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Case Report

Elephantiasis and nodular scabies coinfection: a rare case report

Yunita Armiyanti, Muhammad Ali Shodikin, Achmad Ilham Tohari

Indonesia is a tropical country and home to many infectious diseases. Two of them are filariasis and scabies. The coinfection of filarial infection and scabies may cause severe morbidity for the patient, especially children. There has been no reported coinfection or management between these two diseases. An 11-year-old boy was brought to the pediatrics division of Dr. Soebandi Hospital with diffuse enlargement of the left lower extremity and scrotum, along with non-pitting edema, itching, and nodular skin lesions all over the body. It is important to consider holistic approaches to prevent further morbidity and disability. **[Paediatr Indones. 2025;65:438-42; DOI: https://doi.org/10.14238/pi65.5.2025.438-42**].

Keywords: *elephantiasis; filariasis; scabies*

Lymphatic filariasis (LF) is a disease caused by Brugia malayi, Brugia timori, and Wuchereria bancrofti, with Wuchereria bancrofti being responsible for over 90% of cases. These parasites are transmitted by various species of mosquito, which vary by region.[1] Lymphatic filariasis is endemic in 72 countries and affects 120 million people worldwide. It is estimated that over 40 million people may suffer from disabilities due to this chronic illness.[2] Lymphatic filariasis infection can be asymptomatic, acute, or chronic. Even individuals without visible symptomps can contribute to the transmission of the parasite.[3] Symptomatic LF can lead to lymphadenopathy, which is characterized by the enlargement of lymph nodes. This can result in permanent impairment such as elephantiasis, although mortality is rare.[4]

Indonesia, as a tropical country, is endemic to many infectious diseases. Two of these diseases are filariasis and scabies.[5] Scabies is a parasitic skin infection that is transmitted by the mite Sarcoptes scabiei. The exact number of global scabies cases is unknown, but it is estimated to be around 130 million cases.[6] The prevalence and complications of scabies make it a significant public health issue in the developing world, with a disproportionate burden on children living in poor, overpopulated tropical regions.[7] Coinfection of filarial infection and scabies may cause severe morbidity and disability, especially in children. To date, there are no reported cases of coinfection between the two diseases. Here, we present a case and management of elephantiasis coinfected with scabies in a child.

The case

An 11-year-old-boy presented with diffuse enlargement of the left lower extremity and scrotum, accompanied by non-pitting edema, itching, and nodular skin

From Faculty of Medicine Universitas Jember, Jember, East Java.

Corresponding author: Yunita Armiyanti. Faculty of Medicine Universitas Jember, Jember. Email: yunita.fk@unej.ac.id.

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lesions all over the body. The enlargement of the left lower extremity had been ongoing for more than three years, while the scrotum enlargement began six months ago. There is no family nor vicinity history of similar symptomps. The enlarged legs feel thick and movement is difficult. He has history of intermittent fever with the last episode occurring a month ago, however his temperature was normal when he admitted to the hospital. He also complained of worsening itching at the night and the appearance of nodular lesions on his body. The entire family of the patient and many children around the patient's house also experienced itching and similar lesions in several parts of the body. The itching was particularly unbearable in the scrotal area, leading to frequent scratching until it bled. The bleeding from the scrotum was managed by the parents using cotton. Dermatology division was consulted to evaluate and manage patient symptoms. Clinical symptomps of the patients are shown in **Figure 1** and **Figure 2**. The vital signs were within the normal limit (BP 115/80, HR 70x/min, temperature 36.8^{o}C, respiratory rate 18x/min). The patient's conjunctiva was anemic, and the patient's palms were pale. Regarding the patient's nutritional status, he was undernutrition.

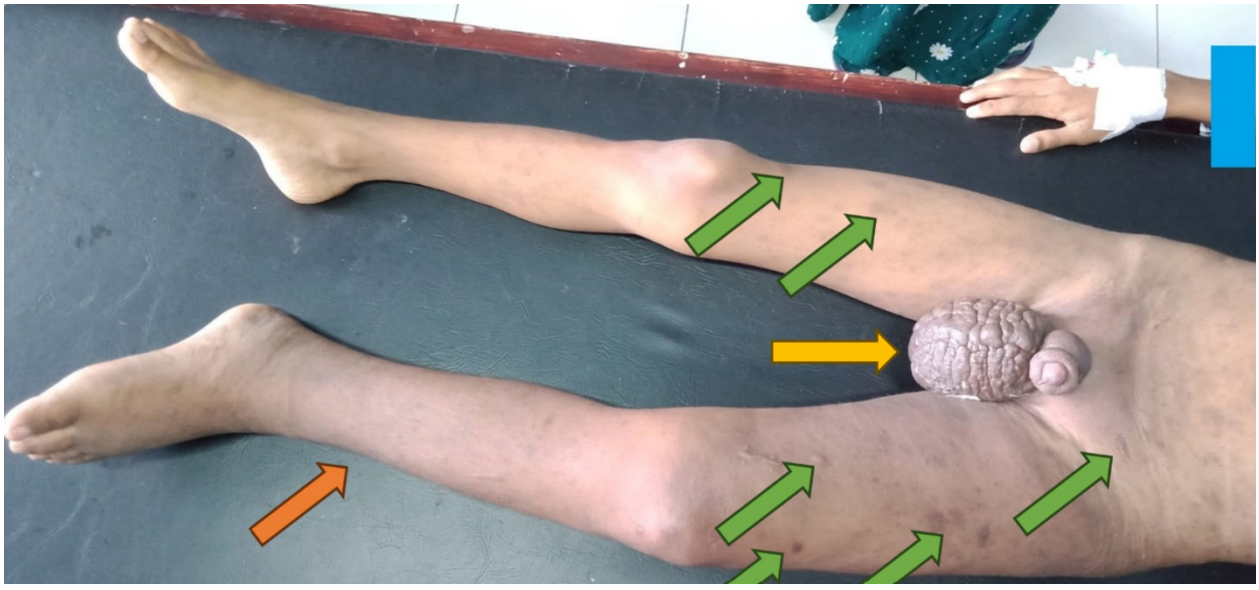

Figure 1 . Elephantiasis of the left lower extremity (orange arrow), scrotal edema (yellow arrow), and nodular lesion on the patient's body (green arrow)

Figure 2. Scrotal edema

The laboratory findings showed normochromic normocytic anemia (hemoglobin level: 5.9 g/dL), thrombocytopenia (70.000/μL), eosinophilia (6%), and low hematocrit (39%). The total leukocyte (7000/μL), stab leukocyte (0), segmented leukocyte (15), basofil (0), lymphocyte (24%), and monocyte (6%) were within normal limit. No microfilaria was found in the blood examination. The ultrasound of inguinal lymph node and scrotal showed fibrous tissue without any cystic mass or liquid, also there was no "filarial dance sign". However, based on the clinical manifestation, the patient was diagnosed with elephantiasis and nodular scabies along with anemia. Prolonged clawing, which is as a result of scabies-related pruritus, leads to bleeding. A chronic infection and persistent blood loss from ongoing hemorrhage in the distended scrotum result in anemia in the patient. Also, malnutrition may worsen the anaemia. The patient was treated with albendazole, packed red cells transfusion, analgetics, antihistamines, and skin ointment containing permethrin, antibiotics, and steroids. The patient was discharged on the 7th day of hospital care. After regular monthly follow-up, the patient demonstrated restricted functional improvement and limb lightening.

Discussion

Lymphatic filariasis is one of the neglected tropical diseases (NTDs) caused by several types of filarial worms, such as Wuchereria bancrofti, Brugia malayi, and Brugia timori. This disease is spread by mosquitoes. In Indonesia, 23 species of mosquitoes from 5 genera (Mansonia, Anopheles, Culex, Aedes and Armigeres) have been identified as vectors for filariasis. Ten Anopheles mosquitoes were identified as vectors for rural type of W. bancrofti, while Culex quinquefasciatus is a vector for the urban type8. There are 236 regencies/cities in Indonesia that are considered endemic areas for filariasis, with most cases occuring in Papua and Nusa Tenggara Barat.[9]

In this study, patient is an 11-year-old child living in Jember, East Java which is a non-endemic zone for lymphatic filariasis (LF) in Indonesia. Eventhough East Java is a non-endemic area, LF transmission can still occur due to the movement of people. Symptoms of LF can vary from asymptomatic to symptomatic conditions like elephantiasis, but the key point is that all infected individuals can act as reservoirs.[3] A study reported 28 cases of LF in Semarang, Central Java, another non-endemic area. The study revealed that factors associated with LF infection include poor hygiene, inadequate drainage, and stagnant water which serve as potential mosquito breeding grounds near the houses.[10] It is rare for children to develop lymphatic filariasis, especially until it progresses to elephantiasis. Children in endemic areas with high transmission intensity are often exposed to the infection, but usually remain asymptomatic until adulthood. Therefore, our case is uncommon and rare.

The microscopic examination did not reveal any microfilaria in the blood of this particular case. It is worth noting that in many reported cases, the presence of microfilariae in the blood (amicrofilaremic case) may not be evident even after proper blood collection. Ahuja et al. also reported filariasis without microfilaremia.[11] Amicrofilaremic conditions can occur due to elephantiasis, lymphangitis, early stages of allergic manifestations, and occult filariasis.[12] It is also possible for amicrofilaremic cases to occur when only the male worm is present in the lymph vessel. In our case, the patient exhibited elephantiasis in the left limb and scrotum, indicative of the chronic stage.

The patient had elephantiasis affecting the left leg and scrotum. The adult worm can live for 5-7 years in lymph vessels. It means that the condition may have been present for more than five years. Elephantiasis is a chronic manifestation of filarial infection involving the lymphatic system. The death of adult worms triggers acute inflammation and lymphatic dysfunction. This leads to progressive fibrosis, obliteration of vessels by granulomas, formation of thrombi, and extensive perilymphangitis, resulting in irreversible lymphatic damage. The key process involves the permanent blockage of lymphatic channels, causing lymphatic stagnation that stimulates the growth of fibroblasts. As a result, the destruction of lymph nodes occurs, leading to lymphedema and elephantiasis.[13]

In Indonesia, a tropical nation where parasites and their vectors are commonly found, the population is susceptible to infection by these parasites.[14] One of the most common skin infections in Indonesia is scabies, caused by Sarcoptes scabiei. Infestation with the scabies mite results in the eruption of papules, nodules, and vesicles that are very itchy. This is

mostly due to the host's hypersensitivity, although mite infestation also plays a role. Consequently, the incubation period prior to the onset of symptoms is 3–6 weeks in cases of initial infestation and 1-2 days in cases of re-infestation.[15] This infection is particularly widespread in low-income populations with poor hygiene and crowded living conditions. Since scabies is spread by mites, the disease often affects entire families and nearby communities.[7] In this report, we found that all members of the patient's family had the same itching and nodular hyperpigmentation lesions on the skin, and people around the patient's house also suffered the same symptoms. In order to control the transmission of scabies between families and close contacts, it is recommended to administer treatment to all household members and close contacts on the same day as the infected individual, and to wash all apparel and bedding that were used during the three days prior to the commencement of treatment.

Many reported studies suggest that filarial infection does not contribute to the occurrence of anemia.[16,17] The patient becomes anemic due to chronic infection and chronic blood loss caused by continuous bleeding at the enlarged scrotum. The bleeding happens as a result of continuous scratching due to scabies itchiness. The anemic condition could also be caused by malnutrition. The diagnosis of anemia was given due to the clinical signs (anemic conjunctiva and pale palms) and laboratory findings (hemoglobin level 5.9 g/dL). The patient received packed red cells transfusion to treat the anemia. A study in Ghana showed widespread malnutrition among filarial lymphedema patients.[18] Socioeconomic conditions due to poverty can also contribute to malnutrition because of inadequate nutritional intake. Therefore, the patient needs nutritional intervention to complement the current management of filarial lymphedema. The patient has already received packed red blood cells transfusion and has improved nutritional intake.

Both LF and scabies can lead to severe morbidity in patients. In addition, for pediatric patients, the fact that elephantiasis is an irreversible condition may affect their growth, development, and social life.[19] The diagnosis and management of this coinfection must consider several medical specialties such as infectious disease control, pediatrics, and dermatology. Early diagnosis is essential to prevent further morbidity and disability.

In terms of infectious disease control, it is important to treat patients with well-established antiparasitic treatment options, including a single dose of albendazole (400 mg), single dose of ivermectin (400 mcg/kgBW), or diethylcarbamazine (DEC) with increasing dose started from 1 mg/kgbw to 6 mg/kgbw in 3 days then continued for three weeks.[20] This patient received a single dose of 400 mg albendazole and then regular follow-up monthly until 6 months revealed restricted functional improvement and limb lightening. Considering that LF is a community disease that can spread from one individual to another, even asymptomatically, a large-scale treatment for all at-risk populations is crucial. Educating patients and the surrounding population about vector control such as indoor residual spraying, environmental management, and bednets is also necessary, as it can support the LF elimination program. Moreover, the patient was also treated with skin ointment containing permethrin, antibiotics, and steroids to treat the scabies infection and reduce the itching.

In conclusion, managing coinfection of lymphatic filariasis and scabies in pediatric patients requires more attention due to the high potential for future morbidity and disability. Holistic approaches to infectious disease control should include the use of antiparasitic drugs such as albendazole, ivermectin, or DEC. Treating large at-risk populations to interrupt the transmission of the disease and eliminating scabies with permethrin, antihistamines, and analgetics should be considered.

Conflict of interest

The authors declare no conflict of interest.

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References

1. World Health Organization. Global programme to eliminate lymphatic filariasis: progress report, 2018. Wkly Epidemiol

Rec. 2019;94:457-70.
2. Pan American Health Organization, World Health Organization. Neglected Tropical Diseases - Lymphatic Filariasis. Available from: https://www3.paho.org/hq/dmdocuments/2017/2017-cha-filariasis-factsheet-work.pdf
3. World Health Organization. Lymphatic filariasis [Internet]. June 2022 [cited 2022 Nov 13]. Available from: https://www.who.int/news-room/fact-sheets/detail/lymphatic-filariasis
4. Wijesinghe RS, Wickremasinghe AR, Ekanayake S, Perera MS. Physical disability and psychosocial impact due to chronic filarial lymphoedema in Sri Lanka. Filaria J. 2007;6:4. DOI: https://doi.org/10.1186/1475-2883-6-4
5. Mitchell E, Kelly-Hanku A, Krentel A, Romani L, Robinson LJ, Vaz Nery S, *et al*. Community perceptions and acceptability of mass drug administration for the control of neglected tropical diseases in Asia-Pacific countries: A systematic scoping review of qualitative research. PLoS Negl Trop Dis. 2022;16:e0010215 . DOI: https://doi.org/10.1371/journal.pntd.0010215
6. El-Moamly AA. Scabies as a part of the World Health Organization roadmap for neglected tropical diseases 2021-2030: what we know and what we need to do for global control. Trop Med Health. 2021;49:64. DOI: https://doi.org/10.1186/s41182-021-00348-6
7. Hay RJ, Steer AC, Engelman D, Walton S. Scabies in the developing world-its prevalence, complications, and management. Clin Microbiol Infect. 2012;18:313-23. DOI: https://doi.org/10.1111/j.1469-0691.2012.03798.x
8. Arsin A. Filariasis epidemiology in Indonesia. Makassar: Masagena Press; 2016.
9. Indonesia Ministry of Health. Rencana Aksi Program P2P 2020-2024 [Internet]. Aug 2020 [cited 2022 Nov 25]. Available from: https://e-renggar.kemkes.go.id/file_performance/1-029017-2tahunan-218.pdf
10. Nurjazuli N, Santjaka A. Potential sources of transmission and distribution of lymphatic filariasis in Semarang City, Central Java, Indonesia. Unnes Journal of Public Health. 2020;9:43-9. DOI: https://doi.org/10.15294/ujph.v9i1.30895
11. Ahuja M, Pruthi SK, Gupta R, Khare P. Unusual presentation of filariasis as an abscess: A case report. J Cytol. 2016;33:46-8. DOI: https://doi.org/10.4103/0970-9371.175520
12. Sharma A, Sudhamani S, Pandit A, Kiri VM. Microfilariae in Lymph Node Aspirate. Bombay Hospital J. 2012;54:302-3.
13. Mohan H, Bisht B, Goel P, Garg G. Vulval elephantiasis: a case report. Case Rep Infect Dis. 2012;2012:1-3. DOI: https://doi.org/10.1155/2012/430745
14. CDC. Parasites-Lymphatic Filariasis [Internet]. 2019 Aug 30 [cited 2022 Nov 14]. Available from: https://www.cdc.gov/parasites/lymphaticfilariasis/epi.html
15. Chandler DJ, Fuller LC. A Review of scabies: an infestation more than skin deep. Dematology. 2019;235:79-90. DOI: https://doi.org/10.1159/000495290
16. Dolo H, Coulibaly YI, Dembele B, Konate S, Coulibaly SY, Doumbia SS, *et al*. Filariasis attenuates anemia and proinflammatory responses associated with clinical malaria: a matched prospective study in children and young adults. PLoS Negl Trop Dis. 2012;6:e1890. DOI: https://doi.org/10.1371/journal.pntd.0001890
17. Bari FS, Juliana FM, Fatema B, Islam MJ, Mannan MA, Asaduzzaman M. Impact of lymphatic filariasis (LF) on hemoglobin content and anemia: a cross-sectional based study. J Health Med Nurs. 2017;44:30-2.
18. Tenkorang GO, Amewu EKA, Asiedu SO, Kini P, Aglomasa BC, Koranteng K, *et a*l. Poor Nutritional Status Among Human Filarial Lymphedema Patients in Ghana: A Cross-Sectional Study. Res Sq. 2021;1-18. DOI: https://doi.org/10.21203/rs.3.rs-200261/v1
19. Shenoy RK. Clinical and pathological aspects of filarial lymphedema and its management. Korean J Parasitol. 2008;46:119-25. DOI: https://doi.org/10.3347/kjp.2008.46.3.119
20. Fischer PU, King CL, Jacobson JA, Weil GJ. Potential value of triple drug therapy with ivermectin, diethylcarbamazine, and albendazole (IDA) to accelerate elimination of lymphatic filariasis and onchocerciasis in Africa. PLoS Negl Trop Dis. 2017;11:e0005163. DOI: https://doi.org/10.1371/journal.pntd.0005163