FEATURE ARTICLE

CE 2.0 Contact Hours

Diagnostic Dilemmas in Dermatology

A 73-Year-Old Man With Tinea Barbae and a Secondary Dermatitis

Glen Blair

ABSTRACT: A 73-year-old man was seen in dermatology for an erythematous dermatitis of the bearded portions of his face and neck. He had been seen 2 weeks prior in internal medicine and treated with cephalexin for a presumed facial cellulitis. The patient failed to respond to antibiotics, so he was seen in dermatology 2 weeks later, where a potassium hydroxide scraping (KOH) was positive for hyphae. He began treatment with fluconazole for tinea barbae and cephalexin for possible bacterial co-infection. Five days later, he returned with an acute dermatitis of the right extensor forearm and, to a lesser extent, the left. An allergic reaction to cephalosporins was considered in the differential diagnosis as well as an extension of the tinea infection, tinea corporis, and dermatophytid (id or ide) reaction. His shave biopsy showed an acute spongiotic dermatitis with a superficial perivascular infiltrate with red blood cell extravasation and rare eosinophils. He was treated for a dermatophytid reaction with a topical corticosteroid ointment. His peripheral dermatitis quickly improved with a topical corticosteroid ointment as his facial dermatitis responded to the oral antifungal medication treatment.

Key words: Tinea Barbae, Tinea Corporis, Autoeczematization, Autoinnoculation, Exanthematous Adverse Drug Reaction, Dermatophytid, id or ide Reaction

Glen Blair, RN, MSN, ANP-C, DCNP, *Harvard Vanguard Medical Associates, and Graduate School of Nursing and Health Sciences, University of Massachusetts Boston, Boston, MA.*

The author declares no conflict of interest.

Correspondence concerning this article should be addressed to Glen Blair, RN, MSN, ANP-C, DCNP, Harvard Vanguard Medical Associates, Boston, MA 02215.
E-mail: Glen_Blair@VMED.org

DOI: 10.1097/JDN.0000000000000137

CASE PRESENTATION

A 73-year-old male patient was seen in an ambulatory care internal medicine practice in Boston. He had returned 1 month previously from a vacation where he used a different razor and shave cream than was his custom, which caused an irritation he had not experienced in the past. Self-treatment with an over-the-counter emollient produced no improvement in his symptoms. The skin became progressively red and sore. He felt otherwise well.

His past medical history was significant for primary open-angle glaucoma and hypercholesterolemia. He was prescribed latanoprost 0.005% ophthalmic drops, dorzolamide-timolol 2–0.5% opthalmic drops, pilocarpine 2% ophthalmic drops, and simvastatin 10 mg by mouth daily. He had no known allergies.

On his initial examination, he was found to have mild swelling and erythema of the bearded areas of the face and neck. There was no increase in skin temperature compared with the unaffected skin. He had slightly palpable submaxillary lymphadenopathy. His oropharynx was clear. His vital signs were all within normal limits. He had no significant discomfort associated with the dermatitis. He was diagnosed with a contact dermatitis and early cellulitis and was advised to stop shaving until the issue was resolved and take cephalexin 500 mg by mouth every 6 hours for 7 days.

Two weeks later, the patient presented to dermatology reporting that the redness had improved very slightly at first but increased again once the course of antibiotics was completed. The dermatitis was tender but not pruritic, affecting only those hair-bearing areas of the face and neck, sparing the malar areas, the ears, and the scalp. The dermatitis of the neck had a raised red edge with proximal clearing, suggestive of a fungal infection (Figures 1 and 2).

There were no plaques or papules to suggest Majocchi's granuloma. A potassium hydroxide scraping (KOH) performed

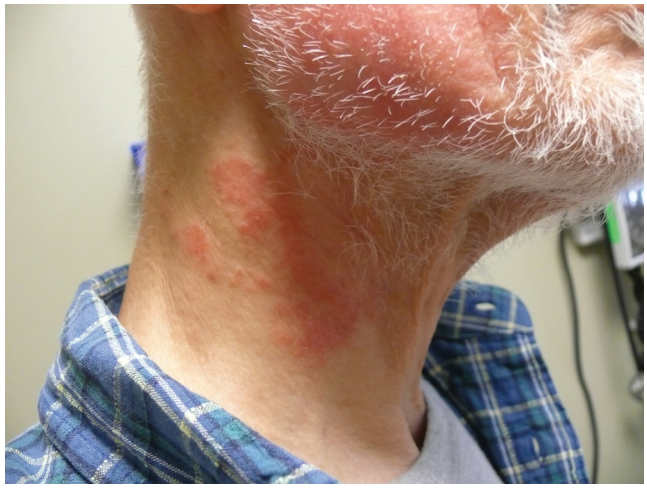

FIGURE 1. Right side of the face and neck.

at the time was positive for hyphae. The patient's diagnosis was modified to tinea barbae, and he was prescribed fluconazole 200 mg weekly for six doses. He was given a prescription for cephalexin 500 mg by mouth twice a day to take for 7 days in case there was a component of bacterial cellulitis as well.

The patient returned to dermatology 5 days later. He reported there had not yet been any significant improvement in the facial dermatitis and, in the meantime, had begun to develop a very pruritic dermatitis of the extensor surfaces of the right forearm and, to a lesser degree, on the left forearm. He denied any other changes to his signs or symptoms.

On examination, the redness of the facial dermatitis appeared to have increased, but the swelling had decreased. The oropharynx remained clear. His vital signs remained stable. The dorsal aspect of his right forearm had a scaled, annular, excoriated, and erythematous dermatitis that was poorly marginated and eczematous in appearance (Figure 3). There were no vesicles, papules, plaques, or nodules. A

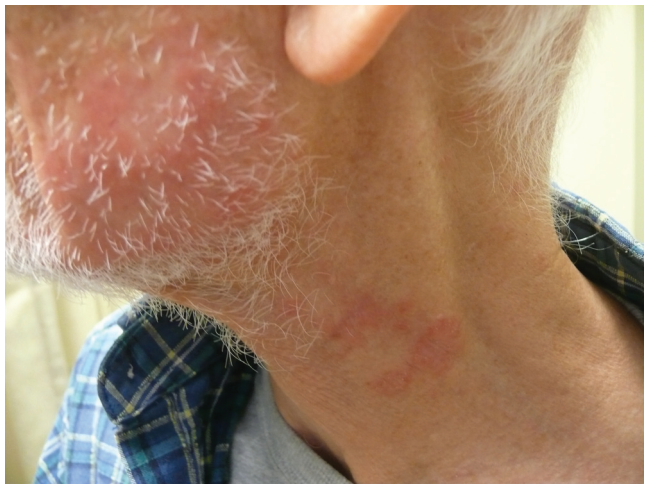

FIGURE 2. Left side of the face and neck.

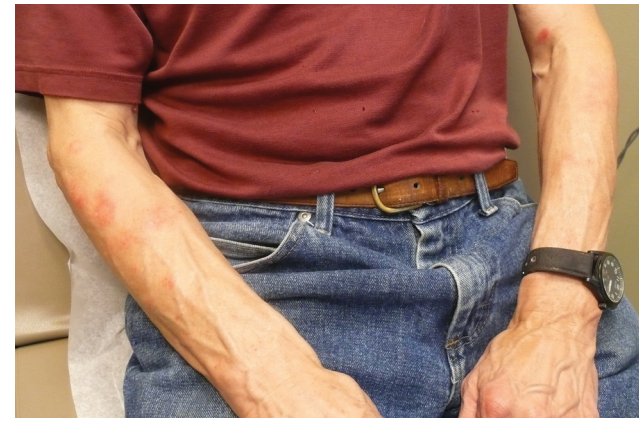

FIGURE 3. Extensor surfaces of the forearms.

similar dermatitis was beginning to show on the extensor surface of the left arm as well.

A biopsy was recommended. A shave specimen of the dermatitis was obtained from the right arm and sent for histologic examination.

DIFFERENTIAL DIAGNOSIS

1. Adverse drug reaction (ADR) to fluconazole or cephalexin. This diagnosis was considered because of the timing of the development of the dermatosis, occurring within days of initiating two medications know to cause skin-related ADRs. Cephalosporins, like the antibiotic cephalexin, are some of the most common medications to cause an exanthematous ADR, which is characterized by the development of a polymorphous, morbilliform eruption beginning 7–14 days after the initiation of the drug (Litt, 2014), developing in a symmetrical distribution beginning on the trunk and upper extremities, becoming confluent over time (Revuz & Valeyrie-Allanore, 2008). These types of reactions are less common among the azole group of antifungal medications (Litt, 2014). Other more serious ADRs like Stevens–Johnson syndrome are possible but more likely to develop more generalized and systemic symptoms (Revuz & Valeyrie-Allanore, 2008). A complete blood count could have been checked to assess of eosinophilia, which would have been supportive of an ADR-like drug reaction with eosinophilia and systemic symptoms (Revuz &Valeyrie-Allanore, 2008).
2. Tinea corporis from autoinnoculation: Tinea corporis is a dermatophyte infection that invades the keratinized layer of the epidermis of the body (Sobera & Elewski, 2008), beginning as a pruritic, circular, or oval erythematous, scaling patch or plaque that spreads centrifugally producing an area of clearing proximal to the direction of the annulus enlargement and producing a slightly raised red edge (Goldstein & Goldstein, 2014). Autoinnoculation could have occurred as the fungus Trichophyton rubrum is known

to cause both tinea barbae and tinea corporis (Sobera & Elewski, 2008).

3. Dermatophytid reaction: Dermatophytides are id or ide reactions to dermatophyte infections somewhere on the body. Id reactions are examples of autoeczematization, dermatoses that develop days to weeks after an initial lesion such as an allergic contact dermatitis or fungal infection occurring at a site distant to the primary skin lesion (Evans & Elston, 2014).

DISCUSSION

The histopathology result several days later showed the following: "Acute spongiotic dermatitis with perivascular lymphocytic infiltrate with red cell extravasation and rare eosinophils." Periodic acid–Schiff stain was negative for fungi. The pathologist's interpretation favored a hypersensitivity reaction as to a drug over an eczematous or contact dermatitis. The histology of id reactions similarly shows "a spongiotic reactive pattern with varied intensity, mild dermal edema and lymphocytic infiltration" (Emanuel, 2014). The presence of red blood cells and eosinophils are also occasionally seen (Emanuel, 2014).

The failure of the facial dermatitis to respond to treatment for cellulitis and objective presence of hype on KOH supported the primary diagnosis as tinea barbae. The initial acral presentation of the secondary dermatitis argues against a systemic ADR, which would more likely present as a central phenomenon moving in an acral direction over time. Other findings that argue against an ADR include an absence of other constitutional symptoms and the rapid resolution of the facial and arm dermatitis with targeted treatment.

The arm dermatitis lacked the annular-shaped lesion with raised red edge and central clearing, which is the typical presentation of tinea corporis in favor of poorly demarkated, excoriated, and indurated lesions like those seen with eczematous-type dermatoses. The presence of severe pruritus also argues against the dermatitis being fungal in origin and more consistent with an eczematous-type (id) reaction. The absence of fungi noted on the pathology report also argues against the arm dermatitis representing an extension of a tinea infection. "The management of dermatophytid reactions involves successful treatment of the dermatophyte infection, this may be compromised if the reaction is mistaken for a drug eruption related to the antifungal therapy" (Goldstein & Goldstein, 2014).

CONCLUSION

The patient was felt to be exhibiting autoeczematization and was diagnosed with tinea barbae with dermatophytid (id) reaction. He was given a prescription for betamethasone 0.05% topical ointment to use twice a day as needed for itching. The fluconazole and cephalexin were continued, although it would not have been inappropriate to discontinue the cephalosporin. The pathology report was not inconsistent with this diagnosis, although it does raise the possibility that the reaction was an ADR.

Two weeks later, the patient reported the arm dermatitis had resolved within the first few days and, objectively, the facial dermatitis was gone. Continuation of the antifungal and addition of a topical corticosteroid resulted in resolution of the presenting symptoms, lending support to the diagnosis of tinea barbae with id reaction. The patient recovered completely after treatment with standard treatment protocols. The temptation to discontinue antifungal treatment was tempered by the lack of supporting evidence implicating an ADR. The result was a hastened resolution of the tinea infection and the dermatophytide. ■

REFERENCES

Emanuel, P. (2014). *Eczema pathology*. Retrieved from www.dermnetnz.org/pathology/eczema-path.html

Evans, M. P., & Elston, D. M. (2014). *Id reaction (autoeczematization) clinical presentation*. Retrieved from www.http://emedicine.medscape.com/article/1049760-clinical

Goldstein, A. O., & Goldstein, B. G. (2014). *Dermatophyte (tinea) infections* (pp. 1–59). Retrieved from http://www.uptodate

Litt, J. Z. (2014). *Litt's drug eruptions & reactions manual* (19th ed., pp. 79 and 172). Boca Raton, FL: CRC Press.

Revuz, J., & Valeyrie-Allanore, L. (2008). Drug reactions. In J. L. Bolognia, J. L. Jorizzo, & R. P. Rapini (Eds.), *Dermatology* (2nd ed., pp. 300–320). Spain: Mosby Elsevier.

Sobera, J. O., & Elewski, B. E. (2008). Fungal diseases. In J. L. Bolognia, J. L. Jorizzo, & R. P. Rapini (Eds.), *Dermatology* (2nd ed., pp. 1135–1164). Spain: Mosby Elsevier.