Journal of Pakistan Association of Dermatologists. 2023;**33(3)**:1207-1210.

Case Report

Neglected and inappropriate treatment of crusted scabies: A case series

Geby Khomaro Putri[1], Desica Natalisa S[2], Anna Rumaisyah[3], Leoni Agnes[4], July Iriani Rahardja[5], Fitri Utami[6]

[1] Siloam Hospital Makassar, Indonesia.
[2] Advent Hospital Medan, Indonesia.
[3] Diana Medica Health Clinic Bekasi, Indonesia.
[4] Katholik Terapung Obor Clinic Sampit, Indonesia.
[5] Karya Medika Hospital Bekasi, Indonesia.
[6] Pasundan University Bandung, Indonesia.

Abstract Crusted scabies is a complicated, rare, and highly contagious form of scabies. Frequently seen in malnourished, immunocompromised patients. We reported two cases of crusted scabies. In Case 1, we reported a 9-year-old girl developing crusted scabies after inappropriate treatment as atopic dermatitis and was given oral corticosteroid for a year. In Case 2, we reported a 37-year-old man who presented with loss of consciousness and dyspnea. He was diagnosed with and treated for scabies 3 months back. However, patient did not comply with the treatment course and developed crusted scabies. We want to emphasize the substantiality of proper early diagnosis and effective treatment as well as patient's compliance with the disease.

Key words
Crusted scabies; Scabies; Neglected.

Introduction

Scabies is a parasitic skin condition caused by Sarcoptes scabiei var. Hominis, an obligate parasite. It is estimated to affect around 150-200 million people globally. Scabies infestation occurs more often in low-income and tropical countries. The prevalence is common among infants, children and adolescents. Scabies diagnosis is based on 2020 International Alliance for the Control of Scabies Consensus (IACS) Criteria, confirming scabies requires direct visualization of the mite (adult or immature stages) or its products (scybala).[1]

Address for correspondence
Dr. July Iriani Rahardja
Karya Medika Hospital, Bekasi,
157844, West Java, Indonesia.
Ph: +62817880107
Email: july.rahardja@gmail.com

Crusted scabies is a variant of scabies characterized by thick crusted lesions, extensive hyperkeratosis, and generalized scales that contain *Sarcoptes scabiei var. hominis* in large quantities on the scalp, face, neck, hands, and feet. This variant is highly contagious, but pruritus is typically minimal.[2] Transmission can occur through direct or indirect contact with clothing, bedding, and other infested fomites.[3]

Case report

Case 1 A 9-year-old girl came with chief complaints of generalized pruritus over a year ago. She went to a general practitioner and was diagnosed with atopic dermatitis and received oral dexamethasone once to twice a day for a year as well as topical corticosteroids, the name of which she did not know. The symptoms never improved and the lesions evolved into erythematous papules on the face, scaly plaques

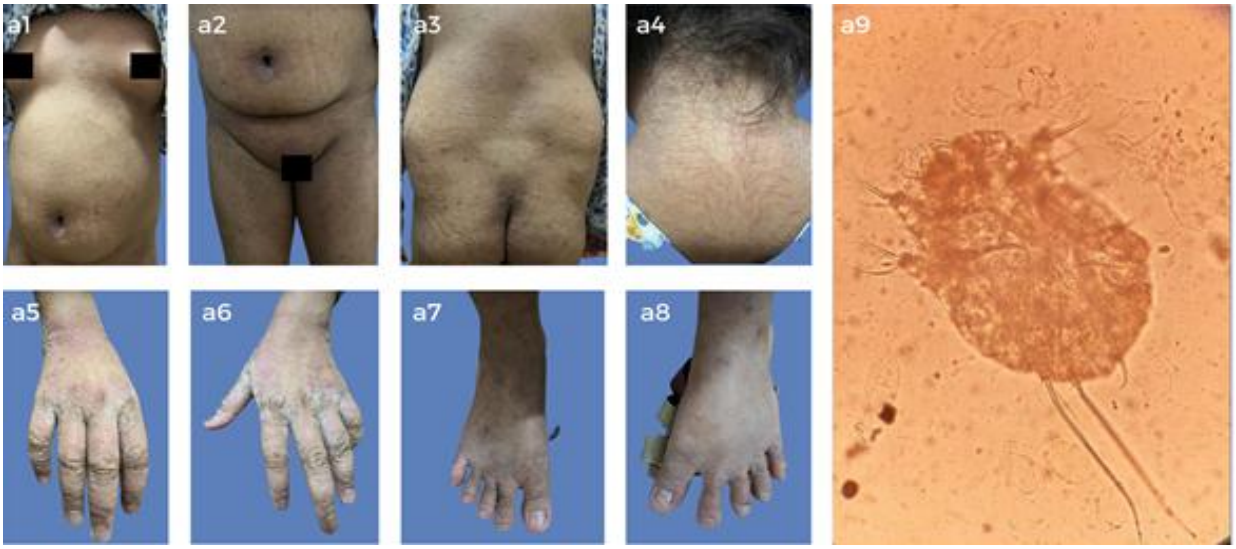

Figure 1 a1, 2, 3) Truncal obesity; a4) Mild hirsutism; a5, 6) Thick, crusted, and hyperkeratotic lesions on the dorsal part of both hands; a7, 8) Erythematous papules on the dorsal part both feet; a9) *Sarcoptes scabiei* mite.

on the back, and swollen face. Her family members also had similar complaints. Physical examination revealed thick, crusted, and hyperkeratotic lesions on the dorsal part of both hands **(Figure 1)**. Cushingoid features such as moon face, truncal obesity, and mild hirsutism were also seen **(Figure1)**. Upon microscopic examination, several Sarcoptes mites were found. The patient was then prescribed 5% permethrin cream along with petroleum jelly applied every day for 8 hours for 1 week and also given salicylic acid 4%. We also educated all family members on whether they had symptoms or not to get treatment. Unfortunately, the patient was lost to follow-up.

Case 2 A 37-year-old man was admitted to the emergency room with loss of consciousness and dyspnea. Initially, he was diagnosed with erythroderma and admitted to the ICU. Upon physical inspection, all parts of the body were covered with thick yellow-green crusts except the face, and onycholysis was identified **(Figure 2)**. Laboratory examination revealed abnormal blood glucose (66mg/dl) and hemoglobin (8g/dl). COVID-19 testing was also performed according to the current regulation for inpatient screening and the results came back negative. A microscopic examination was conducted and parasites were found. Three months ago, he came with complaints of generalized pruritus, especially at night, and was subsequently diagnosed with scabies. Treatment was administered appropriately, and the patient was also instructed to avoid close contact with people at home.

Figure 2 b1, 2, 3) Thick-yellow-green crust on antebrachii and cruris; b4) Onycholysis; b5) Lesions after petrolatum compress; b6) *Sarcoptes scabiei* mite.

Unfortunately, the patient did not return for a follow-up. For the first few days, the primary focus was to stabilize the patient through blood transfusion and blood glucose regulation, and the ivermectin administration was put on hold. Petrolatum occlusive compress was applied to remove crusts. A few days later, the patient received oral ivermectin 12 mg once a day, but after only one administration, the patient passed away due to sepsis on the following day.

Discussion

Crusted scabies is frequent in malnourished people and in patients receiving oral and topical corticosteroids. Its incidence is high in immunocompromised individuals.[2,4] Crusted scabies is commonly misdiagnosed and mistreated initially as psoriasis, eczema, contact dermatitis, or severely dry skin. The patients usually receive prolonged corticosteroid therapy that eventually precipitates the adverse effects.[2,5] To avoid delayed diagnosis, healthcare providers should emphasize history taking, physical examination, and laboratory findings to prevent disease complications.[2]

Scabies treatment is usually neglected and not a priority due to its non-life-threatening nature. However, neglected and inappropriate treatment might result in decreasing the patient's quality of life and in complications such as crusted scabies, impetigo, cellulitis, lymphangitis, and sepsis are caused primarily by Staphylococcus aureus or Streptococcus pyogenes and provoked by scrubbing and scratching.[5,6] Patients with crusted scabies should be isolated immediately until complete regression. Treatments for crusted scabies include systemic and topical treatment.[2,3] Combination treatment comprises oral ivermectin 200 µg/kg, taken in 3 doses (day 1, 2, and 8), 5 doses (day 1, 2, 8, 9, and 15), or 7 doses (day 1, 2, 8, 9, 15, 22, and 29), depending on the severity of the infestation along with topical scabicides (5% permethrin cream, 25% benzyl benzoate lotion) applied daily for 7 days, then two times a week until completely cured.[7,8] The combination of oral ivermectin and a topical scabicide is recommended as the oral medication cannot penetrate into the thickness of the hyperkeratotic debris.[9] Another study said two doses of ivermectin were found to be as effective as a single application of permethrin. Oral ivermectin can also eliminate intestinal parasites, making it useful for patients who are polyparasitised with enteroparasites and ectoparasites.[10] Topical keratolytic agents such as 5-10% salicylic acid or 40% urea can be used to remove hyperkeratotic crusts and enhance the penetration of applied topical scabicides.[2,4] Even though it appears to be a simple treatment, many individuals are unaware of scabies.

The use of corticosteroids that are not controlled in the long term can cause dangerous complications and cause worsening of the disease, especially in cases of infection.[5] In the first case, the patient with scabies was misdiagnosed as atopic dermatitis. The patient was given oral and topical corticosteroid therapy. As a result, side effects occurred in the form of Cushing's syndrome and the worsening of scabies. Health workers of first-level health facilities as the frontline have an important role and need to recognize, diagnose and treat scabies appropriately, and avoid inappropriate use of corticosteroids.[5]

In some countries, including Indonesia, there are limitations in the availability of oral ivermectin.[2] Meanwhile, in addition to the use of combination therapy of oral ivermectin and topical scabicides in the treatment of crusted scabies, the use of two or more topical drugs as an alternative therapy is known to give satisfactory results.[2] Therefore, in the first case, ivermectin was not given as primary therapy and was replaced with 5% permethrin cream as a

scabicide agent and salicylic acid as a keratolytic agent. In the second case, the treatment of scabies was not complete causing the worsening of disease. Factors that influence the success of treatment include proper education from health workers as well as compliance and cooperation of all parties in the prevention and treatment of scabies.[5]

Conclusion

The patients presented with misdiagnosis, improper treatment and poor compliance for months. Therefore, they presented with a rare complication known as crusted scabies. Increasing awareness of scabies is necessary not just for patients, but also for doctors and caregivers so we can prevent scabies from developing into crusted scabies and other complications such as secondary infection.

From this article, the authors hope clinicians learn and acquaint themselves about the importance of early diagnosis and effective medical management (such as effective control, treatment and close monitoring) of patients with crusted scabies.

References

1. Engelman D, Yoshizumi J, Hay RJ, *et al*. The 2020 International Alliance for the Control of Scabies Consensus Criteria for the Diagnosis of Scabies. *Br J Dermatol*. 2020;**183(5)**:808-20.
2. Niode NJ, Adji A, Gazpers S, *et al*. Crusted scabies, a neglected tropical disease: Case series and literature review. *Infect Dis Rep*. 2022;**14(3)**:479-91.
3. Chandler DJ, Fuller LC. A review of scabies: An infestation more than skin deep. *Dermatology*. 2018;**235(2)**:79-90.
4. Aukerman W, Curfman K, Urias D, *et al*. Norwegian scabies management after prolonged disease course: A case report. *Int J Surg Case Rep*. 2019;**61**:180-3.
5. Estrada-Chávez G, Estrada R, Engelman D, *et al*. Cushing syndrome due to inappropriate corticosteroid topical treatment of undiagnosed scabies. *Trop Med Infect Dis*. 2018;**3(3)**:82.
6. Leung AKC, Lam JM, Leong KF. Scabies: A Neglected Global Disease. *Curr Pediatr Rev*. 2020;**16(1)**:33-42.
7. Zhu C, Wohltmann W, Krikoriantz S, *et al*. Exaggerated hyperkeratosis in a nursing home patient. *J Fam Med Primary Care*. 2022;**11(7)**:4051-3.
8. Sardana K, Mathachan SR, Khurana A. Current use of ivermectin in dermatology, Tropical Medicine, and covid-19: An update on pharmacology, uses, proven and varied proposed mechanistic action. *Indian Dermatol Online J*. 2021;**12(4)**:500-14.
9. Maharani CS, Harnanti DV, Mappamasing H, *et al*. Crusted scabies in patients with long-term use of oral corticosteroid with different underlying disease-case series. *Dermatol Rep* 2019;**11(s1)**:8095.
10. Motswaledi HM. Clinical diagnosis and treatment of scabies, a neglected tropical disease. *S Afr Fam Pract (2004)*; 2021;**63(1)**:e1-e6.