Case Report. Disseminated tinea of the verrucous type due to *Epidermophyton floccosum*

Fallbericht. Disseminierte Tinea vom verrukösen Typ verursacht durch *Epidermophyton floccosum*

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Key words. *Epidermophyton floccosum*, tinea, verrucous hyperplasia, ketoconazole, antymycotic chemotherapy.

Summary. A case is presented of an 8-year-old boy suffering from disseminated verrucous lesions with some purulent drainage on his right foot, shank, thigh, scrotum, penis, perianal area and abdomen. *Epidermophyton floccosum* was isolated from these lesions. The patient was treated with oral ketoconazole for 4 months and the lesions resolved completely. There was no evidence of relapse during a 12-month follow-up.

Introduction

*Epidermophyton floccosum* is an anthropophilic dermatophyte found in the tropics and subtropics. It attacks only the skin and nails but not the hair. No perfect sexual state has been found for this species until now. In China, it is the third most common dermatophyte, usually causing tinea pedis, tinea cruris and tinea unguium. Here, we describe a rare case of disseminated verrucous lesions caused by *E. floccosum* in an immunocompromised patient. It is first case reported in our country.

Case history

An 8-year-old schoolboy from a rural area of Jiangshu Province, was referred to our hospital, because of verrucous lesions that had been present on his leg for 7 years. The lesions initially occurred on his right heel and spread to involve the entire lower extremities. The patient had no fever and there was no tenderness in the lesions. A physical examination revealed that the skin lesions were primarily distributed on his feet, left leg, thigh, groin, perianal area, penis and lower abdomen (Figs 1–5). Most were brownish verrucous patches, markedly elevated with their surface being 0.3–0.6 cm higher than the normal surrounding skin. Some patches presented with pyecchysis, some were covered with thick crusts and some had a dry and pedunculated surface. The lesions on the thigh and groin were mainly
annular in shape, with well-demarcated borders consisting of dark-brown papules and patches. The painless lesions had an unpleasant smell and the right groin lymph nodes were slightly swollen but with no tenderness. His body temperature was not elevated. The hair and eyebrows of the patient were partially lost. We observed a friable consistency of the toenails, a dark-green mass and subungual hyperkeratosis, with a loss of lustrous appearance.

Laboratory investigations revealed that the full blood count, routine urine test and blood biochemistry examinations were all normal. However, the serum immunoglobin A level was $670 \text{ mg l}^{-1}$ (normal range $710 \sim 3350 \text{ mg l}^{-1}$), and the result of a lymphocyte transformation test (PHA) was 45%; both of these values being lower than normal. Microscopic examinations after potassium hydroxide preparation of the crusts, pus, scales of the lesions on his leg, scrotum and abdomen as well as debris of the toenail showed a lot of septate hyphae. Three separate mycological cultures from these specimens each revealed fungal colonies that were powdery with numerous radiating furrows and of a greenish-yellow colour. Microscopically, large clavate, multisepate, smooth thin-walled macroconidia were observed, and no microconidia had developed. On the basis of these characters, *Epidermophyton floccosum* was identified [1], and established as the causative agent.

At the beginning of treatment, the patient was given 100 mg per day oral ketoconazole. After 2 weeks of treatment, the lesions gradually dried and the smell disappeared. One month later, no hyphae were found in any specimen by KOH preparation examination, the fungal cultures showed no growth and no adverse effects of the drug were observed in the patient. Blood cell count and the serumal hepatic enzyme level were both normal. To improve the effect, the patient was given ketoconazole at the increased dose of 200 mg daily. After 4 months of treatment, all lesions were resolved except those of the fingernails and toenails (Figs 6,7). Routine blood, urine and liver function tests were normal. There was no evidence of relapse during 12 months of follow-up.

Figures 1 Disseminated verrucous tinea due to *Epidermophyton floccosum* in an immunocompromised 8-year-old boy: verrucous lesions on both of legs and heels.

Figures 2. Brownish verrucous lesion on the right leg.
Discussion

In our survey of 24 094 cases of dermatophytosis (1949–85), isolations of *E. floccosum* in the Shanghai area accounted for 3.42% of dermatophytes. The most frequent clinical presentations of *E. floccosum* infection are tinea pedis, tinea cruris and corporis and deep tissue infection is rare. Deep infections due to *Trichophyton rubrum* [2, 3], *Trichophyton violaceum* [4] and *Microsporum audouinii* [5] had previously been reported in immunocompromised cases. Sedden [6] reported an immunocompromised case of Behcet’s syndrome, which presented with enlarged painful nodules on the lower legs caused by *E. floccosum* infection. It was noted that the hair and eyebrows of our patient were partially lost, and the level of serum IgA and lymphocyte transformation was also lower than normal. This is an indicator that *E. floccosum* should be considered as a potential cause of disseminated infection in patients with immunodeficiency. Ketoconazole was effective against this dermatophytosis without causing clinically adverse effects in our patient. It was highly effective in rapidly alleviating the inflammation and resolving the lesions in our case. He also had a good tolerance and was completely cured after 4 months of treatment.
References


