

A Missed Diagnosis of a Treatable Rash

Hafizati JAYA ^{1*} and Winsley ROSE ^{1,2}



An 8-year-old boy was admitted to the hospital for intravenous antibiotics for multiple pus-filled lesions on his hands and right knee cellulitis. The figures (**Figures 1a** and **1b**) above show his hands on day 4 of hospital admission. The same findings were also seen on both the axillae, abdomen and both legs. He had a preceding 5-month history of an itchy rash with all seven other household members having been affected in turn within the last 15 months.

What is the diagnosis ?

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Author Details:¹ Department of Paediatrics, and Neonatology, RIPAS Hospital, RIPAS Hospital, Bandar Seri Begawan, Brunei Darussalam.² Department of Paediatrics, Christian Medical College, Vellore, India.***Correspondence:**

Hafizati JAYA

hafizati.jaya@gmail.com

ANSWER: Classic scabies.

Scabies is a contagious parasitic skin infestation caused by the mite *Sarcoptes scabiei* affecting at least 200 million people globally at any one time with a higher prevalence in resource-poor areas and children.¹ There are two clinical variants – classic scabies and the much rarer crusted scabies which occurs in immunocompromised patients.² Diagnosis of classic scabies can usually be presumed based on typical features on history and examination. Here we present a family with a missed diagnosis for over a year.

Two brothers aged 8- and 10- years old with severe secondary bacterial skin infections were admitted to the paediatric ward at RIPAS hospital. On further history, all eight members in the household have had an itchy rash, starting from their housekeeper 15 months ago, followed by the youngest child, an infant, five months after, then their mother, 3-year-old brother, father and 9-year-old sister in the subsequent four months – each about one month apart. The 8-year-old and 10-year-old started to have the same itchy rash within five months prior to admission. The family has sought medical attention several times and had either been prescribed topical steroids or given reassurance for a presumed diagnosis of molluscum contagiosum. The family was enlightened to a diagnosis of scabies only two weeks prior when the boys' cousin who was admitted for an unrelated illness was incidentally diagnosed to have classic scabies. They then purchased permethrin and had their first application. Unfortunately, the 8-year-old and 10-year-old developed intense itch with excessive scratching leading to multiple pus-filled lesions on their hands with the former also developing right knee cellulitis.

On admission, they were both started empirically on intravenous amoxicillin-clavulanic acid. Their pus swabs grew *Streptococcus pyogenes*. On our examination on day 4, both brothers had hyperpigmented papules on both hands and wrists, both axillae, abdomen, and both legs with visible burrows on the toes and the interdigit web spaces with excoriations. Additionally, the 8-year-old had a receding erythema of the right knee with no residual tenderness or swelling, whereas

the 10-year-old had multiple ruptured bullae on both hands with no further oozing of pus. A second simultaneous application of permethrin was prescribed for the family. The brothers were discharged on day 5 on oral amoxicillin-clavulanic acid to complete a 10-day course. With an additional application of permethrin as outpatient, both had fully recovered on follow-up.

Under-recognition of scabies can lead to delayed treatment and complications. Beyond the intense pruritus and sleep disturbance, scabies can result in secondary skin infections caused by *Staphylococcus aureus* and *Streptococcus pyogenes* which increase the risk of both septic sequelae as well as the streptococcal sequelae of glomerulonephritis and potentially rheumatic heart disease.² Thus, increased awareness among doctors is required for timely diagnosis and management.

The diagnosis of classic scabies should be suspected in patients with one or more of the following:

1. Widespread itching that is worse at night, spares the head (except in infants and young children), and seems to be out of proportion to visible changes in the skin.
2. A pruritic eruption with characteristic lesions and distribution (**Figure 2**).
3. Other household members with similar symptoms.

A diagnosis of crusted scabies should be suspected when the following features are present:

1. Thick, crusted, fissured plaques³ (**Figure 3**).
2. Older adult or immunosuppressed patients.

Treatment of classic scabies involves eradication of infestation with either topical (e.g. permethrin) or oral (e.g. ivermectin) anti-scabies therapies, management of pruritus and complications, treating close contacts and implementing environmental measures to reduce transmission and recurrence.²

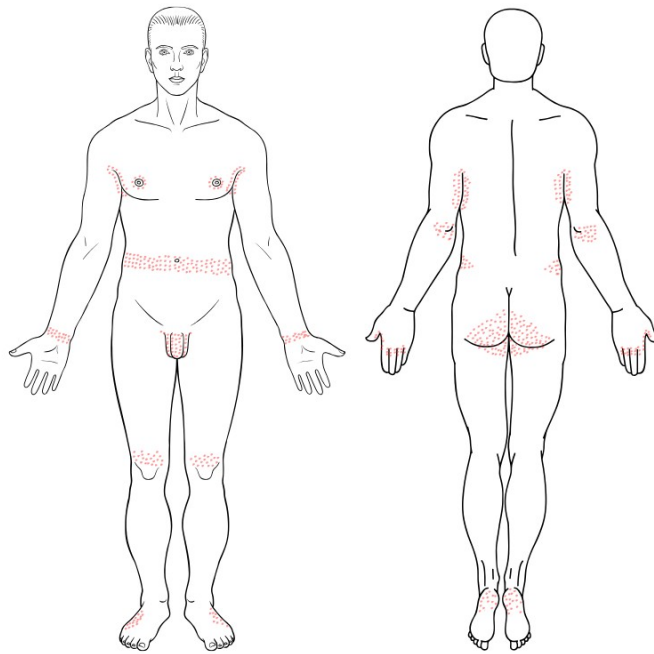


Figure 2: Distributions of areas affected (red dotted zones) by scabies (Illustration by H Jaya).



Figure 3: Crusted scaly lesions over sole of a 4-month-old HIV-positive infant with crusted scabies (Used with permission from *Indian Pediatrics*).³

Declarations

Conflict of interests

The authors declare no conflict of interests.

Consent

Consent has been obtained from the parents for publication.

Acknowledgement

None.

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