

Pre-emptive diagnosis of a case of scabies by dermatopathology

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Case presentation

A 39-year-old woman reported to her general practitioner with a new pigmented skin lesion on her right pectoral region. Dermatoscopically there were no suspicious features and the decision was made to monitor it over a three-month period. At follow-up imaging there was some minor change, possibly related to technical factors (the original camera/dermatoscope combination was not available), and after discussion with the patient a decision was made to perform an excisional biopsy. The pathologist reported the lesion as a: "... dysplastic naevus of the compound type" with "... mild atypia and active lymphocytic regression." He made the additional comment: "Two apparent scabies mites are present."

This was not expected, as the patient had complained of no symptoms of scabies and no skin eruption had been observed to suggest that diagnosis.

The patient returned for her routine postoperative review one week after the excision. She now complained of an intensely itchy skin eruption and wondered if she was having an allergic reaction to the local anaesthetic or antiseptic skin preparation solution used at the time of surgery. Examination



Figure 1. Clinical and close-up image of a pigmented skin lesion taken four months prior to biopsy. [Copyright: ©2012 Rosendahl et al.]

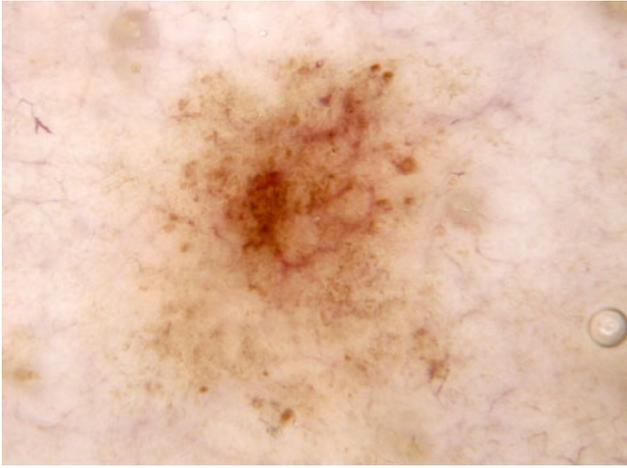


Figure 2. Dermatoscopy image of the pigmented skin lesion taken six days prior to biopsy, [Copyright: ©2012 Rosendahl et al.]

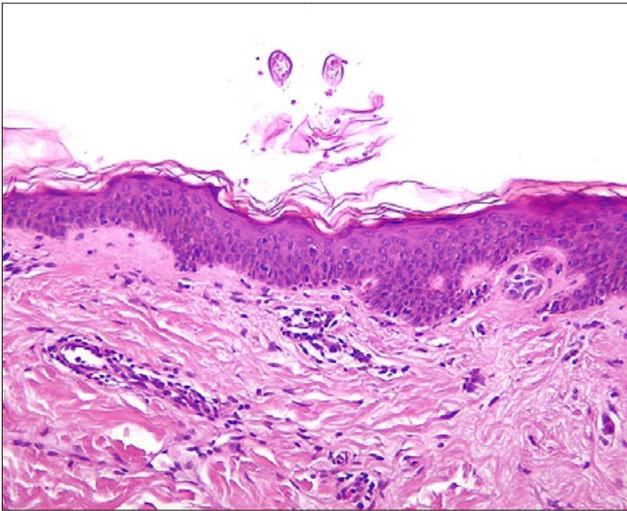


Figure 3. Dermatopathology image of the pigmented skin lesion shown in the previous images showing two apparent scabies mites at the level of the stratum corneum. [Copyright: ©2012 Rosendahl et al.]



Figure 4. Clinical composite of images taken one week after biopsy showing a skin eruption consistent with scabies. [Copyright: ©2012 Rosendahl et al.]

revealed a skin eruption consistent with scabies. Appropriate topical treatment was prescribed and the symptoms and signs of scabies resolved over a period of weeks. The source of infestation was not identified and no household member or other personal contact was reported to have developed symptoms prior, or subsequent to, this case.

Discussion

Scabies infestation is caused by *Sarcoptes scabiei var hominis*, an obligatory human parasite, which spreads from person to person by transmission of fertilised female mites by direct skin contact [1]. A typical infestation involves a stable population of 15–20 adult female mites, which burrow in the stratum corneum where they deposit eggs and faeces [2]. The clinical symptoms of an intensely itchy eruption occur typically after a delay of two to six weeks in the case of an initial infestation and are caused by a host immune response to the mite and its faeces [3].

The diagnosis of scabies can be made either empirically on clinical grounds or with confirmation using skin scraping, the adhesive tape test or dermatoscopy [1]. Because there are other conditions that can cause similar symptoms, the diagnosis of scabies may be delayed, and not only can this occur in general practice but it has been reported in a tertiary facility with access to specialist dermatologist services [4], in a hospital emergency department [5] and in an aged care facility with resulting widespread transmission and extreme economic cost [6]. To avoid transmission and the associated morbidity and cost, accurate prompt cost-effective diagnosis is desirable.

Conclusion

The case reported here occurred in a general practice setting with a patient base of around 5,000, where scabies is diagnosed infrequently, approximately three to four times per year. This low incidence increases the risk of missed diagnosis of scabies, but as long as it is suspected, it can be diagnosed very cost-effectively by the preferred method of author CR, dermatoscopy. This permits an unequivocal diagnosis when the mouthparts of the female mite are seen at the end of a burrow in the skin giving the “jet and contrail” dermatoscopic sign [7]. Examination for this sign can take some time and effort and in this case the need for this was averted by a pre-emptive histological diagnosis. The biopsy for collateral reasons occurred prior to any clinical manifestation of scabies infestation and recognition by the pathologist delivered a firm diagnosis so that the condition was promptly recognised on presentation, diagnosed and treated, minimising the risk of further transmission.

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