

## CASE REPORT

# Chronic Lymphatic Filariasis in the Coastal Area of Java Island: A Case Report

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### ABSTRACT

Filariasis is a neglected tropical disease caused by nematode parasites, transmitted through mosquito vectors, leading to chronic lymphatic obstruction and significant morbidity in affected individuals. This case report intends to highlight the clinical presentation, diagnostic problems, and treatment outcomes of lymphatic filariasis in an older patient, highlighting the significance of early detection and good management. A 73-year-old female from Surabaya presented with one month of bilateral leg swelling, especially on the left side, but no other symptoms. A physical examination found pitting edema in the lower extremities, and laboratory tests confirmed a positive microfilaria result. Diagnosed with lymphatic obstruction due to filariasis and grade 1 hypertension, she was treated with Diethylcarbamazine (DEC) and Albendazole. Follow-up showed reduced leg swelling but persistent microfilaria positivity, leading to continued treatment. The case underscores the importance of timely management of filariasis to prevent long-term morbidity.

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the management of filariasis, highlighting the importance of adequate treatment to prevent long-term morbidity.

### CASE REPORTS

### INTRODUCTION

Filariasis is a disease caused by nematode parasites like *Wuchereria bancrofti*, *Brugia malayi*, and *Brugia timori*, is transmitted through mosquito vectors such as *Aedes*, *Anopheles*, *Culex*, *Mansonia*, and *Ochlerotatus*. As a Neglected Tropical Disease (NTD), it primarily affects tropical and subtropical regions, with around 120 million people infected worldwide, particularly in Asia, Africa, the West Pacific, South America, and the Caribbean. In Indonesia, as of 2022, 8.635 cases were reported, with the highest prevalence in Papua, West Papua, NTT, Aceh, and West Java (1). The disease manifests in both acute and chronic forms, leading to severe conditions like elephantiasis if untreated. This case report discusses

A 73-year-old female patient, residing in Surabaya, presented with swelling in both legs for the past month, predominantly on the left side, which worsens when her legs hang down (Figure 1). She reported numbness without pain or injury and denied swelling in the upper limbs, fever, cough, shortness of breath, or gastrointestinal issues. She had pitting edema in both lower extremities, indicating lymphedema, but no abnormalities in the thorax or abdomen. Laboratory tests showed Hb of 11,0 g/dL, WBC of 8.250/mm<sup>3</sup> (absolute neutrophil count 4.490/mm<sup>3</sup>, neutrophils 54,5%, absolute eosinophil count 700/mm<sup>3</sup>, eosinophils 0.8%). The microfilaria test was positive (Figure 2). Doppler ultrasound revealed a popliteal artery thrombus with proximal dilatation and decreased distal flow, as well as venous valve incompetence of right great saphenous vein, starting



Figure 1: Clinical condition before treatment

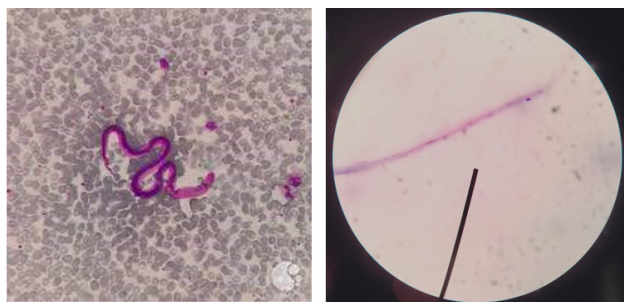


Figure 2: Thick and Thin Blood smear showing *Microfilaria* (Giemsa, x40 objective (Left) and x10 objective (Right))

from the right and left saphenofemoral junction and left Dodd’s perforator which causes dilatation accompanied by tortuosity of superficial veins in the cruris region (varicose veins), as well as obstruction of the lymphatic system.

Initially, the patient was given Diethylcarbamazine (DEC) at a dose of 6 mg/kg/day, divided into three doses of 150 mg each (based on a body weight of 70 kg), for 12 days. Since the microfilaria test results were still positive, the patient is planned to receive Albendazole 300 mg once daily for 2 weeks and Diethylcarbamazine 150 mg three times daily for 12 days.

At the second outpatient clinic visit, the patient reported a reduction in leg swelling. Physical examination showed the patient in good general condition. A repeat microfilaria test was planned. At the third visit, the patient presented the results of the microfilaria evaluation, which were positive. The patient noted that while the leg swelling had decreased, there was a burning sensation on the soles of the feet. The patient was prescribed Albendazole 300 mg once daily for 2 weeks and Diethylcarbamazine 150 mg three times daily for 12 days.

At the fourth visit, the patient again presented positive microfilaria test results. The patient reported that the leg swelling persisted but had reduced, and the burning sensation in the soles had resolved. Treatment with Albendazole and Diethylcarbamazine was continued at the same dosages.

## DISCUSSION

Filariasis is a parasite disease carried by mosquito vectors, resulting in chronic diseases like limb edema, hydroceles, and testicular tumors. As a Neglected Tropical Disease (NTD), it primarily affects low-income populations in tropical and subtropical regions, often overlooked compared to diseases like HIV/AIDS, Tuberculosis, and Malaria (2). The disease is caused by nematode parasites, with *Wuchereria bancrofti*, *Brugia malayi*, and *Brugia timori* being the most common. *W. bancrofti* is prevalent in sub-Saharan Africa, Southeast Asia, the Pacific islands, and parts of Latin America and the Caribbean, while *B. malayi* and *B. timori* are found in Southeast Asia, including Indonesia. Filariasis affects about 120 million people in 72 countries, with higher incidence in coastal areas, as seen in regions like Brebes, Central Java (3). Humans serve as the main reservoir, while mosquitoes act as vector carriers, introducing filarial larvae into the bloodstream. Through maturation in lymph nodes, these larvae cause lymphatic blockage, recurrent infections, and severe disorders such as elephantiasis caused by lymphatic fibrosis and contractile failure.

Lymphatic filariasis can be present as asymptomatic, acute, or chronic, with most infections being asymptomatic yet still causing damage to the lymphatic system and kidneys, weakening the immune system. Chronic infection can lead to lymphedema, elephantiasis, or hydrocele in men. Acute manifestations include Acute Adenolymphangitis (ADL), characterized by high fever, painful lymphadenopathy, and retrograde lymphangitis, and acute dermatolymphangioadenitis (DLA), marked by edematous inflammation and systemic symptoms due to bacterial skin infections. Chronic lymphedema often results from lymphatic gland inflammation, leading to swelling, tissue hardening, hyperpigmentation, and severe cases of elephantiasis. *Brugia malayi* infections typically limit lymphedema to distal extremities, while renal complications like chyluria can cause nutritional deficiencies. Bancroftian filariasis may also lead to hematuria and proteinuria, although the exact mechanisms remain unclear (4).

Definitive diagnosis of lymphatic filariasis can be made through the detection of filarial antigens, microfilariae, or DNA in the blood, or by identifying adult worms in the lymph nodes. Microscopic examination of blood smears collected at night is the standard method for detecting microfilariae, while ultrasound and lymphoscintigraphy can identify adult worms in lymphatic glands, with live worms showing a characteristic “dancing” movement (4).

Treatment typically involves Diethylcarbamazine (DEC) unless contraindicated due to co-infections like Loiasis, in which case alternatives like Doxycycline or Albendazole are used. Managing chronic lymphedema

involves improving skin hygiene, using compressive bandages, and ensuring regular foot care. Effective treatment with DEC, possibly combined with Ivermectin or Albendazole, can prevent deformities and have a good prognosis. However, recurrent acute conditions like adenolymphangitis can worsen lymphedema, even without ongoing lymphatic filariasis infection, with elephantiasis being the most severe outcome of chronic or recurrent infections (5).

Filariasis infections can be treated quickly and effectively avoid deformity, so the prognosis is quite good. Administration of five doses of DEC every year, with or without ivermectin or albendazole, can eradicate disease. Elephantiasis is the worst clinical manifestation and can be caused by condition acute or chronic infections that recur in the long term. When adenolymphangitis occurs in acute and recurrent conditions, even without the occurrence of lymphatic filariasis; lymphedema conditions may worsen.

## CONCLUSION

A 73-year-old woman with chronic lymphatic filariasis presented with swollen legs but no fever. The diagnosis was confirmed through a positive microfilaria test, although Doppler ultrasound did not reveal the characteristic filarial dance. Following treatment with Diethylcarbamazine (DEC) and Albendazole, her symptoms improved, but microfilaria remained present upon reevaluation, and she continued to experience swelling in her legs, albeit with some improvement.

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