Case Report: Teledermatology and Epiluminescence Microscopy for the Diagnosis of Scabies

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We wish to share images from a patient seen in our teledermatology program. Due to the absence of on-site dermatology services at the Togus, Maine, Department of Veterans Affairs, and associated community clinics for veterans in Aroostook, Bangor, Calais, and Rumford, we created a program to provide dermatologic expertise from Providence, Rhode Island. Patients referred for this service were evaluated by a nurse practitioner, who obtained a history, performed a physical examination, and captured digital images of the affected area of skin, including epiluminescence microscopic images where indicated. These data were then retrieved at the Providence (host) site and reviewed by a dermatologist, who formulated an impression and plan that was then implemented by the remote site in Maine. This approach, which involves image capture at the remote site and later review of images at the host site, is the "store-and-forward" method, which appears to be a relatively cost-effective means of providing this service from a distance.

Case Report

A 75-year-old diabetic man presented to the Teledermatology program for evaluation of a 6-month history of a pruritic rash that interfered with sleep. Treatments for this condition had included oral hydroxyzine hydrochloride, discontinuation of glipizide, discontinuation of simvastatin, changing soap, changing laundry detergent, Vaseline Intensive Care®, Lubriderm®, over-the-counter hydrocortisone cream, fluocinonide ointment, and quite possibly additional measures. The hydroxyzine was only partially effective in controlling the itch; none of the other measures was at all effective. Review of images at the host site revealed pustules, erythema and scale on hands, and erythematous papaules and pustules scattered elsewhere on the body, with multiple lesions

FIGURE 1. Skin of lower abdomen at initial presentation. *Arrow*, burrow.

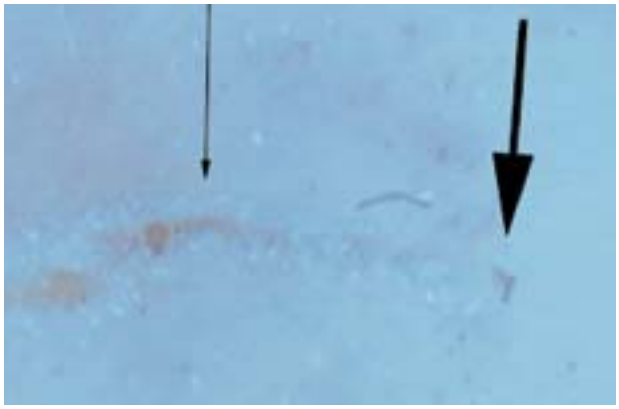

FIGURE 2. Epiluminescence microscopic image (*in vivo*) of burrow (*small arrow*) and mite (*large arrow*).

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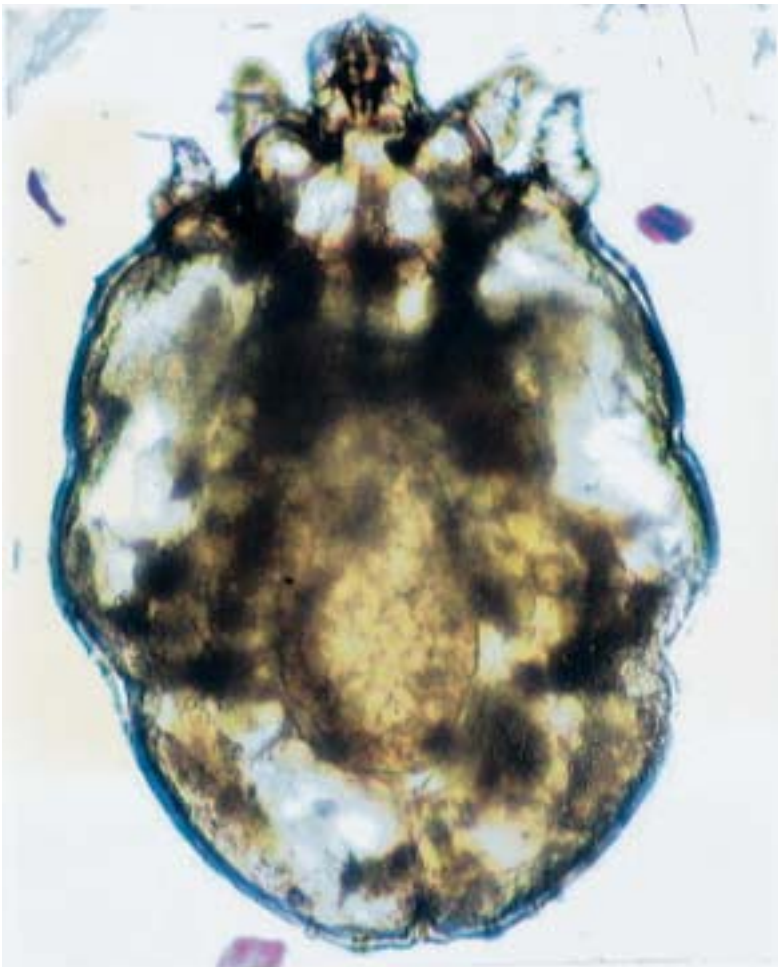

FIGURE 3. Conventional micrograph of a mite from this patient.

suggestive of burrows (Figure 1). The treatment recommended was permethrin for presumed scabies, followed by a regimen of baths, emollients, topical steroids, and antihistamines for symptomatic relief. Due to the presence of pustules growing *Staphylococcus*, the referring primary care provider substituted oral cephradine for permethrin. Two weeks later, the patient was re-evaluated for persistence of the pruritus and rash. The teledermatology nurse was directed to specific lesions imaged for capture of epiluminescence microscopic images.[1] When a mite was visualized (Figure 2), the lesions were scraped onto a glass slide for conventional microscopic evaluation (Figure 3). The direct observation of an actively motile *Sarcoptes scabiei* mite lent credibility to the prior teledermatologic recommendations, which were then implemented and led to substantial resolution of the patient's symptoms and signs.

This case illustrates the use of epiluminescence microscopy for confirmation of the diagnosis of scabies in teledermatologic consultation.

REFERENCE

1. Argenziano G, Fabbrocini G, Delfino M: Epiluminescence microscopy: a new approach to *in vivo* detection of *Sarcoptes scabiei*. *Arch Dermatol* 133: 751-753, 1997.