

## Views and Practice

# The diagnostic challenge of infantile scabies

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### Introduction

Scabies is a global health problem affecting more than 300 million individuals annually, with the highest prevalence in children younger than two years.<sup>1</sup> Scabies in children less than the age of two can be a diagnostic challenge with its clinical presentation resembling many other dermatoses. Misdiagnosis may arise due to differences between disease presentations in infants compared with those in older children

and adults. Awareness of these age-related clinical differences, attention to details in the history, together with the use of clinical aids like dermoscopy can help circumvent this problem. We present a case of infantile scabies to demonstrate the diagnostic challenge and the treatment options in this age group.

### Case study

A two-month-old infant was referred to a tertiary hospital paediatric dermatology department for the management of a widespread skin eruption, which started at four weeks of age on the right lower chest wall. The general practitioner diagnosed eczema and treated with a topical steroid and bleach baths without improvement. Lesional polymerase chain reactions (PCR) for herpes simplex virus and varicella were negative.

The infant was otherwise well and thriving. Antenatal and family histories were unremarkable. On examination, there were widespread, erythematous papulovesicles and pustules with scale and crusts affecting the scalp, face, torso, upper limbs, lower limbs, palms, soles and genitalia (Figure 1). The differential diagnoses included atopic dermatitis, insect bite, infantile seborrheic dermatitis, papular urticaria and scabies infestation (Table 1). Dermoscopic examination revealed a delta jet sign, consistent with scabies infestation.

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## Discussion

Traditionally, a definitive diagnosis of scabies is made by visualisation of a mite from a skin scraping under a microscope. However, a microscope is often not readily available, and skin scraping can be challenging to perform on children. Dermoscopy has the advantage of being easily accessible and non-invasive and its use in scabies diagnosis is now considered to be as accurate as microscopic examination.<sup>2</sup> Dermoscopy, particularly of acral sites can help in the diagnosis of scabies by showing a dark brown triangle at the end of a whitish structureless line (Figure 2). This triangle is also known as the delta jet sign,<sup>3</sup> representing the pigmented anterior part of a mite and the structureless line represents the burrow.

The diagnosis of infantile scabies can also be missed if the practitioner is not familiar with the differences

in presentation between adult and infantile scabies. Adult scabies and infantile scabies present differently in their morphologies, distribution, and symptoms. In infants less than two years of age, scabies often presents with axillary or inguinal nodules and with papulovesicles and pustules on the dorsum of the foot, palms, scalp and face.<sup>4</sup> There is often an absence of excoriations because infants have not fully developed the ability to scratch.<sup>5</sup> Infantile acropustulosis can be an aftermath of infantile scabies. In adults, scabies often manifests as pruritic papules and vesicles in the intertriginous areas, finger webs, wrists, side of hands and feet, lateral fingers and toes, and genitalia. The face and scalp are often spared. Nocturnal pruritus and scratching are common symptoms (Table 2).<sup>6</sup>

Topical treatment is the preferred treatment option in infantile scabies. However, there is limited safety data to support the use of any scabies treatment in



**Figure 1.** Widespread, erythematous papulovesicles and pustules with scaling and crusts affecting the scalp, face, torso, upper limbs, lower limbs, palms, soles and genitals.

infants less than the age of two months.<sup>7</sup> Five percent permethrin cream, crotamiton and 5-10% precipitated sulphur ointment have all been used and recommended for this age group, the latter being the most traditionally used.<sup>6-8</sup> The first line treatment in children older than two months of age of two months is 5% permethrin cream.<sup>6,7,9</sup> The parents should be instructed on the importance of treatment and its correct method of application. This includes the face and scalp to prevent treatment failure while taking care to avoid ingestion. Treatment instruction should also address a second application for affected persons and management of contacts and potential fomites. In addition, as scabies is often associated with overcrowding and poverty, local health departments may need to be notified and close follow-up is required to ensure treatment success.<sup>6</sup>



**Figure 2.** Dermoscopic image of a *Sarcoptes scabiei* mite. The black arrow points to the pigmented triangle, also known as the delta jet sign, which represents the anterior part of the mite.

**Table 1.** Differential diagnoses and their clinical features.

Differential diagnoses	Clinical features
Atopic dermatitis	Dry, scaly, erythematous, itchy skin plaques commonly affecting the face, neck, elbows, and knee extensors of infants, later involving flexures.
Insect bites	Red, itchy, clustered papules frequently found on exposed skin.
Infantile seborrheic dermatitis	Scaly and greasy plaques of the face and scalp. Itch is usually minimal except in 'seboatopy' when AD is evolving.
Papular urticaria	Red, oedematous papules or papulovesicles representing hypersensitivity to insect bites
Scabies	An infestation of <i>Sarcoptes scabiei</i> mites with variable hypersensitivity

**Table 2.** The difference in scabies presentation between adults and infants.

	Infantile scabies	Adult scabies
Distribution	Dorsum of the foot, palm, scalp and face	Intertriginous areas, finger webs, wrists, side of hands and feet, lateral fingers and toes, and genitalia. The face and scalp are often spared
Morphologies	Inflamed nodules papulovesicles and pustules	Excoriated papules and vesicles
Symptoms	Absence of excoriation	Nocturnal pruritus and excoriation marks

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