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CASE REPORT

A "forgotten" disease entity? Scabies with secondary infection in a housewife: case report

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ABSTRACT

Background: In 2017, scabies was classified by WHO into the *neglected tropical disease list* , with an estimated 455 million annual incident cases. This disease has a high prevalence in many tropical environments with low income sources, especially in the Pacific Island countries. Scabies transmission occurs as a result of skin-to-skin contact and spreads easily in crowded living conditions. **Objective**: This case report aims to describe the risk factor, clinical features, and management of scabies patient with secondary infection. **Case**: A 17-year-old female presented with nocturnal itching on her hands and feet. She rarely washed sheets or dried mattresses. Physical examination revealed multiple erythematous papules, pustules, crusts, and skin erosions in the antebrachii and manus regions. Papules and pustules were also observed in the dorsum pedis regions. The patient was diagnosed with scabies and a secondary bacterial infection. Treatment included topical antiparasitic (ointment 2-4) and sedating antihistamines (CTM) to alleviate itching, along with systemic antibiotics (Amoxicillin) to address the bacterial infection. **Conclusion**: The internal and external risk factors that underlie the development of scabies in this case are the patient's residence in densely populated environment, low level of *personal hygiene*, knowledge level patients who are less about scabies, and low socioeconomic level. The success of scabies management depends on effective therapy and health education about PHBS (Perilaku hidup Bersih dan Sehat).

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Highlights

1. Scabies is one of the global health burdens that mainly affects both under-resourced and developed areas.

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2. The transmission of scabies is mainly through close direct contact, so for successful therapy the whole family living in 1 house must be treated.
3. Primary health services play an important role in the enforcement of skabies disease in terms of diagnosis, therapy, and education communities in the prevention of disease, because the disease is easily transmitted mainly on dense settlement

BACKGROUND

Scabies is an infectious skin condition caused by the infestation and sensitization of a mite known as *Sarcoptes scabei var hominis*. Transmission primarily occurs through direct skin-to-skin contact, and it is important to note that zoonotic transmission does not take place (Anggreni and Indira, 2019; Engelman et al., 2021). *Sarcoptes scabiei* is found in the dermis and epidermis of both humans and animals. The infestation begins when the female mite burrows into the host's stratum corneum, where it lays eggs and goes through stages of larvae, nymphs, and adults (Gilson and Crane, 2022). In 2017, scabies was classified by the World Health Organization (WHO) as a Neglected Tropical Disease (NTD), indicating its status as a tropical disease that often goes untreated or ignored. It is estimated that there are approximately 455 million new cases of scabies each year (Cahyanti et al., 2020; El-Moamly, 2021).

Scabies is highly prevalent in tropical regions characterized by low-income sources, particularly in Pacific Island countries. Its transmission primarily occurs through skin-to-skin contact and is easily spread in crowded living conditions, commonly observed in densely populated settings such as dormitories, prisons, and boarding schools. This disease can cause significant morbidity, especially in individuals with compromised immune systems (Avidah et al., 2019; Lake et al., 2021; Thompson et al., 2021). Failure to treat scabies can lead to complications such as secondary bacterial infections, post-streptococcal acute glomerulonephritis, and inflammation-induced hyperpigmentation or hypopigmentation (Trasia, 2021). Additional complications include impetigo, post-scabietic pruritus, and psychological effects such as distrust, delusions of parasitosis, shame, and guilt (Dewi and Wathoni, 2018). The prognosis of scabies depends on receiving adequate treatment, with complete recovery expected. Without treatment, scabies can spread among community members, resulting in outbreaks (Gilson and Crene, 2022).

OBJECTIVE

The purpose of this case report was to describe risk factor, cinical features, and management of scabies patient with secondary infection.

CASE

Patient Information

A 17-year-old housewife who comes from a densely populated area comes with complaints of itching on both palms and between her fingers and both feet which she has felt since 1 month ago and has worsened in the last 3 days. Initially, reddish spots appeared on both hands and then spread to the patient's feet. Itching is felt especially at night and disturbs the patient's sleep. A few days later, painful, burning sores and pustules on the wrists, backs of the feet, between the toes, and between the fingers of the hands began to develop. The patient said that she had self-purchased medication at the drugstore, but nothing had changed. The patient's 7-month-old child whom was being breastfed also having the same problem,. Both hands and both feet of the patient's youngster itch.

Clinical Findings & Diagnostic Assessment

On physical examination, multiple brownish red papules, multiple pustules, crusts, and erosions were found in the antebrachii region and the right and left manus regions. Multiple papules, pustules, and

erosions were found on the dorsum of the right and left manus. In this patient, no supporting examinations were carried out due to limited equipment at the puskesmas.

Figures 1. Clinical Conditions of Patients and Children of Patients

The condition of the patient's home and home environment, family support for patient treatment and PHBS (clean and healthy living behavior) of the patient and his family.

The patient cohabitates with her spouse and child. Their sleeping arrangement is in the family room, conveniently located near the kitchen and bathroom. The patient receives unwavering support from her family, who provide dedicated care to accommodate her condition. The patient's husband takes an active role in reminding her to take medication and ensuring the child, who shares the same illness, receives appropriate treatment.

The patient was not enrolled in the BPJS healthcare program. The patient and her family are accustomed to carrying out their daily routines within their community. The close proximity of the houses enables the patient to have regular interactions with her neighbours. Regarding indicators of healthy lifestyle, the patient maintains a habit of taking showers twice daily.

The patient and her family have a fixed toilet facility that provides access to clean water supplied by the PDAM. However, when it comes to daily dietary habits, the patient and her family rarely consume vegetables and fruits. Similarly, they have infrequent physical exercise routines. The patient cleans the bathroom once a week and seldom changes the bed sheets. As for housekeeping, the patient tidies up her house every other day. An assessment of the patient's living conditions resulted in a healthy house index score of 1060, categorizing it as an unhealthy house. (Note: Healthy houses typically score between 1068 and 1200 on the index)

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Figures 2. Condition of Patient's Home Environment

Therapeutic Interventions & Outcomes

Patients are given therapy in the form of 2-4 ointments which are applied to the whole body (except for the face) every night for 3 days, then cleaned by bathing. In addition, the patient was also given systemic therapy in the form of a sedative antihistamine, namely chlorpheniramine maleate (CTM) 4 mg which was consumed three times a day to reduce itching, which was especially felt at night. The patient was also given Amoxicillin 500 mg antibiotic therapy which was consumed three times a day for five days because a secondary infection was suspected.

In addition to medical therapy, patients are also educated about scabies and implementing good and correct PHBS, such as washing hands with running water and soap, routinely cleaning house ventilation, opening house windows to improve air circulation and so sunlight can enter, routinely washing bed linen soaked in hot water, drying pillows, bolsters, mattresses, carpets and sofas in the hot sun, not using the same towels as other family members, sleeping on separate beds from other family members to prevent disease transmission.

After 2 weeks of undergoing therapy, the itching experienced by the patient decreased and the pus wounds on both hands and feet of the patient began to dry up. In addition, no new lesions were found in other limbs.

DISCUSSION

Scabies is a zoonotic disease that attacks the skin and is easily transmitted. Scabies easily infects humans by means of skin-to-skin transmission, either directly, such as sleeping together or shaking hands with sufferers or indirectly, such as contact with sufferers' beds and towels. Usually in slums and densely populated areas with poor hygiene and *hygiene it will facilitate transmission.* The habit of patients who do not maintain good hygiene is also a risk factor for patients with scabies (Indramaya et al., 2021).

The diagnosis of scabies is mainly based on the clinical picture. Each individual can have different clinical manifestations. In the history and physical examination of patients with scabies, skin lesions in the form of papules, nodules, and vesicles with tunnels or canaliculi can be found (Marsha, 2020). These skin lesions are found on thin epidermis such as between the fingers, wrists, genitals and breasts (Putra and Jusuf, 2021). Skin complaints accompanied by itching that worsens at night (*nocturnal pruritus*). This incident is caused by the activity of mites which are more active at night (Nanda et al., 2019). The diagnosis of scabies is made on the basis of fulfilling 2 of the 4 cardinal signs, namely nocturnal pruritus, attacking humans in groups, predilection and distinctive morphology, and the presence of mites (Luwito et al., 2022).

This patient has symptoms in the form of itching, especially at night, occurs in a group of people (patient's children experience the same thing), and has a distinctive predilection and morphology so that this patient meets the criteria for scabies. In this patient no investigation was carried out due to limited equipment at the puskesmas so that the diagnosis was made based on the patient's clinical course.

The incubation period for scabies lasts about 4-6 weeks, and can be shorter if the initial infestation is severe. So, the affected person can become a source of infection before receiving treatment. As a result, all family members and other people who share the same living space must also be treated (Korycińska et al., 2015).

In this patient, multiple brownish red papules, multiple pustules, crusts, and erosions were found between the fingers, palms, wrists, and forearms of the patient with lesions mainly located between the fingers. In addition, multiple papules, pustules, and erosions were found on both the backs of the feet and between the patient's toes. In this patient, no tunnel-like lesions were found which are typical for scabies because the intense itching sensation causes the patient to scratch the area causing secondary lesions.

Based on the history and physical examination of this patient, it was suspected that the patient had a secondary infection because secondary lesions were found in the form of multiple pustules, crusts and erosions on both hands, the back of the feet and between the patient's toes which felt sore and hot. This is in accordance with a study conducted by Pertiwi and Hidajat, in their study patients found skin lesions in the form of pustules, well defined, miliary shape, multiple, discrete arrangements, and regional distribution accompanied by crusts and based on these lesions, the patient was suspected of having a secondary infection. Secondary infection is a complication of scabies that can be caused by bacteria. Bacterial transmission can occur indirectly through skin excoriation or directly from mites, this is because mites and scybala contain *Staphylococcus aureus* and group A *Streptococcus* (Sungkar, 2016; Pertiwi and Hidajat, 2022) .

Causative management of this patient is given 2-4 ointment containing 4% sulfur praecipitatum and 2% salicylic acid which is applied to the whole body after bathing for 3 consecutive days because this drug can only kill mites and nymphs but cannot kill eggs so waiting for the eggs to hatch into nymphs takes 3 days. Patients were also given systemic management in the form of Amoxcicilin 3 x 500 mg to treat secondary infections and CTM 3 x 4 mg which is a sedative antihistamine to reduce itching, especially felt at night.

Ointment 2-4 was chosen as a treatment option for patients because the price is relatively cheap and affordable, considering that the patient does not have BPJS. In a study conducted by Inra, which compared the effectiveness of 2-4 ointment and 5% permethrin *cream* for the treatment of scabies, it was shown that 2-4 ointment was more effective in reducing itching than permethrin. Apart from the advantages, the disadvantages of 2-4 ointment itself are that it can cause an unpleasant odor and stain clothes (Inra and Damailia, 2020) .

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In addition to treating patients, the family approach also has an important role in the management of scabies, namely all family members who are in close contact with the patient must be treated simultaneously, then improve hygiene at the household level by educating them to use clean clothes, all clothes, pillowcases, bed sheets , and towels used before treatment are washed with hot water and dried in the sun. Mattresses, carpets, sofas and all items that cannot be washed must be cleaned and dried in the hot sun (Purwanto and Hastuti, 2020). In addition, the patient's family also needs to be given intervention in the form of education about scabies starting from the definition, symptoms, ways of transmission, how to prevent, treatment, and complications that can occur if not treated properly (Pertiwi and Hidajat, 2022). In this study, child patients who were 7 months old who also experienced the same thing also received anti-scabies treatment in the form of 2-4 ointment and powdered drug concoction containing Amoxcicilin, CTM, and Paracetamol. Ointment 2-4 was chosen because it is safe for babies and pregnant women.

Family psychosocial problems, namely the patient feels uncomfortable and insecure in the surrounding environment because he has a skin disease. In addition, the low economic condition of the family also affects the patient's health condition. The patient's husband who works as a construction worker feels that the income he earns is only enough to meet his daily food needs.

Personal hygiene is also one of the triggering factors for the emergence of scabies. This is in accordance with the literature which states that scabies is caused by factors of poor *personal hygiene.* Doing habits such as washing hands, bathing with soap, changing clothes and underwear, not exchanging clothes, washing with shampoo, not exchanging towels and cutting nails, can reduce the risk of getting scabies.

In addition, the physical condition of the patient's home environment also influences the occurrence of scabies in patients. The physical condition of the environment includes many items and clothes that are not neatly arranged in the family room and lack of sunlight. Based on observations at the patient's house, it is known that the patient lives in a densely populated area, the ventilation in the patient's house is rarely cleaned and the windows of the house are rarely opened so that sunlight does not enter the house. Therefore, it causes the room to be dark and seem damp. According to Notoatmojo, a healthy room requires sufficient light, not too little and not too much. Lack of light, especially sunlight will result in discomfort. A house that lacks sunlight is a medium or a good place for germs to live and develop, including scabies.

Follow-up was carried out 2 weeks after the initial treatment, it was found that the patient was in good condition, the pus wound in the patient had dried and complaints of itching had decreased. In addition, there were no lesions on other limbs. The patient's prognosis is good because appropriate treatment has been carried out and the patient is adherent in treatment and the patient does not have other comorbid diseases.

Strengths and Limitations

Clinical manifestation of scabies can vary between each patient, which causes difficulty and dilemma in diagnosis. Secondary infection can also occur in this condition that can complicate the patient’s condition. Simple laboratory examination can help diagnosis, therefore further studies are needed to explore other possibility

CONCLUSION

A case of scabies with secondary infection was reported in a female patient, a 17 year old housewife. The diagnosis in this case was made based on the anamnesis and physical examination carried out and was adjusted to some of the existing literature.

The internal and external risk factors that underlie the development of scabies in this case are the patient's residence in densely populated environment, low level of *personal hygiene* , knowledge level patients who are less about scabies, and low socioeconomic level. The patient's condition improved after being treated with both medical and non-medical therapy according to the principles of scabies

management. Without changes in behavior in the form of a clean and healthy lifestyle and treating all family members who have close contacts, scabies will be difficult to stop and may recur.

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Conflict of Interest

All authors have no conflict of interest whatsoever in this study**.**

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Author Contribution

The author contributed to all processes in this study, including preparation, data gatheringand analysis, drafting, and approval for the manuscript’s publication.

Patient Consent for Publication

This case report has been approved by the patient and his/her guardian.

REFERENCES

Anggreni, P.M.D., Indira, I.G.A.A.E., 2019. Korelasi Faktor Prediposisi Kejadian Skabies Pada Anak-Anak di Desa Songan, Kecamatan Kintamani, Kabupaten Bangli, Provinsi Bali. e-Jurnal Med. Dir. Open Access Journals 8, 4–11.

Avidah, A., Krisnarto, E., Ratnaningrum, K., 2019. Faktor Risiko Skabies di Pondok Pesantren Konvensional dan Modern. Herb-Medicine J. 2, 58.

Cahyanti, K.D., Joko, T., Sulistiani, S., 2020. Factors Associated With Scabies (Literature Study in Indonesian Islamic Boarding Schools). Int. J. Heal. Educ. Soc. 3, 81–96.

Dewi, M.K., Wathoni, N., 2018. Diagnosis dan Regimen Pengobatan Skabies. J. Farmaka 15, 123–133.

El-Moamly, A.A., 2021. 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 49.

Engelman, D., Marks, M., Steer, A.C., Beshah, A., Biswas, G., Chosidow, O., Coffeng, L.E., Dofitas, B.L., Enbiale, W., Fallah, M., Gasimov, E., Hopkins, A., Jacobson, J., Kaldor, J.M., Ly, F., Mackenzie, C.D., McVernon, J., Parnaby, M., Rainimaqaniuci, M., Sokana, O., Sankara, D., Yotsu, R., Yajima, A., Cantey, P.T., 2021. A framework for scabies control. PLoS Negl. Trop. Dis. 15.

Gilson RL, Crane JS. Scabies. [Updated 2022 Aug 1]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2023 Jan-. Available from: https://www.ncbi.nlm.nih.gov/books/NBK544306/

Indramaya, D.M., Yuindartanto, A., Widia, Y., Citrashanty, I., Sawitri, S., Zulkarnain, I., 2021. Treatment and Management of Scabies Patient with Secondary Infection in a 3-Year-Old Girl: A Case Report. J. Dermatology Res. Ther. 7, 1–4.

Inra, N.H., Damailia, R., 2020. Perbandingan Efektivitas Salep 2-4 dan Permethrin pada Pengobatan Skabies di Pondok Pesantren Al-Ashr Al-Madani. Pros. Kedokt. 6, 247–52.

Korycińska, J., Dzika, E., Lepczyńska, M., Kubiak, K., 2015. Scabies: Clinical manifestations and diagnosis. Polish Ann. Med. 22, 63–66.

Lake, S.J., Engelman, D., Sokana, O., Nasi, T., Boara, D., Grobler, A.C., Osti, M.H., Andrews, R., Marks, M., Whitfeld, M.J., Romani, L., Kaldor, J.M., Steer, A.C., 2021. Defining the need for public health control of scabies in Solomon islands. PLoS Negl. Trop. Dis. 15, 1–13.

Luwito, J., Indah Lestari, D., Putri Yulius, C., Putri Liviansyah, M., 2022. Management of Scabies Cases with Secondary Infection in Children through Family Medicine Approach. Sci. Midwifery 10, 4007–4013.

Marsha, Ling, F., 2020. Diagnosis dan Terapi Skabies. Cermin Dunia Kedokt. 47, 104.

Mitha Yunda Pertiwi, Dedianto Hidajat, 2022. Skabies dengan Infeksi Sekunder Pada Sindrom Down. Unram Med. J. 10, 655–660.

Nanda, D., Mayasari, D., Dewi, I., 2019. Penatalaksanaan Holistik Crusted Scabies sebagai Neglected Tropical Disease. Medula 9, 438–444.

Purwanto, H., Hastuti, R.P., 2020. Faktor Risiko Penyakit Skabies di Masyarakat. J. Kesehat. 11, 145.

Putra, I.B., Jusuf, N.K., 2021. Scabies with secondary infection resembling kerion-type tinea capitis. Int. J. Gen. Med. 14,

Surabaya Medical Journal (SMJ IDI Surabaya)
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163–167.

Thompson, R., Westbury, S., Slape, D., 2021. Paediatrics: How to manage scabies. Drugs Context 10, 1–13.

Trasia, R.F., 2021. Scabies : Treatment , Complication , and Prognosis 48, 704–707.