

# Scabies icognito

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**Submission date:** 03-May-2019 05:23PM (UTC+0800)

**Submission ID:** 1124163380

**File name:** Scabies\_Icognito.pdf (2.61M)

**Word count:** 1548

**Character count:** 9670

## Scabies incognito

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### Abstract

Atypical appearance of scabies such as chronic excoriation and eczematization of the skin, is frequently found in patients with long-standing infestations. Cases of less impressive scabies are not easily diagnosed, especially when topical or systemic corticosteroids mask the typical itch and inflammation. These cases frequently occur in individuals with good hygiene and are referred as scabies incognito – a diagnosis that can be easily mistaken for other skin diseases. A fourteen-year-old male patient had been irregularly taking systemic corticosteroid for two months due to intermittent papular reaction and itching. Four weeks after treatment with anti-scabiotic therapy, the patient has no complaint of itch and no sign of new papular lesion suggesting that he had scabies all along. It is very important to make a correct diagnosis of scabies incognito because misdiagnosis is associated with serious consequences such as spreading and superinfection of the lesions; this can sometimes lead to life-threatening consequences.

### Introduction

Scabies is a common parasitic infection caused by *Sarcoptes scabiei*. Clinical presentation of its primary infestation commonly appears four to six weeks after infection, presented with generalized itching that gets worse at night. Pruritic papules are classically found in the webs of the fingers, the flexor of the wrists, the extensor of the elbows, the periumbilical skin, the buttocks, the ankles, the penis in males and the periareolar region in females. Number of mites per patient is approximately 10 to 12.<sup>1</sup> Depending on the extent and severity of the inflammatory response, the clinical appearance of scabies varies, but the classical clinical sign for the diagnosis of scabies is the burrow. Atypical appearance, such as chronic excoriation and eczematization of

the skin, is frequently found in patients with longstanding infestations.<sup>2</sup> Cases of less impressive scabies are not easily diagnosed, especially when topical or systemic corticosteroids mask the typical itch and inflammation. These cases frequently occur in individuals with good hygiene and are referred as scabies incognito – a diagnosis that can be easily mistaken for other skin diseases.<sup>3</sup>

### Case Report

A fourteen-year-old male came with the chief complaint of moderate itching that worsened at night. This started eight months ago. At the first examination with previous clinician, he was misdiagnosed; his skin changes were thought to be in relation to an allergic reaction. He was treated with systemic corticosteroid therapy (dexamethasone 0.75mg 3 times a day). During the first month, the skin changes improved and pruritus became less intensive. Unfortunately, whenever the dose of corticosteroid was being tapered, the patient experienced exacerbation. Thus, systemic corticosteroid therapy was consumed irregularly for almost two months.

When he came to our outpatient clinic, the patient still had complaint of moderate pruritus that worsened at night. On physical examination, no papules were seen on his web of fingers, yet multiple erythematous papules were found on the penis and scrotum (Figure 1). Systemic corticosteroid was stopped and he was treated with 5% permethrin cream (single dose application, left on skin for 8 hours). One week later, he came back with a complaint of persistent and intensive pruritus. On physical examination, multiple erythematous papules appeared in almost all over his body (Figure 2). Skin scraping was performed from fresh, non-excoriated burrows on his finger web areas. Direct microscopic examination identified the mite. The patient was treated with repeated anti-scabiotic treatment: 5% permethrin cream, with a combination of 2% salicylic acid and 4% precipitated sulphur ointment (for three consecutive days). This led to a complete resolution of his skin condition. At the follow-up controls after 2 and 4 weeks, he had no sign of new lesions.

### Discussion

Scabies mites reside in the lower-stratum corneum of epidermis, near the stratum corneum/stratum lucidum interface. Intercellular fluid from lower skin zones leaks into the burrows, providing a medium

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Key words: scabies, incognito, corticosteroids, misdiagnosis.

Contributions: Conduct: NH, Reporting: NH, ANH, Editing and Publication: NH, HM, SW, TI, S, EE, DM, SM.

Conflict of interest: Dr. Herwanto has nothing to disclose.

Received for publication: 1 February 2019.  
Accepted for publication: 22 February 2019.

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Dermatology Reports 2019; 11(s1):8083  
doi:10.4081/dr.2019.8083

for soluble antigens from the mite's body and feces to diffuse into the dermis. These soluble antigens will stimulate an inflammatory and immune response. Clinical symptoms of scabies result from a delayed host-immune response toward these soluble antigens.<sup>4</sup> Besides alleviating the itching sensation, steroids can also alleviate local inflammation, which may camouflage the progress of skin lesions. This modified appearance of lesion due to steroids is known as scabies incognito. Due to variable presentations of scabies incognito, this diagnosis can be easily overlooked when examined with only the naked eye, even by the experienced dermatologist. Thus, scabies skin lesions of patients with chronic usage of steroids should always be confirmed with microscopic examination.<sup>5</sup>

Scabies mites have the ability to modulate cytokine secretion and the expression of cell adhesion molecules in skin cells and other cells of the innate and adaptive immune systems, all of which are needed by the mites themselves to survive in the skin.<sup>4</sup> Individuals with scabies react to bites by generating a cell-mediated immune response at the bite site. This elicits a very itchy papule that is often excoriated. Sometimes, ulcerated papules, vasculitis and nodules develop as a result of other immunologic reactions in the skin. Immunologic reactions are mediated by immunoglobulin IgG, IgM, and especially



Figure 1. Multiple erythematous papules were found on his penis and scrotum. No papules on the webs of his fingers.

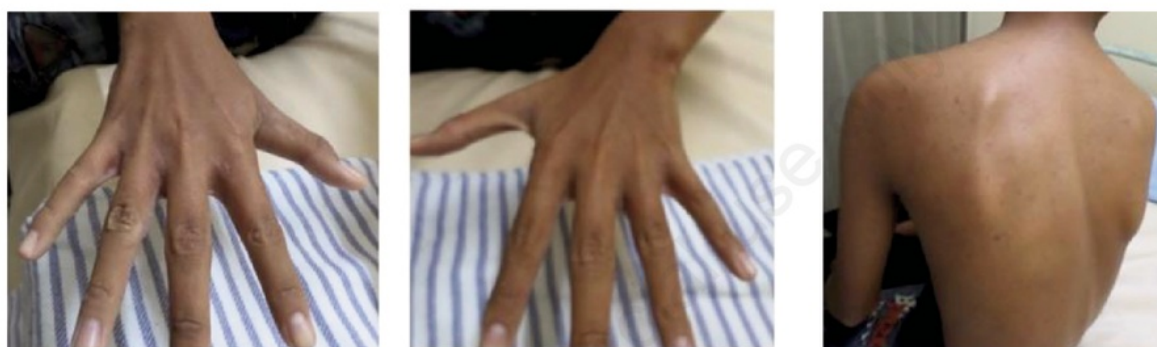


Figure 2. One week after the first treatment and stopping the systemic corticosteroid, multiple erythematous papules appeared in almost all over his body.

IgE classes. None of these reactions has been shown to eliminate all mites from the skin surface, yet may prevent local epidermic multiplication of scabies mites on the skin surface.<sup>6</sup>

Cytokine IL-10 increases significantly in individuals with scabies. This cytokine is able to inhibit the synthesis of the pro-inflammatory cytokines IFN- $\gamma$ , IL-2 and TNF and to stimulate certain T-cells', mast cells', and B-cells' maturation and antibody production. These results suggest that IL-10 may play a role in the human delayed-immune response by depressing the inflammatory and allergic responses, so that clinical symptoms are not seen until four to six weeks after a person becomes infested with scabies mites.<sup>7</sup>

Topical or systemic corticosteroids alter the skin's immune system by reducing the inflammatory response and suppressing cell-mediated immunity in the skin.<sup>8</sup> It has been postulated that immunosuppressant therapy may inhibit the primary immune response.<sup>9</sup> Cortisol decreases macrophage

functions - such as phagocytosing, antigen processing and cell killing - and affects immediate and delayed hypersensitivity. Glucocorticoids impair delayed-type hypersensitivity reactions because of their ability to inhibit lymphocytes and monocytes. The patient had been irregularly taking systemic corticosteroid (dexamethasone 0.75mg three times a day) for two months due to intermittent papular reaction and itching. Four weeks after treatment with anti-scabiotic therapy, the patient has no complaint of itching and no sign of new papular lesions —suggesting that he had scabies all along.

### Conclusions

It is very important to make a correct diagnosis of scabies incognito because misdiagnosis is associated with serious consequences such as the spreading of the infestation and superinfection of the lesions. These can, in turn, lead to life-threatening consequences.<sup>10</sup>

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