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Narrative Review

The Three Most Important Things to Tell Parents of a Newborn/Infant with Scabies

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KEYWORDS

Scabies,
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ABSTRACT

Cases of pediatric scabies are increasing in many countries around the world. The author outlines the main clinical criteria for diagnosis and the most characteristic dermoscopic findings. Finally, he discusses treatment options and the reported increase in cases resistant to topical permethrin therapy.

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Introduction

Scabies is an ectoparasitic skin disease caused by Sarcoptes scabiei varietas hominis, transmitted through direct skin-to-skin contact. Female mites, which are slightly larger (0.3 - 0.5 mm) than males, burrow into the stratum corneum and lay eggs (1). The eggs hatch into larvae within 3 - 4 days, but less than 1% of them develop into adult mites. The female mite's life cycle spans 4 to 6 weeks. Outside the human host, mites can survive for up to 36 hours at room temperature. Scabies is currently a widespread global problem, and the epidemic shows no signs of decline. In developing countries, where healthcare is inadequate and medications are expensive, the disease remains persistent (1, 2).

Clinical manifestations

The clinical symptoms of scabies typically appear about one month after initial infestation. The most prominent symptom is itching, which becomes especially intense at night (Fig. 1). Clinical manifestations include: burrows, erythematous papules, excoriations, nodules (Fig. 2), vesicopustular or bullous lesions, eczema, and secondary bacterial infection (Fig. 3).

Burrows are most commonly found on the hands, particularly between the fingers and on the wrists. Other predilection sites include the soles of the feet, palms, axillae, male genitalia, and the areolae in women. In infants, burrows can also be observed on the scalp, especially in the postauricular folds. Sometimes, there may be nonspecific erythematous papules, extensive excoriations, or nodules, making it difficult to differentiate from other dermatoses (Fig. 4).

Fig. 1. *Itching and scratching.*

Fig. 2. *Burrows, erythematous papules,excoriations and nodules.*

Fig. 3. *Vesicopustular or bullous lesions, eczema, and secondary bacterial infection.*

Fig. 4. *The 'jet with trail' sign and extensive excoriations.*

Diagnosis

Scabies should be suspected in infants or children with recent-onset generalized itching and the characteristic rash. Other family members are usually, but not always, affected.

A detailed history of scabies or contact with scabies should be specifically elicited, along with any reports of itching or itchy skin lesions in family members.

Recent diagnoses of eczema or insect bites in relatives or close personal contacts must be critically evaluated.

The 2020 International Alliance for the Control of Scabies Consensus Criteria criteria define three diagnostic levels representing varying degrees of certainty (3):
- Confirmed Scabies (Level A): The most specific, requiring direct visualization of the mite or its products;
- Clinical Scabies (Level B);
- Suspected Scabies (Level C);

Both based on clinical assessment of signs and symptoms.

Confirmed scabies (Level A) involves the identification of mite products through:

1. Skin scraping and microscopic examination (A1);
2. Non-invasive high-magnification devices such as videodermoscopy and reflectance confocal microscopy (A2);
3. Dermoscopy (A3), which allows visualization of the mite's burrow and the triangular brown spot corresponding to the female mite's head. The burrow is clearly visible as a thin white line known as the 'jet with trail' sign (Fig. 5).

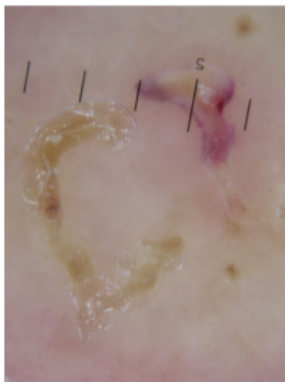

Fig. 5. *The 'jet with trail' sign and extensive excoriations.*

Therapy

Topical Therapy

- Permethrin 5% cream or lotion has long been considered the gold standard treatment for scabies (4). However, recent studies indicate increasing mite resistance to permethrin. Some literature suggests this perceived resistance may be due to improper application rather than genuine resistance (5). Permethrin cream is typically applied at night to the entire body from the neck down, including the scalp and face (in children), left on for 8-14 hours, and then rinsed off. Treatment is repeated for three consecutive nights and again one week later to ensure complete eradication of mites and eggs.Permethrin acts by disrupting sodium transport across nerve cell membranes in invertebrates, interfering with neurotransmission. Less than 2% of permethrin applied to the skin is absorbed and is rapidly eliminated from the body.
- Benzyl benzoate is a good alternative, with effective concentrations of 10 - 15% in children and 20 - 25% in adults. Benzyl benzoate is typically applied at night to the entire body from the neck down, including the scalp and face (in children). It should be applied once daily for 3 to 4 consecutive days, left in place for 12 to 24 hours before washing off. A second course is usually repeated after 7 days. It acts by immobilizing and inhibiting mite reproduction but may cause more skin irritation.
- Sulfur-based preparations (3 - 10% compounded, 12.5% commercial) are commonly used in Turkey for topical scabies treatment (6). A 17% sulfur ointment has been successfully used in Italy for 22 pediatric patients aged 4 months to 17 years, with 100% resolution and no side effects reported (7).

Systemic Therapy

- Ivermectin (0.2 mg/kg orally, taken once, and then repeated after 7 to 14 days) blocks GABA-mediated neurotransmission in parasites but does not readily cross the blood-brain barrier in most mammals, including humans. Its serum half-life is 18 hours and it is excreted renally after hepatic metabolism. Ivermectin is not approved for children under 5 years, pregnant or lactating women, or those under 15 kg (8). A recent retrospective French study on 170 children under 15 kg reported 85% effectiveness with only mild side effects, such as eczema and gastrointestinal discomfort, in 9 patients (9).

Environmental Treatment

-Thorough disinfection of the environment, including bed linens, towels, and clothing used in the past 2 days, is necessary.
- Bed linens and nightwear should be changed and washed at 60°C every morning during the treatment period.
- All clothing worn in the past 2 days should also be washed at 60°C.
- Non-washable items can be isolated in plastic bags for 1 week or kept at temperatures below 10°C (refrigerator or outdoors in winter).
- Steam cleaners with high-temperature output are recommended for treating mattresses, sofas, chairs, and floors.

Causes of Treatment Failure

- Miscommunication between physician and patient
- Poor treatment compliance (e.g., improper use of medications)
- Immediate reinfestation (beware of asymptomatic carriers)
- Negligence in contact tracing and prevention procedures
- Possible resistance of Sarcoptes to the medication used?

The Three Most Important Things to Tell Parents of a Newborn/Infant with Scabies

1. If your child has unexplained itching, consult your pediatrician.
2. Administer the treatment to your child correctly, following the instructions precisely.
3. Ensure all contacts of the child are treated as well.

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