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Nodular Scabies Detected by Computed Dermatoscopy

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The typical history of pruritus with nocturnal exacerbation and distribution of the eruption of inflammatory papules is suggestive of a *Sarcoptes scabiei* infestation. However, cases of atypical scabies are frequently lacking classical symptoms and thus often lead to misdiagnosis. Atypical forms may become more common today [1]. An increased awareness and a simple and fast method for the detection of mites are required [2]. We present the case of a pseudolymphoma-like scabies manifestation [3–6], which has led to multiple unsuccessful consultations.

The 50-year-old male patient presented with an 8-week history of pruritic nodes on the trunk and proximal extremities. He consulted his general practitioner and a dermatologist: Due to the suspicion of lichen ruber verrucosus or pseudolymphoma, a biopsy was taken from a pruritic node and the patient was treated with topical steroids. Histopathological examination yielded a dense peri-adnexal and perivascular lymphocytic infiltrate with few histiocytes in the superficial dermis which was less pronounced in the mid and lower dermis. Lymphoid follicles were not seen. The epidermis showed elongated rete ridges. A diagnosis of lymphocytic infiltration of Jessner-Kanof was made.

Since the pruritic nodules persisted under the treatment with topical steroids and new ones developed, the patient was referred to the university department of dermatology. On examination multiple, partially excoriated red nodules with a diameter of approximately 1 cm were found on the trunk, extremities and scrotum (fig. 1). No pathognomonic burrows or typically distributed scabietic papules were present. On further inquiry, the patient reported that his wife also suffered from pruritus. Thus, our differential diagnosis included scabies, and the nodes were examined using computed dermatoscopy at a magnification of $\times 40$ to $\times 70$ (Fotofinder Derma, Teachscreen, Bad Birnbach, Germany). On top of most of the nodes, the typical 'jet with condensation trails' structure was identified, corresponding to the triangular pigmented anterior section of the mite and the burrow filled with air bubbles, eggs and faecal pellets (fig. 2a, b). The presence of *S. scabiei* mites was confirmed by microscopy of a shave biopsy of the stratum corneum. Histopathology of a punch biopsy of a node containing a dermatoscopically visible mite showed a slightly acanthotic epidermis and a burrow with empty and embryo-containing eggs beyond and within the parakeratotic stratum corneum.



Fig. 1. Erythematous, partially excoriated nodes on the abdomen resembling pseudolymphoma.

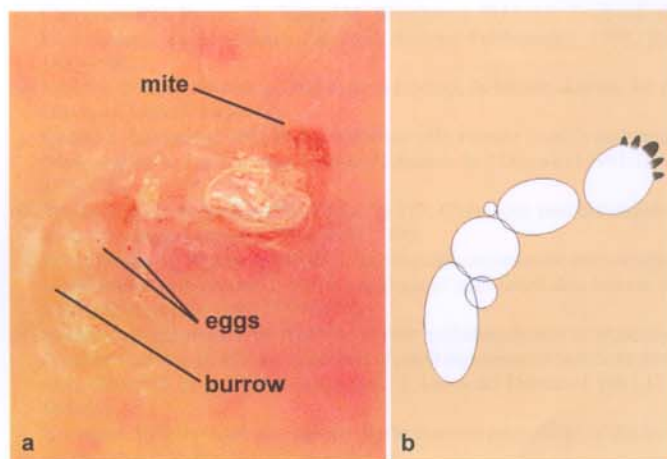


Fig. 2. a Computed dermatoscopy showing a typical 'jet with condensation trail' (Fotofinder Derma, Teachscreen, Bad Birnbach, Germany). Magnification $\times 70$. **b** Pictogram exemplifying the dermatoscopic image.

There was a dense lymphomononuclear inflammatory infiltrate throughout the dermis resembling a pseudolymphoma, which showed a diffuse pattern in the papillary dermis and an angiocentric, folliculocentric and neurocentric pattern in the mid to lower dermis (fig. 3).

Since the patient presented with extensive skin involvement and large nodular reactions, we started to treat him and his wife with

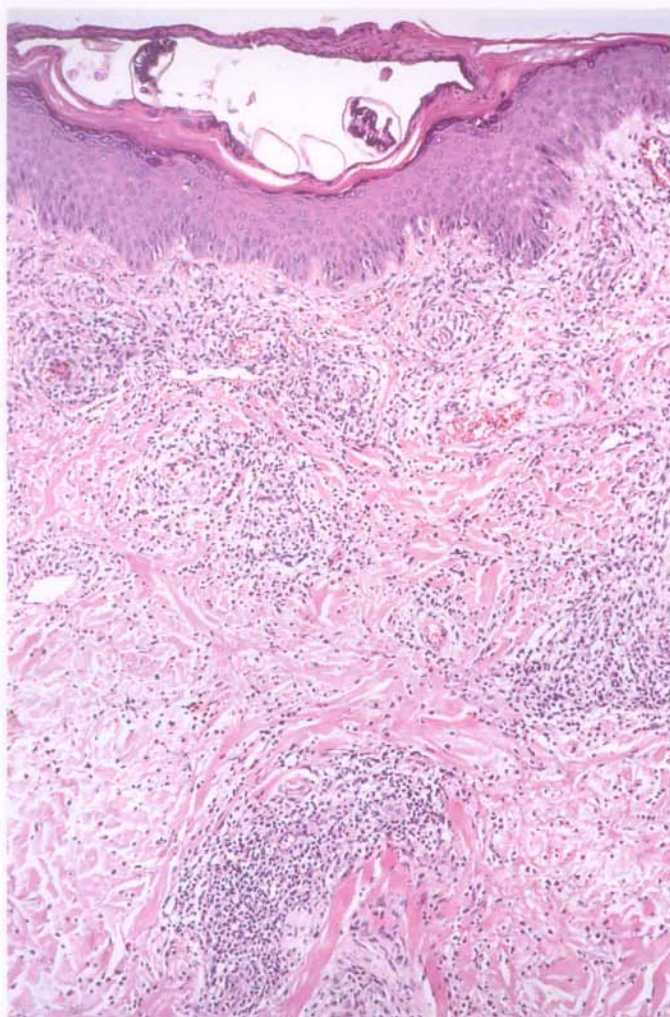


Fig. 3. Histopathology resembling pseudolymphoma. Below the stratum corneum, a burrow of *S. scabiei* is transected showing empty and embryo-containing eggs. Original magnification $\times 250$.

200 $\mu\text{g}/\text{kg}$ body weight ivermectin on days 1 and 7, and 50 mg oral prednisolone was administered daily for 1 week. Following this, the nodes were treated with external steroid solution. The intense pruritus ceased after the first dose of ivermectin and the nodes slowly resolved within the following month.

Dermatoscopy has been proven to be a fast, sensitive and specific method for the assessment of pigmented skin lesions [7, 8]. Since dermatoscopy allows a detailed inspection of the skin surface down to the superficial papillary dermis, it has been suggested as a method for the detection of *S. scabiei* in vivo [9]. The typical 'jet with condensation trails' pattern has been shown to be very sensitive (93–100%) and specific (100%) in two large series of scabies patients [2, 10]. Dermatoscopy permits the rapid, non-invasive examination of many suspicious sites without causing pain or discomfort to the patient and it is especially suitable for the detection of mites in cases of atypical scabies such as the one presented here, where no typical burrows or papules could be found. The ease of use allows to search for mites

even in cases of low suspicion of scabies and it can therefore avoid the frequent phenomenon of multiple consultations [10]. Since computed dermatoscopy allows up to a 70-fold magnification of the dermatoscopic image, it is presently the most sensitive and specific diagnostic method for the detection of scabies. At present computed dermatoscopy is already used in about one third of private dermatological practices in Germany. Experienced investigators can also perform the examination with a simple and cheap handheld dermatoscope at a magnification of $\times 10$ showing mites as typical small brown pigmented triangular structures.

As the patient presented with widely distributed hyperergic nodular reactions, we decided to treat him systemically with ivermectin. Several authors reported ivermectin to be superior to local scabicides [11–13]. Mainly two reasons were important for the decision to use ivermectin: the oral application allows for complete treatment of the whole body, and a single dosage is sufficient and problems with patient compliance are avoided [12]. However, a recently published Cochrane review stated that two trials assessing the effectiveness of oral versus topical treatment (ivermectin vs. benzyl benzoate) in scabies were too small to demonstrate superiority of ivermectin treatment [14].

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