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LETTERS TO THE EDITOR

Lupus Vulgaris in a Skin Graft

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Sir,

Over the past few decades cutaneous tuberculosis has been rare in western countries. Recently, however, the number of new infections has increased, even in prosperous countries. The underlying reasons seem to be resistant strains, HIV-induced immunodeficiency and social factors such as immigration (1). Physicians should therefore consider cutaneous tuberculosis as an important, though rare differential diagnosis. We report on a patient with lupus vulgaris manifesting in a skin graft on her nose and summarize the difficulties that may arise in culture – as well as molecular detection of *Mycobacterium tuberculosis* in skin biopsies.

CASE REPORT

An 80-year-old woman had developed a skin tumour of unknown aetiology on her nose 40 years ago. After surgery, the patient had a skin graft. In 1988, she noticed a partly hyperkeratotic erythema close to the transplant area. A basal cell carcinoma was diagnosed, surgically removed and covered by a rotation flap. Six years later the patient presented with a red, partly papular infiltration with subsequent ulceration in the area of the transplant. Pseudolymphoma or a sarcoidosis was suspected and a biopsy was taken. Histopathology revealed characteristics of both superficial lichenoid dermatitis resembling lupus erythematosus and a strong granulomatous infiltrate reaching the dermo-epidermal interface compatible with granulomatous rosacea. Anti-inflammatory treatment with topical and intralesional corticosteroids induced resolution for almost one year. The lesions then returned and radiotherapy (Dermopan®, single dosage 4 Gy twice weekly in a total dosage of 40 Gy) was performed, inducing full recovery. Six month later the patient developed erythematous infiltrated lesions in the previously irradiated area (Fig. 1*a*). This time, the histopathology showed a granulomatous infiltration mainly of the upper dermis with many giant cells but no signs of necrosis. Besides sarcoidosis, tuberculosis was now taken into consideration. Immunohistochemistry (data not shown) revealed a mononuclear infiltrate of macrophages (CD68+) and T-lymphocytes (CD3+). Intradermal tuberculin skin testing was positive. Further anamnestic enquiry revealed pulmonary tuberculosis during childhood. Chest radiograph was regular.

A biopsy specimen taken from the lesion was homogenized in phosphate buffered saline. Following acid-fast smear staining, cultures were set up on both Loewenstein Jensen and Stonebrink solid media (HAIFA, Heidelberg, Germany) as well as in MGIT 7H9 liquid medium (automated culture system, Becton Dickinson, Heidelberg, Germany), at 37°C and 30°C. A portion of the homogenized sample was taken for DNA extraction (using Qiagen columns, Qiagen, Hilden, Germany). Amplification of a 123 bp fragment from the insertion element IS6110, specific for the *M. tuberculosis* complex was carried out following a modified protocol published earlier (2). Specificity of amplification was ensured by subsequent hybridization to an internal DNA probe in a PCR ELISA kit supplied by DiaSorin (Saluggia, Italy) (3).

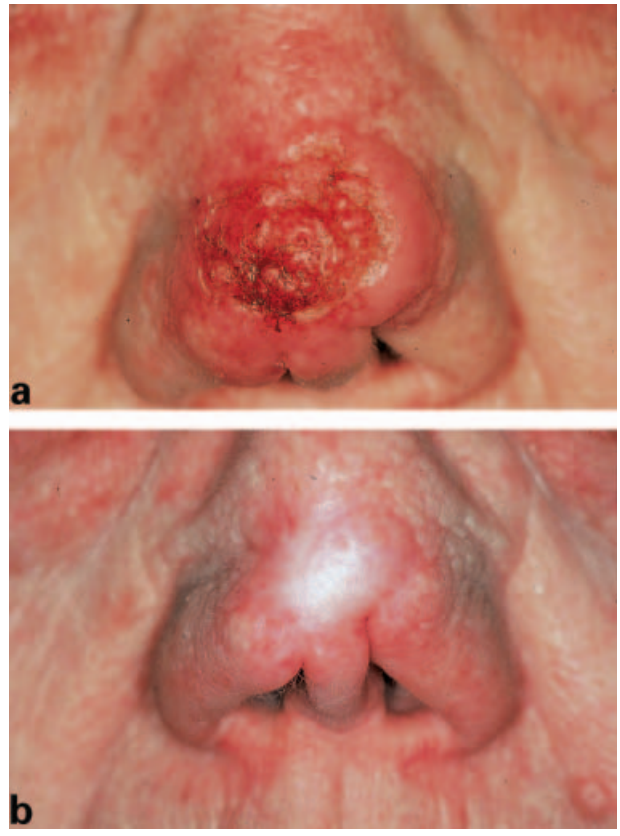

Fig. 1. Lupus vulgaris manifesting as a red papular infiltration with a shallow ulceration of the nose (*a*) and a thin, wrinkled scar 6 months after initiation of the tuberculostatic chemotherapy (*b*).

The culture remained negative after 8 weeks of incubation and was therefore reported to be negative with respect to the presence of mycobacteria. Amplification of the IS6110 fragment was not observed, although DNA extraction was shown to be successful. Since sarcoidosis (lupus pernio) was suspected as a possible adverse event of surgery, contact cryotherapy was started with 4 sessions at 20 s each, resulting in resolution of the infiltrated lesion. After 6 months the patient had a relapse. Histopathology revealed a granulomatous infiltration with epithelioid cells comparable to the previous investigation. PCR for mycobacteria again was negative. This time cultures were positive for *M. tuberculosis* and lupus vulgaris was diagnosed. Susceptibility testing revealed that the isolated *M. tuberculosis* strain was fully susceptible to the drugs tested. A treatment with isoniazid (5 mg/kg), rifampicin (10 mg/kg) and pyrazinamid (25 mg/kg) once daily was started (4). Within 3 months the lesions resolved completely (Fig. 1*b*). Apart from minor nausea, no side effects were observed.

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DISCUSSION

Cutaneous tuberculosis has a wide clinical variability and the clinical and histological similarities to other inflammatory skin diseases may pose difficulties concerning differential diagnosis when mycobacteria detection is not successful (5–7). Lupus vulgaris is the most common postprimary type of cutaneous tuberculosis, which is often destructive and has a prolonged course. The morbidity is about 50,000 per year, especially in India and East Asia (8). Children are often affected (9). Lupus vulgaris is typically located in the fingers, toes or face. Especially when located in the face, differentiation between lupus vulgaris and other granulomatous diseases such as sarcoidosis, granulomatous rosacea and demodicosis is difficult (6).

In our case, *M. tuberculosis* was finally detected by culture and not, as expected, by PCR. After a course of tuberculostatic treatment, the lesions resolved (4). Tuberculostatic therapy should therefore be considered before culture of a skin biopsy specimen is finished in cases where clinical symptoms strongly suggest lupus vulgaris.

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