

THE SCABIES CASE WITH RE-INFECTION OBSERVED IN HEALTHCARE PERSONNEL LIVING IN THE TENT CITY AFTER THE EARTHQUAKE IN HATAY

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ABSTRACT

Scabies is a disease caused by the parasite called *Sarcoptes scabiei* var. *hominis*, which is invisible to the human eye, is seen mostly in public areas, and is characterized by itchy rashes. It is thought that there are approximately 300 million cases per year in the world. A 23-year-old male patient, working as a healthcare professional, applied to the Dermatology clinic with complaints of itching and skin rash, which continued day and night for approximately three months and became more severe at night. The patient's history was taken, a physical examination was performed, and the patient was diagnosed with scabies. A 5% permethrin solution applied to the whole body every three days, a 1% permethrin shampoo to be applied to the scalp during each bath, a 5 mg antihistamine tablet before sleeping at night, and two doses of 18 mg ivermectin tablets seven days apart were prescribed. The patient, who improved clinically, applied to the clinic a week later due to recurrent complaints and re-infection was observed. The treatment was repeated a second time and a check-up was recommended after two weeks. The patient recovered at the end of the process. In this case report, it is aimed to draw attention to scabies and re-infection, which is a common disease in people living in tent cities after the earthquake.

INTRODUCTION

Scabies is a disease characterized by itching and skin rashes caused by a parasitic mite called *Sarcoptes scabiei* var. *hominis*, which is not easily noticeable to the human eye. It is particularly common during the winter months and is often observed in communal living spaces such as schools, dormitories, nursing homes, and prisons. The causative agent of scabies was first discovered by Bonomo in the year 1687. *Sarcoptes scabiei* is derived from the Greek words *sarcoptes* and *scabie*, originating from *sarx* (flesh), *coptein* (to cut), and *scabere* (to scratch). Scabies is commonly observed worldwide, irrespective of age, gender, race, or socioeconomic level^{1,2}.

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The World Health Organization added scabies to the "neglected tropical diseases and other neglected official diseases" list in 2013 to draw attention and create awareness³. It is estimated that there are approximately around 300 million cases of scabies worldwide annually^{1,2}. According to research, the prevalence of scabies has been found to vary in the range of 0.2% to 71%. Children constitute 5-10% of the reported cases⁴.

Scabies cases are more commonly observed during the winter season due to the increased prevalence of communal living spaces and the ability of the scabies mite to survive longer in cold environments^{5,6}. Particularly worsening during the night intense itching, is the most significant symptom of scabies^{7,8}. The formation of wounds on the body due to itching leads to infection. The presence of pearl-like lesions, the size of a pinhead, containing fluid on the surface of the skin and within the genital area, where female *Sarcoptes scabiei* is also found, is another significant clinical manifestation of scabies. Especially observed between the fingers, raised, line-shaped tunnels (sillons) ranging from 1 to 10 mm in length and grayish-white in color, caused by the scabies mite, are seen on the skin surface. Rashes especially occur in the folded areas of the skin^{9,10}.

In this case presentation, the occurrence of scabies in healthcare personnel staying in a tent camp for three months following an earthquake, the applied two-week treatment process (application

of 5% permethrin solution every three days, use of 1% permethrin shampoo for the head during each bath, antihistamine tablet before bedtime, and 6 tablets of 3 mg ivermectin once a week) resulting in the patient's recovery is emphasized. However, the intention is to draw attention to the reoccurrence of infection in the patient one week later.

CASE REPORT

S.A, a 23-year-old male patient, resides in the Hatay/Antakya region. He is 176 cm tall and weighs 75 kg. For the past 4 months, S.A has been working as a healthcare personnel in a hospital in Hatay. According to the obtained medical history, after the earthquake, S.A stayed with his family in the Hatay/Antakya Expo tent camp center for three months. It was noted that shared toilets and bathrooms were used in the tents.

The patient has been experiencing persistent itching and skin rash complaints for approximately three months. The patient sought treatment at the MKU Faculty of Medicine Dermatology clinic and has been referred to the Parasitology Department laboratory for mite examination from the lesions. During the physical examination, it was observed that the inner side of the wrist (Image 1), inner side of the ankle (Image 2), genital area (Image 3), and chest region had itchy, red, raised, line-shaped whitish lesions, and occasionally crusted lesions.

Image 1. Whitish lesions and rashes observed on the inner side of the wrist



The systemic examinations of the patient were observed to be normal. Particularly, with the history of itching intensifying at night, the physical examination of the patient revealed

pathognomonic lesions, including erythematous rash, redness due to itching, and the presence of tunnels (sillons) on the skin, confirming the diagnosis of scabies for the patient.

Image 2. Crusted lesions and redness observed on the inner side of the ankle



The patient has been prescribed topical 5% permethrin solution, 1% permethrin shampoo, oral antihistamines, and 3 mg tablets of ivermectin. Additionally, information has been provided to the patient regarding scabies, instructions on how to use the medications and lotions have been explained.

Before applying Permethrin 5% lotion, it is recommended to wash the body, then apply the lotion to dry skin, and take a shower again 24-48 hours later. The treatment should be repeated one week later, and improvement is expected within 15 days after the treatment. Family members have been informed to initiate treatment as well.

It has been explained that all clothing and bed linens should be washed at 60 degrees Celsius, dried, and ironed. If items cannot be washed, it is recommended to place them in a plastic bag without air for one week.

The patient has applied the medication as instructed and expressed that they have diligently adhered to the precautions during the treatment process. A few days after completing the treatment, the patient reported a decrease in the intensity of itching that worsened at night. Additionally, there has been a noticeable reduction and improvement in the presence of burrows (sillons).

Image 3. Sillons (tunnels), redness, and crusted lesions observed in the genital area



Image 4. *Redness and lesions observed in the groin area*



Image 5. *Redness and lesions observed in the leg area*



Patient S. A. has completely recovered upon completing the two-week treatment process. There has been no itching or lesions for one week; however, at the end of the first week, mild itching started in the middle of the chest.

Two days later, itching started in the groin area (Image 4), genital region, and on the fourth day, it began on the legs (Image 5), intensifying during the nights. Patient S.A, who returned to the dermatology clinic, narrated the history of the disease. Based on the physical examination conducted at the dermatology clinic and the observed symptoms, a re-infection was determined. The patient was again prescribed the previously used 5% permethrin solution, 1% permethrin shampoo, antihistamine tablets, and 3mg ivermectin tablets. The crucial points to be considered were explained to the patient. After the

two-week treatment, the patient has completely recovered.

DISCUSSION

During the physical examination of the patient, burrows (sillons) were observed. The presence of burrows (tunnels) is pathognomonic for scabies. Diagnosis is typically made based on the severe itching, redness, and characteristic rash experienced especially at night. The presence of itching and similar rash in other family members also supports the diagnosis. In the presented case study, the patient exhibits severe itching at night, along with a typical rash and redness; however, there is no history of scabies in the patient's family.

In scabies, itching, redness, and lesions are more commonly observed in folded areas such as the wrists, spaces between fingers, ankles, and the areas between the genitals and groin¹¹. In the presented case study, similarly, itching, redness, and lesions have been observed in the folded areas, including the wrists and ankles, genital region, and chest region. In a study conducted in Turkey in 2018 and 2019, a significant increase was observed in the number of diagnosed scabies cases and cases of topical resistant scabies. There has been an increase in the number of patients with scabies in our country since 2018. In 2018, 186 patients and in 2019, 805 patients were diagnosed with scabies. Until the year 2018, cases of topical resistant scabies had not been observed in our country; however, the first cases were seen in 2018. In 2018, resistant scabies was observed in 20 patients (13.3%), and in 2019, it was observed in 87 patients (13.14%). The percentage increase in these cases nationwide was 81% in 2018 and 138% in 2019 in Turkey.

The study included a total of 17,803 patients diagnosed with scabies from ten different provinces. Antakya district in Hatay province was one of the areas included in the study, with 2029 patients (11.4%) diagnosed with scabies¹². Particularly after the earthquake centered in Kahramanmaraş, referred to as the Disaster of February 6th, there was a significant increase in scabies cases in Hatay province due to the rise in communal living spaces like tent camps and difficulties in meeting hygiene needs.

Current treatment for scabies involves the use of 5% permethrin, 3 mg ivermectin, and antihistamine drugs. 5% Permethrin induces neurotoxicity in the sodium channels it inhibits, leading to paralysis and subsequently, the death of scabies mites. Permethrin is applied to the entire body, ensuring that no part below the neck is overlooked. It is crucial to repeat the treatment within 7-10 days for a more effective outcome. The initial treatment may not always be lethal to all mite eggs, and the administration of a second treatment will kill mites that have hatched from new eggs.

Ivermectin has been used in the institutional treatment of scabies in France since 2001. The normal dosage range for adults is 9-15 mg, with 1 tablet per 15 kg. A second dose is administered 2 weeks after the initial dose¹³. In our case, patient S.A, weighing 70 kg, took a single dose of 6 tablets and repeated the same dosage the following week.

In Hatay province, after the earthquake on February 6th, many tent cities were established, and people had to live in crowded spaces. Due to the lack of hygiene and infrastructure, and the inability to fully meet basic needs such as bathing and laundry, this situation created a conducive environment for the spread of certain parasitic diseases, especially scabies. In communal living areas like tent cities, attention has been drawn to considering scabies when diagnosing patients with similar clinical complaints and the risk of re-infection after treatment. It has been emphasized that a single-dose treatment may not be sufficient.

Conflict of interest statement

The authors declare that they have no conflicts of interests.

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