



A worsening abdominal rash

The confluence of 2 treatments (one appropriate, one not) led to a challenge in diagnosing this worsening rash.

A 48-YEAR-OLD WOMAN presented to Dermatology for evaluation of a 6-cm abdominal lesion that had been present for 5 weeks (FIGURE 1). The lesion was originally about the size of a quarter, but it started to enlarge after treatment of an asthma exacerbation with a 4-day course of prednisone. It continued to grow after another physician, likely presuming the lesion was a corticosteroid-responsive dermatosis (eg, nummular eczema, granuloma annulare, or erythema annulare centrifu-

gum), prescribed a 2-week trial of clobetasol ointment. Physical examination revealed a mildly pruritic, 6-cm erythematous plaque with scaly, annular, concentric rings on the left lower abdomen. The patient had no travel history.

- WHAT IS YOUR DIAGNOSIS?
- HOW WOULD YOU TREAT THIS PATIENT?

FIGURE 1

A 6-cm erythematous, scaly plaque on the abdomen



IMAGE COURTESY OF SAN ANTONIO UNIFORMED SERVICES HEALTH EDUCATION CONSORTIUM

Diane Fernandes, DO;
Eddie Kwan, MD;
Brittany Lenz, MD
San Antonio Uniformed Services Health Education Consortium, TX, and Wilford Hall Ambulatory Surgical Center, Lackland Air Force Base, TX (Drs. Fernandes and Kwan); Dermatology San Antonio, TX (Dr. Lenz)

diane.a.fernandes.mil@army.mil

DEPARTMENT EDITOR

Richard P. Usatine, MD
University of Texas Health, San Antonio

The authors reported no potential conflict of interest relevant to this article.

doi: 10.12788/jfp.0524

➤ These steroid treatments caused the abdominal lesion to morph from the typical appearance of tinea corporis to an erythematous plaque with striking concentric scaly rings.

Diagnosis: Tinea incognito

The patient was given a diagnosis of tinea incognito, a form of tinea corporis that is exacerbated by the inappropriate use of corticosteroids in the management of a cutaneous fungal infection.¹ Furthermore, this patient’s case was consistent with tinea pseudoimbricata, a variant of tinea incognito. Tinea pseudoimbricata is characterized by striking concentric scaly rings that mimic tinea imbricata, a fungal infection caused by the dermatophyte *Trichophyton concentricum*, which is commonly found in tropical areas.²

A common infection is altered by steroid use

Tinea corporis has a relatively high prevalence. Approximately 10% to 20% of the world population is affected by fungal skin infections.³

T rubrum is the most common cause of tinea corporis. Other causes include *T tonsurans*, *T interdigitale*, *T violaceum*, *Microsporum canis*, *M gypseum*, and *M audouinii*.

Tinea corporis can be acquired through direct contact with an infected person, animal, or fomite. It may also be acquired through autoinoculation from another area of the body containing a dermatophyte fungal infection. Tinea corporis lesions are usually pruritic, erythematous, annular plaques with overlying scale and central clearing.

■ **How steroid use can change the picture.** Treatment with corticosteroids is ineffective for fungal skin infections and causes immunosuppression, allowing the fungus to thrive. This patient had been treated with a topical steroid (clobetasol) for the abdominal lesion caused by tinea corporis, as well as an oral steroid (prednisone) for an asthma exacerbation. These steroid treatments caused the abdominal lesion to morph from the typical appearance of tinea corporis—classically an annular erythematous plaque with overlying scale and central clearing—to an erythematous plaque with striking concentric scaly rings.

Clinical exam can provide clues; KOH examination can reveal the Dx

The differential diagnosis for an annular skin lesion includes not only tinea corporis, but also superficial erythema annulare centrifugum, pityriasis rosea, granuloma annulare, subacute cutaneous lupus erythematosus (SCLE), and nummular eczema.

gum, pityriasis rosea, granuloma annulare, subacute cutaneous lupus erythematosus (SCLE), and nummular eczema.

■ **Superficial erythema annulare centrifugum**, like tinea corporis, has scale. But the location of the scale sets the 2 apart. Superficial erythema annulare centrifugum lesions have a central trailing scale, whereas tinea corporis lesions have a peripheral leading scale.⁴

■ **Pityriasis rosea** forms multiple lesions in a “Christmas tree” pattern on the trunk, sometimes beginning with a single herald patch. Our patient’s single lesion with concentric scaly rings was inconsistent with the distribution and quality of the lesions in pityriasis rosea.⁴

■ **Granuloma annulare** lesions are smooth, nonscaly plaques that are most often seen on the dorsal hands and feet. The scaly manifestation of our patient’s lesion was not consistent with this diagnosis.⁴

■ **SCLE** lesions are typically photodistributed on sun-exposed skin (eg, the neck, upper trunk, or arms), whereas our patient’s lesion involved a sun-protected site.⁴

■ **Nummular eczema** can be differentiated from tinea corporis by potassium hydroxide (KOH) examination. Nummular eczema is characterized by a negative KOH exam and response to topical corticosteroids.⁴

■ **Performing a KOH examination**, using the skin scrapings from the active border of a plaque, is useful on any lesion with potential fungal etiology. If the cause is indeed a dermatophyte infection, segmented fungal hyphae will be seen under light microscopy (FIGURE 2).¹ If a KOH examination is not feasible, a skin scraping can be performed with a surgical scalpel blade and collected in a sterile urine cup for stain and culture at a qualified laboratory.

Topical and oral antifungal medications combat dermatophyte fungi

Treatments for cutaneous infections caused by dermatophyte fungi, such as tinea corporis, include topical and oral antifungals. The choice of agent depends on the extent of the disease.

Limited, localized disease can be treated topically with allylamines (terbinafine, naftifine) or imidazoles (clotrimazole). Other topi-

cal agents, such as butenafine, ciclopirox, and tolnaftate, also may be used.

Extensive disease, or tinea infection of vellus hairs, may require treatment with oral antifungal medications, such as the azoles (itraconazole, fluconazole), allylamines (terbinafine), or griseofulvin. Systemic therapy with oral antifungals has been associated with liver damage; therefore, oral therapy should not be used in patients with liver disease and liver enzymes should be monitored when appropriate.⁵ Nystatin is not effective in treating dermatophyte fungal infections.¹

■ **One complication** of the inappropriate use of steroids on a dermatophyte infection is an increased risk of the fungus extending from the superficial skin into the hair follicles in the dermis, resulting in a condition known as *Majocchi granuloma*. Follicular infection is more severe and requires oral antifungal medication, such as terbinafine, itraconazole, fluconazole, or griseofulvin.¹

■ **Our patient** was treated with terbinafine 250 mg/d for 4 weeks, due to the possibility of follicular infection. After the completion of 4 weeks of therapy, the patient's cutaneous symptoms had resolved. **JFP**

REFERENCES

1. Goldstein AO, Goldstein BG. Dermatophyte (tinea) infections. In: Ofori AO, ed. *UpToDate*. 2022. Updated November 8, 2022. Accessed November 23, 2022. www.uptodate.com/contents/dermatophyte-tinea-infections
2. Lederman E, Craft N, Burgin S. Tinea imbricata in adult. *VisualDx*. Updated September 24, 2018. Accessed November 23, 2022. www.visualdx.com/visualdx/diagnosis/?moduleId=101&diagnosisId=52399

FIGURE 2

A KOH prep made the diagnosis clear



Segmented fungal hyphae can be seen under light microscopy, confirming dermatophyte infection.

IMAGE COURTESY OF SAN ANTONIO UNIFORMED SERVICES HEALTH EDUCATION CONSORTIUM

3. El-Gohary M, van Zuuren EJ, Fedorowicz Z, et al. Topical antifungal treatments for tinea cruris and tinea corporis. *Cochrane Database Syst Rev*. 2014;CD009992. doi: 10.1002/14651858.CD009992.pub2
4. Unwala R. Approach to the patient with annular skin lesions. In: Ofori AO, ed. *UpToDate*. 2022. Updated September 7, 2022. Accessed November 23, 2022. www.uptodate.com/contents/approach-to-the-patient-with-annular-skin-lesions
5. Wong V, High W, Burgin S. Tinea corporis in adult. *VisualDx*. Updated March 24, 2019. Accessed November 23, 2022. www.visualdx.com/visualdx/diagnosis/?moduleId=101&diagnosisId=52396#Therapy

WE WANT TO HEAR FROM YOU!

Have a comment on an article, editorial, or department? You can send it by:

1. **E-MAIL:** jfp.eic@mdedge.com or
2. **MAIL:** The Journal of Family Practice, 283 - 299 Market St. (2 Gateway Building), 4th Floor, Newark, NJ 07102

LETTERS SHOULD BE 200 WORDS OR LESS. THEY WILL BE EDITED PRIOR TO PUBLICATION.

THE JOURNAL OF
**FAMILY
PRACTICE**