Dermoscopy combined with ink staining as one more method to diagnose nodular scabies

Sir,

Scabies is caused by an infestation of *Sarcoptes scabiei* (*S. scabiei* var. *hominis*). It is important to make a prompt and accurate diagnosis of scabies and to provide appropriate treatment to prevent its spread and avoid unnecessary investigations.[1] Nevertheless, it is easy to misdiagnose during the clinical assessment. In this study, a simple and painless method which involves dermoscopy plus ink staining is applied to observe nodular scabies.

We present the case of a 3-year-old girl with reddish and itchy nodules of 5–6 mm on her trunk and proximal extremities of about 2 months duration. She had been diagnosed elsewhere to have eczema and was treated with hydrocortisone butyrate cream for 15 days. family history revealed that, her mother and grandparents also had itchy papular eruption on the interdigital web spaces of their hands for 1 month. In addition, dermoscopy (FotoFinder Systems GmbH, Bad Birnbach, Germany) showed a typical "jet with condensation trails" and "hang glider sign" (a brown triangle which corresponds to the gnathosoma and the two anterior pairs of forelimbs of the mite) [Figure 1a]. We colored the burrow, used a syringe to add some drops of china ink into the lesions and then removed them with alcohol. As revealed by the results, the burrow had a mite egg and a hyaline mite [Figure 1b]. The girl cried and struggled because her lesions were scraped with small tweezers and further dug. Using microscopic examination, we could only discover a mite egg. The patient was treated with sulfur cream (it was put on all involved parts except the part above the neck) for 3 consecutive days and hydrocortisone butyrate cream for 2 weeks. The lesions darkened and itching was eased. Finally, the diagnosis of nodular scabies was confirmed.

At present, scabies is generally confirmed through the dermatoscopic detection of mites or the microscopic identification of mites, mite eggs or fecal matter (scybala) from skin scrapings.[2] identifying lesions through dermoscopic examination can enhance monitoring clinical response to treatment by observing mites and trails.[3] Because the abdomen and eggs of mites are transparent, they are hardly visible under dermoscopy.[1,2] The combination method of dermoscopy plus ink staining can enhance the yield of the mites and their eggs to evaluate and monitor the progression of scabies, so that the accurate location for microscopic detection or reflectance confocal microscopy can be determined. If the pruritic nodules still persist after antiscabietic therapy and the effect of the above method is negative (failure to see any mites or eggs), we can initiate an anti-inflammatory therapy such as treating with hydrocortisone butyrate cream.

Table 1 compares the existing diagnostic methods of scabies.[1-5] In conclusion, the combination method of dermoscopy plus

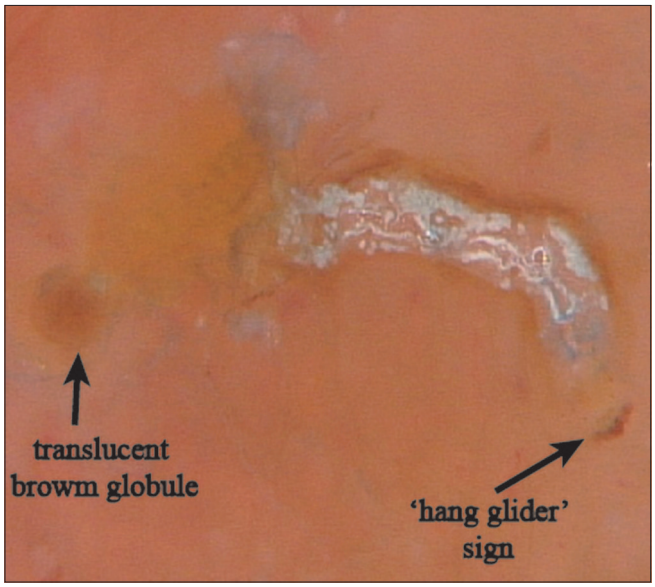

Figure 1a: Dermoscopy showed a typical "jet with condensation trails" and "hang glider" sign (nonpolarized light, ×40). The translucent brown globule is the entrance of mite invasion

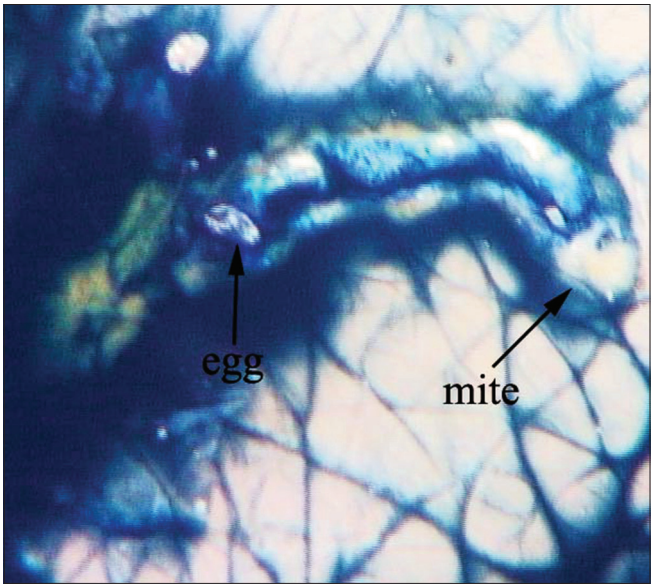

Figure 1b: The burrow showed a mite egg and a hyaline mite after ink staining

Table 1: Comparison of the existing diagnostic methods of scabies

Items	Microscopy	Dermoscopy	RCM	Dermoscopy + microscopy	Dermoscopy + RCM	Dermoscopy + ink staining
Mite	Visible	Visible	Visible	Visible	Visible	Visible
Egg	Visible	Invisible	Visible	Visible	Visible	Visible
Sensitivity	Low	High	Low	High	High	High
Invasive	Yes	No	No	Yes	No	No
Price	Inexpensive	Inexpensive	Expensive	Inexpensive	Expensive	Inexpensive
Required time (min)	5-10	5-10	>10	5-10	>10	5-10

RCM: Reflectance confocal microscopy

ink staining is a painless and simple method for enhancing the diagnosis of scabies as well as detecting response to treatment.

Declaration of patient consent

The authors certify that she has obtained all appropriate patient consent forms. In the form the patient has given her consent for her images and other clinical information to be reported in the journal. The patient understand that their name and initial will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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Nil.

Conflicts of interest

There are no conflicts of interest.

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