

Epiluminescence microscopy: A new approach to in vivo detection of *Sarcoptes scabiei* (Article)

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Abstract

Background: The usual methods of scabies diagnosis include microscopic identification of the mites and their eggs and feces in skin scrapings. In many cases, the results of microscopic examination can be negative owing to the low number of parasites present in the cornified layer. Epiluminescence microscopy (ELM) is an in vivo technique that allows a detailed inspection of the skin, from the surface to the superficial papillary dermis. This is where the scabies mite lives. In this study, we evaluate the applicability and the usefulness of ELM for in vivo diagnosis of scabies.

Observations: Sixty-five (93%) of 70 cases of scabies showed small, dark, triangular structures at the sites examined with ELM. A subtle linear segment seen below the base of the triangle was made visible by the presence of small air bubbles. Together, both structures resembled a jet with contrail. On traditional microscopic examination of the scrapings, we verified that the triangular structure corresponded to the pigmented anterior section of the mite in all cases. The linear segment observed on ELM was thought to be the burrow of the mite along with its eggs and fecal pellets. The cases in which the results of a first ELM examination were negative demonstrated positive results on a second ELM examination carried out 20 days later.

Conclusion: Epiluminescence microscopy is a very useful tool for in vivo diagnosis of scabies because it permits *Sarcoptes scabiei* detection in only a few minutes, with no discomfort to the patient and with a very low number of false-negative results.