, the main cause of filariasis was patient's occupation. Patient was a farmer. Individual with filarial infection can be asymptomatic or symptomatic. Manifestation of filarial infection can be acute filarial fever, inflammatory nodules in scrotum or chronic pathologies like hydrocele and elephantiasis [11]. Infection is caused by *Wuchereria bancrofti*, *Brugia malayi*, *Brugia timori* which involve the adult worms living in the afferent lymphatics while their larval progeny, the microfilariae, circulate in the peripheral blood where they are available to infect mosquito vectors when they need. But W.bancrofti is the most common cause of filariasis[12]. In the earlier stages of lymphangitis, the diagnosis is made on clinical grounds which include night blood survey, serological tests, xenodiagnosis, ultrasonography, lymphoscintigraphy and x-ray. In this patient, doctors advised ultrasonography and concluded lymphatic filariasis[13]. Treatment aspects include diethlycarbamazine(DEC) as a drug of choice for treating lymphatic filariasis. DEC cause a rapid disappearance of microfilariae from the circulation, DEC acts as considerable macrofilaricidal against the lymphatic filarial parasites, but has no effect on the action of development of microfilariae in the mosquito and third-fourth stages of larvae of W. bancrofti. Other treatment options include surgery and other excision technique if the condition is worsen[14].

In India, the national filarial control programme(NFCP) was launched in 1955, with the objective of deliminating the problem, to undertake control measures in the endemic areas and to train the personnel. The main control measures were mass DEC administration, antilarval measures in urban areas and indoor residual spray in rural areas. In 2000, WHO launched the global progaramme to eliminate lymphatic filariasis (GPELF), which aims to interrupt transmission of lymphatic filariasis by 2020[15].

V. CONCLUSION

Lymphatic filariasis is a major cause of clinical suffering and disability. Filariasis is not just a disease but an economic and social problem. Ultrasound remains the primary imaging modality in diagnosing the filariasis. Thus imaging helps in treatment especially in cases of asymptomatic patients. Because of effective diagnostic techniques, knowledge of disease vector, potent treatment, and lack of animal reservoirs, filariasis is a potentially eliminable disease. While more research is needed in many areas, this should not delay or compromise the nation-wide lymphatic filariasis elimination program or access to treatment.

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VIII. CONFLICT OF INTEREST

The author and planners have disclosed no potential conflicts of interest, financial or otherwise.

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