Tinea barbae

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SUMMARY

Tinea barbae is a rare dermatophtytosis localized on the bearded areas of the face and neck. This fungal infection is caused by both zoophilic and antropophilic dermatophytes. Pathogenic dermatophytes can be found worldwide, but are most common in tropical climates. Tinea barbea can mimic many other skin disorders and be easy misdiagnosed. Due to diagnostic problems basic mycological examination is essential in all cases.

Introduction

Tinea barbae is a rare dermatophytic infection that is limited to the bearded areas of the face and neck (1). Infection occurs almost exclusively in males – teenagers and adults. Typical clinical symptoms are severe pustular eruption, deep inflammatory plaques or non-inflammatory superficial patches (Figs 1,2) (2,3). The most common inflammatory type is typically caused by zoophilic dermatophytes – *Trichophyton mentagrophytes var. granulosum* or *Trichophyton verrucosum* (4,5).

KEY WORDS

tinea barbae, tinea faciei, dermatophytosis

Etiology and pathophysiology

Generally tinea barbae is infrequent, but it is more common in areas where weather conditions are tropical, characterized by high temperature and humidity (6). Almost exclusively adult males are affected because this dermatophytosis is localized in the hairs and hair follicle of the beard and mustache. Dermatophyte infections in females and children are diagnosed as tinea faciei (7). In past, infection was often transmitted by barbers because single-use razors were often not available. Nowadays this source of infection is almost eliminated and the old definition of tinea barbae, barber's itch, is forgotten (3). In the rural regions, cattle, horses, cats and dogs are the main source of infection. Recently some authors reported infection as an autoinoculation from fingernails or tinea pedis (5,8,9).

Tinea barbae is caused by zoophilic and antropophilic fungi. Zoophilic dermatophytes - *Trichophyton mentagrophytes var. granulosum* and *Trichophyton verrucosum* are most often responsible for inflammatory kerion-like plaques and infection caused by them is more severe. Infections caused by other zoophilic fungi e.g. *Microsporum canis* and *Trichophyton mentagrophytes var. intrdigitale* are rare (1,2). In recent years some authors described similar lesions caused by the antropophilic fungus *Trichophyton rubrum* (5,8-11).

Immunological reaction (increased allergic and/or ir-

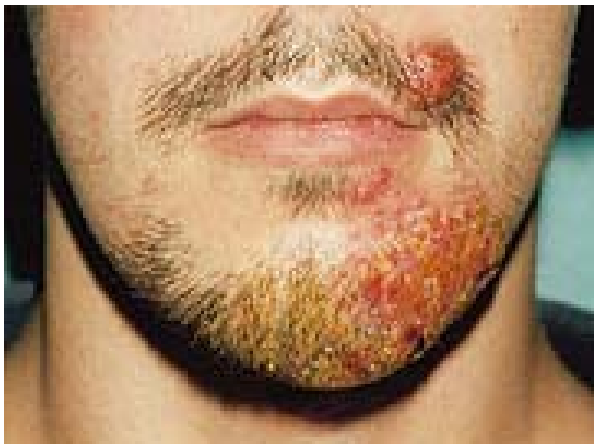

Figure 1. Inflammatory tinea barbae due to *Trichophyton mentagrophytes var. granulosum* infection.

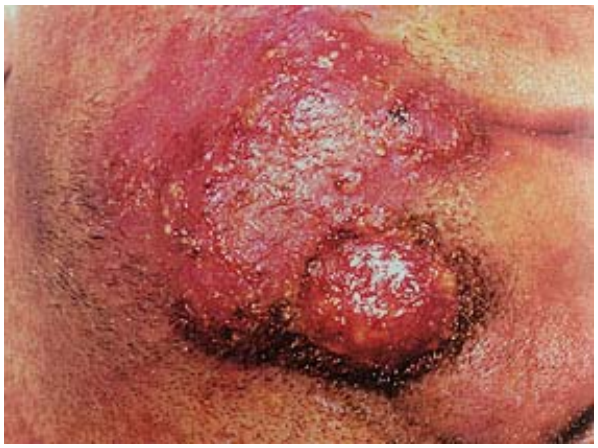

Figure 2. Typical kerion Celsi caused by *Trichophyton mentagrophytes var. granulosum*.

ritant reaction) to fungal antigens is probably involved in the development of kerion - but only a few authors postulated it as result of metabolites and/or toxins diffusion from the fungus (4,8,10,12). Pathogenic fungi as *Trichophyton spp.* produce several enzymes eg. keratinases which are necessary to invade keratins of the epidermis, hairs or nails (13).

Clinical features

Infection often begins on the neck or chin, but the clinical manifestations of tinea barbae depend upon the causative pathogen. Sometimes this dermatophytosis can develop without characteristic lesions, but always with pruritus. There is a wide range of symptoms. Two main clinical variants are distinguished.

Tinea caused by zoophilic dermatophytes is more severe, because the inflammatory reaction due to these fungi is stronger (7,13). Chin, cheeks and neck are often affected. It typically forms an inflamed nodule/nodules with multiple pustules and draining sinuses on its surface. Hairs are loose or broken; exudate, pus and crusts cover the skin surface (kerion Celsi). Plucking hairs is easy and painless. Accompanying regional lymphadenopathy may be evident; fever and malaise is not rare (3).

Noninflammatory type caused by antropophilic dermatophytes begins as flat, erythematous patches with a raised border. Scaly patches may be studded with papules, pustules or crusts (3,13). Hairs are broken close to the skin, they may plug the hair follicle. Cutaneous patches may be single or multiple and may be annular in shape (14). Patches can remain stabile for years or may enlarge (15). Sometimes, especially when follicular pustules have developed and hair loss is observed, the clinical morphology resembles bacterial folliculitis. Pustular lesions with hair loss characterize a chronic variant of this fungal infection that resembles sycosis (pustular folliculitis of the beard). Accordingly, it is called sycosiform tinea barbae.

Differential diagnosis

Variable morphology of tinea barbae lesions is the main reason for wide range of other disorders which could mimic this fungal infection. Common diseases such as bacterial folliculitis, atopic dermatitis, contact dermatitis and seborrheic dermatitis may resemble tinea barbae (4,14,16-18). Other fungi, as yeasts and molds, can cause infections localized in this area with similar lesions, especially in newborns and immunocompromised patients (19). Sometimes true dermatophytic infection can mimic other diseases, e.g. lupus erythematosus (20) or rosacea (21).

Diagnosis

Mycologic investigation is the basis for diagnosis. Mycological examination includes direct microscopy and culture. In rare cases when *Microsporum canis* causes tinea, Wood's lamp examination is helpful, showing a dull green fluorescence of the infected hairs.

Collected material usually consists of depilated hairs and pustular masses. When the plaques are superficial and without pustules the best examination material are scrapings from its border (3,22). Direct examination in 20% potassium hydroxide with addition of dimethyl sulfoxide is fast, but requires experience. Additional stain, such as Swartz-Lamkin, Parker blue-black ink or chlorazol black E stain, are sometimes helpful. The specimen is examined with a light microscope and depending upon the causal fungi this examination shows typical hyphae

and/or arthroconidia (23). Cultures take approximately 3-4 weeks and are typically performed on Saburaud agar with cycloheximide and chloramphenicol added to inhibit the growth of bacteria and non-dermatophytic fungi. Fungal identification is based on morphology and microscopy of the colonies. Identification of the pathogen provides information about the source of the infection and helps in the selection of appropriate treatment (3).

Histological examination is required only in difficult cases. Hematoxylin and eosin staining often does not reveal fungal elements and periodic acid-Schiff (PAS) staining is recommended. In biopsy specimens, folliculitis and perifolliculitis are observed, with spongiosis and lymphocytic follicular infiltrates. Sometimes microabscesses are formed by neutrophils within follicular keratin (24).

A mixed cellular inflammatory infiltrate is often present in in the dermis; in chronic kerions giant cells can be observed. Arthroconidia and/or hyphae may be detected in stratum corneum, hair follicle and hair shaft (25).

Treatment

Treatment of tinea barbae is similar to that of tinea capitis (12). Oral antimycotic therapy is required. Several studies and own experience showed that topical antifungals are not sufficient to control completely lesions of tinea barbae. Therefore, in the majority of cases combined treatment with systemic and topical antimycotics is recommended. When hairs are involved, shaving or depilation should be taken into the consideration. Warm compresses used to remove crusts and debris, as unspecific treatments, may usually be applied.

Nowadays terbinafine 250 mg applied once daily for the period of at least four weeks is regarded as a treatment of choice (26). In our department we have a good experience with this agent, as mycologic and clinical cures were obtained in all recently treated patients (9). In some cases griseofulvin at the dose of at least 20 mg/kg/day (therapy lasting not less than 8 weeks) may be considered (1,9). Itraconazole 100 mg/day for 4-6 weeks of the therapy could also be highly effective. This was confirmed by Maeda et al. (25) who effectively treated with itraconazole 100 mg/day (two months of the therapy) a farmer infected by Trichophyton verrucosusm. As topical agents usually two antifungal groups are used: azoles and allylamines (27,28).

Although the general treatment recommendations exist for tinea barbae patients, it is important to remember that frequently in those patients, treatment regiment, especially treatment period, should be determined individually depending on clinical and laboratory evaluations. Elimination of the source of infection, especially contact with infected animals seems to be important for final outcome (9,26,29-31). Moreover, treatment of other fungal infections, such as tinea pedis and onychomycosis, is essential, because of a possible autoinoculations (5,9).

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