A case Report on rare finding of Microfilaria in Pus sample of an ulcer over Elephantiasis Leg

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Title:

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Abstract:

Skin ulcerations are a significant cause of morbidity and can be challenging to manage. Among the various causes of chronic non-healing ulcers, lymphedema is also considered a possible diagnosis in countries such as Nepal. Lymphatic filariasis has been a significant public health issue in endemic areas. Wuchereria bancrofti is a common nematode parasite that causes lymphatic filariasis. Excessive retention of lymphatic fluid in the interstitial compartment can cause localized tissue swelling, known as lymphedema, which is caused by impaired lymphatic drainage. Microfilariae can be detected in peripheral blood, body fluids, and needle aspirates. Microfilaria is not commonly found in ulcers on elephantiasis legs.

Introduction:

Chronic non-healing ulcers are one of the challenging cases encountered in the Department of Dermatology and Surgery. Although the majority of cases occur from venous disorders, around 30% of chronic ulcer cases are due to vascular disorders, including diabetes, malignant ulcers, traumatic ulcers, and chronic lymphedema(2). Lymphatic filariasis is still a public health issue in several parts of South-East Asia. Although a decline in prevalence can be appreciated, there are still a few cases of lymphedema and elephantiasis encountered (3). Lymphedema is a progressive condition that can have a significant physical and psychological

impact on affected patients, leading to a marked reduction in their quality of life (4). Filariasis is still a debilitating parasitic disease (5).

Apart from the blood and lymph node aspirate, microfilaria can also be isolated in fine needle aspirates from various samples, as well as from chyluria, chylous ascites, and hydrocele fluid (5).

Case report:

A 73-year-old female patient was admitted with complaints of bilateral leg swelling that had been present for the past 53 years. (Figure 1)

Figure.1 Clinical photo of patient showing elephantiasis leg.

She has had ulcers in the right groin region for 7 days. They were three in number and had an average size of 2 × 3 cm, with pus discharge. There was an associated fever with chills. She also reported a history of recurring swelling in both legs, along with intermittent episodes of ulceration. On examination, non-pitting edema was observed in both the feet, legs, and thighs, and three ulcers were observed in the right groin. Each ulcer had an irregular margin, sloping edge, and a yellowish overlying slough, with a discharge of pus. The base was indurated and fixed with underlying structure. The skin of both legs had a blackish pigmentation and rough scaling. There was an incision mark with fibrosis present on the right thigh, indicating a similar past history. Bilateral inguinal lymph nodes were palpable. They were discreet, smooth, and firm in consistency. All other systems were within normal limits.

As the ulcer was infected and had pus discharge, a sample of the pus was sent for microscopic examination and culture sensitivity. (Figure 2)

Figure 2.Pus collection on sterile syringe without needles

Microscopic findings:

Pus from the ulcer was sent to the Microbiology department. Gram staining revealed the presence of multiple microfilariae under a binocular microscope.(Figure 3)

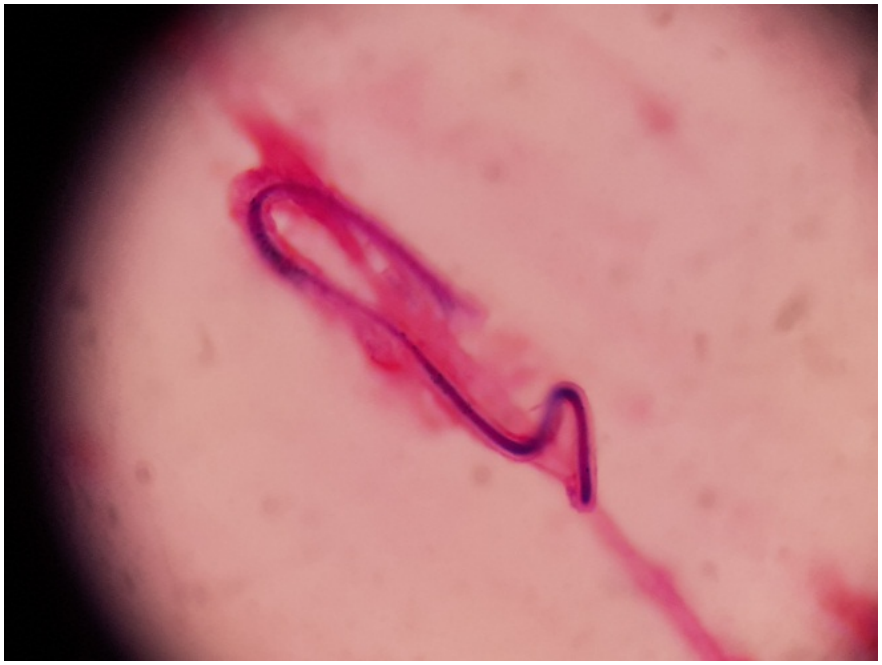

Figure.3 Gram staining of pus showing microfilaria

The patient underwent incision and drainage (I&D) for a right inguinal abscess located under the ulcer. In addition, medical management was provided using steroids (Prednisolone) and Diethylcarbamazine (DEC) (6).

Discussion:

Filariasis is the most common cause of lymphedema worldwide. Around 120 million people are infected, and approximately 40 million have lymphatic problems. The disease is seen in Africa, Southeast Asia, the Western Pacific, the Americas, and the Middle East (7). Transmission and morbidity are highest in Southeast Asia and Sub-Saharan Africa. It is caused by Wuchereria bancrofti, Brugia Malayi, and Brugia Timori, and is transmitted by female mosquitoes (Culex, Anopheles, and Aedes). Nearly 90% of microfilariae are of W. bancrofti (5). Usually, people residing in endemic zones and being exposed to repeated mosquito bites over several months are required in order to acquire lymphatic filariasis. The majority of infected patients are asymptomatic, while others present with acute symptoms such as fever, headache, malaise, inguinal and axillary lymphadenitis, lymphangitis, cellulitis, abscess formation, and funiculoepididymo-orchitis. In the chronic form, it can lead to the formation of elephantiasis in the legs, arms, scrotum, vulva, penis, and breasts. Chyluria and lymphovarix are rare conditions. Eosinophilia and microfilaremia are common during the acute phase.

Peripheral blood smears with Gram stain, Ziemsa stain, or H&E play an important role in diagnosing microfilaria, as they can be found in the blood. On the other hand, lymph node aspirate can be used to detect adult parasites. Differential diagnosis of filariasis should be considered for any lymphedema in an endemic zone, even in the absence of circulating antigens or parasites on laboratory examination.

Conclusion

This case report highlights rare finding of the presence of microfilaria in the pus sample of an ulcer over an elephantiasis leg. Lymphatic filariasis, caused by Wuchereria bancrofti, is a common public health issue in endemic areas. The patient presented with chronic leg swelling, recurrent ulceration, and lymphadenopathy. Microscopic examination of the pus sample revealed the presence of microfilariae. The patient was managed

with incision and drainage for abscess, along with medical treatment involving steroids and diethylcarbamazine. This case emphasizes the importance of considering filariasis as a differential diagnosis in chronic non-healing ulcers, particularly in endemic regions, even in the absence of circulating antigens or parasites on laboratory examination. Early detection and appropriate management can be crucial in reducing the morbidity associated with lymphatic filariasis.

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