

Scraping Versus Videodermatoscopy for the Diagnosis of Scabies: A Comparative Study

Sir,

The standard technique for diagnosis of human scabies is by microscopic examination of scales obtained by skin scraping, using a needle in order to find the female mite in her burrow.

Epiluminescence microscopy allows *in vivo* detection of the mite, and consists of skin lesion observation via stereomicroscope after the application of oil and a slide between the lens and the skin (1, 2).

We carried out a comparative study of scraping vs. videodermatoscopy in 38 patients suspected of being infested with scabies (age range 1 month to 81 years).

MATERIALS AND METHODS

Skin scraping was performed by placing a drop of microscope immersion oil over the lesion and scraping off the epidermis over the suspected site of scabies infestation. The specimen was then placed on a microscope slide and examined by light microscopy.

Videodermatoscopy of the skin was performed using a Video Microscope System Hi-Scope KH-2200 (Hirox Co. Ltd, Suginamiku, Tokyo, Japan) (price approximately US\$15,000 with incident light at magnifications ranging from $\times 4$ to $\times 1000$). The images, captured by a video camera equipped with an optic fibre device, were visualized on a high definition monitor and stored either on a personal computer or on a video recorder.

Both scraping and videodermatoscopy examinations were carried out in each patient by 2 independent operators. Exchange of information was not allowed. The results of both examinations were given to the physician and the patient.

RESULTS

Videodermatoscopy allowed a detailed inspection of the skin with rapid identification of burrows, mites, faeces and eggs in 16 out of 38 patients (Fig. 1). In most cases, it was possible to observe the mites moving inside the burrows. Microscopic examination of the scales obtained by skin scraping gave similar results. Two cases were positive only by scraping this phenomenon was probably due to impetiginization hampering videodermatoscopy.

DISCUSSION

Videodermatoscopy is quick and easy to perform, typically requiring less than 5 min; it is highly specific, with a negligible chance of false positive results, since in most cases it is possible to directly recognize the mite *in vivo*; it is not invasive and it is well accepted, especially by children and more sensitive patients who may have had repeated negative results at skin scraping; moreover, because of its higher compliance, it is particularly suitable for post-therapeutic follow-up, thus

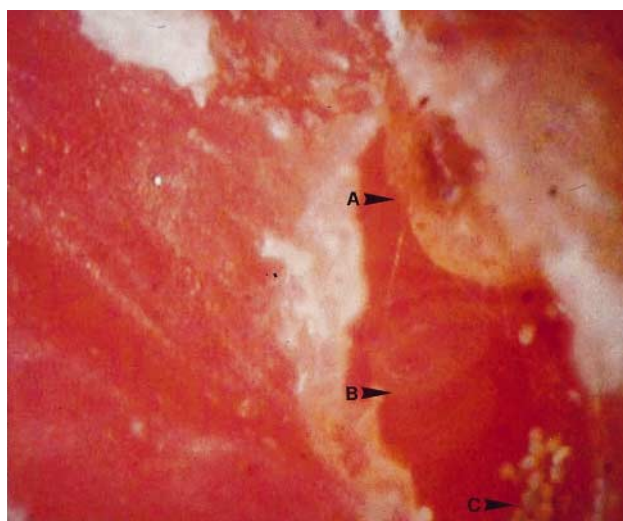


Fig. 1. Burrow observed with incident light using a video dermatoscope (magnification $\times 500$): *Sarcoptes* (A), eggs (B) and faeces (C) are evident.

reducing the risk, in cases of unsuccessful therapy, of persistence and diffusion of undetected infestation; also, this technique considerably reduces the risk of accidental infection from blood transmissible agents such as HIV or HCV; finally, it permits the evaluation of the entire skin surface of the patient, while scraping evaluation is limited to the tested areas.

We recommend its use at high magnifications, up to $\times 1000$. The application of oil to the skin is, in our experience, unnecessary. The diagnosis may therefore be obtained not only by the direct observation of the mite, but also through observation of eggs and faeces, which low magnifications may overlook.

REFERENCES

1. Argenziano G, Fabbrocini G, Delfino M. Epiluminescence microscopy. A new approach to *in vivo* detection of *Sarcoptes scabiei*. Arch Dermatol 1997; 133: 751–753.
2. Brunetti B, Vitiello A, Delfino S, Sammarco E. Findings *in vivo* of *Sarcoptes scabiei* with incident light microscopy. Eur J Dermatol 1998; 8: 266–267.

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Giuseppe Micali, Francesco Lacarrubba and Gaetano Lo Guzzo
Dermatology Clinic, University of Catania, P.zza S. Agata La Vetere,
6, 95124 Catania, Italy.