A 9-year-old boy from rural Pennsylvania had a 2-month history of tender, well-demarcated, erythematous plaques studded with pustules on his neck, back, and chest. Prior to referral, he had not responded to multiple medications, including topical steroid creams, clotrimazole/betamethasone dipropionate and mometasone furoate, and oral antibiotics, erythromycin ethylsuccinate and cephalaxin.

From the Departments of Dermatology (Drs Papa and Maroon) and Family Medicine (Dr Clark), Penn State Geisinger Health System-Geisinger Medical Center, Danville, Pa.
Denouement and Discussion

Trichophyton verrucosum Tinea Corporis

Confluent (left) and discrete (right) erythematous annular plaques are studded with pustules. The potassium hydroxide preparation was positive for fungal elements; the fungal culture was positive for organisms.

Tinea corporis, a common infection in children, may be caused by any member of the Trichophyton, Microsporum, and Epidermophyton genera. Microsporum canis, Trichophyton mentagrophytes, and Trichophyton rubrum are most commonly isolated by culture. These dermatophytes may be geophilic, referring to organisms that reside primarily in soil; zoophilic, organisms that are transmitted from animals; and anthropophilic, those of human origin.

Zoophilic species tend to produce an inflammatory suppurative infection in humans, although the infection in animals may be subclinical. They have a specific host based on affinity for the keratin of the host. Zoophilic infections are mainly seen in rural areas, although domestic animals may also be carriers of these dermatophytes. Cattle are the main host for Trichophyton verrucosum. Cats and dogs generally carry M canis. Transmission may occur through direct contact or indirectly by infected animal hair on clothing, or in contaminated stalls, barns, or feed.

The diagnosis of tinea corporis is based on clinical features and microbiological findings. Clinically, tinea corporis often presents itself with annular, erythematous patches with a scaly border. Some annular lesions may demonstrate central clearing and others may have concentric rings of activity within the external border. Zoophilic species, such as T verrucosum, produce an inflammatory, suppurative, pustular eruption, much more intense than most other dermatophytes.

While topical antifungal agents may be effective in most cases of tinea corporis, extensive lesions or inflammatory ones respond best to oral therapy. Both griseofulvin and fluconazole are effective in treating T verrucosum infections.

Fungal cultures should be performed if the diagnosis of a skin lesion is not clear; a potassium hydroxide preparation may identify hyphae, thus indicating a dermatophytic infection.

Topical steroids are inappropriate in the treatment of tinea corporis, since they may modify the clinical appearance, increase the severity of inflammation, and ultimately, prolong the course of the infection. Combinations of potent topical steroids and antifungal agents, such as clotrimazole/betamethasone, can cause a granulomatous response that may conceal the correct diagnosis.

Dermatophytic infections of the skin may create confusing visual presentations. The marked inflammatory response, with pustules and found with T verrucosum organisms, is characteristic of this species.

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Reprints: Christine A. Papa, DO, Department of Dermatology, Penn State Geisinger Health System-Geisinger Medical Center, 100 N Academy Ave, Danville, PA 17822.

REFERENCES