

A Long-lasting Verrucous Plaque on the Hand Revealed as Tuberculosis Cutis

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Sir,

Tuberculosis verrucosa cutis (TVC) is a rare form of cutaneous tuberculosis due to inoculation of mycobacterium tuberculosis (MT) into the skin of a subject with relatively high degree of immunity. We report here the case of a man with a long-lasting hyperkeratotic, verrucous plaque on the back of his left hand, the nature of which had remained undiagnosed for up to 56 years.

CASE REPORT

A 74-year-old man was referred because of a long-lasting dermatosis involving the back of his left hand. He underwent a nephrectomy in 1994 for a clear cell carcinoma of the left kidney. The skin lesion had appeared as a small brown-reddish ulcerated nodule at the site of a minor trauma in 1944, when he was a prisoner in a Nazi concentration camp in the former East Germany. Despite multiple topical treatments, including corticosteroids, antibiotics and emollients, the initial lesion had slowly centrifugally extended, ending in a large, verrucous plaque. Clinical examination revealed an infiltrating, oval, erythematous-violet plaque, measuring 6×12 cm in diameter, with a hyperkeratotic and warty surface (Fig. 1). No regional lymphadenopathy or extracutaneous involvement were detected. Abnormal laboratory findings included the following: red blood cell count $4.1 \times 10^{12}/l$ (normal range 4.5–6.5×10¹²/l), erythrocyte sedimentation rate 42 mm/h (0–29 mm/h), creatinin 2 mg/dl (0.6–1.4), uric acid 11 mg/dl (3.5–7.2) and triglycerids 215 mg/dl (40–160). Other routine laboratory values were normal.

Chest X-ray was normal and abdomen ultrasound examination revealed only a mild sclerosis of liver tissue. The Mantoux test with 5 IU of tuberculin protein purified derivative was strongly positive (>25 mm in diameter) after 48 h.

Three biopsy specimens from lesional skin were performed for histopathologic examination, mycobacterial and polymerase chain reaction (PCR) examination.



Fig. 1. Hyperkeratotic and warty plaque of the back of the hand.

Histopathology showed marked hyperkeratosis and acanthopapillomatosis. A dense lymphocytic infiltrate surrounded small aggregates of histiocytes and few multinucleated Langhan's type cells. There was no caseation necrosis. The Ziehl-Neelsen stain did not reveal any acid-fast bacilli and no MT-DNA was detected by PCR. Mycobacterial culture performed using Middlebrook 7H9 solid medium showed the growth of small whitish-yellowish colonies which were identified as MT complex using a specific DNA probe. The isolated strain was sensitive *in vitro* to rifampicin and streptomycin but resistant to isoniazid and ethambutol. We decided to treat the patient with rifampicin 600 mg/day and ciprofloxacin 500 mg/day. After a month of treatment, an evident improvement of the skin lesion was noted and after 8 months of therapy the only findings were an erythematous, well-demarcated, slightly infiltrating plaque.

DISCUSSION

TVC represents a virulent exogenous infection of the skin in patients with a fairly high degree of immunity already sensitized to MT complex (1). The inoculation of mycobacteria into the skin generally occurs through minimal wounds or abrasions and the most frequently involved sites are hands, buttocks and feet (2). For professional reasons, butchers, forensic scientists and pathologists are most often affected (3). The disease is now rare in Western countries. Skin involvement usually consists of a single lesion presenting as a verrucous plaque with an inflammatory border and showing progressive, slow peripheral extension. The verrucous surface often has fissures from which a purulent material is discharged. The lesion sometimes undergoes a centralized regression, leaving a whitish atrophic scar. Regional lymphadenitis is rare (4). On histologic examination, hyperkeratosis, acanthosis and papillomatosis are seen in the epidermis. The presence of granulomatous infiltrates is a cardinal sign. In TVC, which together with lupus vulgaris represents the paucibacillary form of cutaneous tuberculosis, direct microscopy with special stains for acid-fast bacilli (Ziehl-Neelsen) and cultures may give negative results. In such cases confirmation of a tubercular etiology is often supported by the improvement with antitubercular drugs (5).

In the case reported here, the positive culture for MT gave strong support to the diagnosis, together with histopathological and clinical data. This is quite a rare finding, since tissue cultures from paucibacillary forms of cutaneous tuberculosis usually give negative results, as reported by most authors (6–8).

The role of PCR in the diagnosis of TVC is still uncertain, although according to some authors the detection of MT by PCR is highly sensitive and specific (9–11). However, a recent retrospective study based on PCR detection of MT complex using routinely processed skin biopsy specimens from patients

affected with different forms of cutaneous tuberculosis seems to support the idea that PCR method is not useful in the diagnosis of TVC and lupus vulgaris (12).

Differential diagnoses include warts, keratosis, lichen planus, verrucae, atypical mycobacteriosis, bromoderma, sarcoidosis and tertiary syphilis (3, 5).

Polychemotherapy is necessary to avoid relapses and the appearance of resistance to antitubercular drugs (13). A combination of isoniazid and rifampicin along a 6-month period together with ethambutol and pyrazinamide during the first 2 months is highly recommended. In our case, because of isoniazid and ethambutol resistance, a combination of rifampicin and ciprofloxacin was given for 8 months, achieving an important regression of the skin lesion. Fluoroquinolones have proved to be highly effective in the treatment of tubercular infections as well as in atypical mycobacteriosis caused by mycobacteria resistant to currently used specific antitubercular drugs (14).

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