

New rash on the right hand and neck

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A 43-year-old African-American woman was seen for a rash on her right hand and neck. The rash appeared 2 weeks earlier, and was itchy. The patient had been applying alcohol directly to the affected skin.

The patient said she had experienced rashes on and off during her adult life. She has not worn necklaces for years because they irritate the skin around her neck. She also cannot wear wool clothing or any shirts with bright colors. She had not discussed this with a physician before, and she did not know why her skin is so sensitive.

The patient was not taking any new medications, using new bath products, or wearing new

clothing before the rash appeared. However, she did remember getting new perfume 2 weeks earlier. She did not have asthma, but did have a mild hay fever. She was adopted and therefore did not know her biologic family's medical history.

On close inspection, prominent erythema was seen around her neck and on the dorsum of her right hand (**Figures 1 and 2**).

■ WHAT IS THE DIAGNOSIS?

WHAT ARE THE MANAGEMENT OPTIONS?

FIGURE 1 Itchy rash on the neck...



The patient has prominent erythema in a wide band on her neck.

FIGURE 2 ...and the right hand



The same condition can be seen on the dorsum of her right hand.

■ DIAGNOSIS: CONTACT DERMATITIS

The patient demonstrated how she applied perfume to her neck using the back of her right hand. She has acute contact dermatitis on top of previously undiagnosed eczema. Her history is positive for contact dermatitis in reaction to metal (probably nickel) in necklaces and to various fabrics.

Contact dermatitis is a common inflammatory skin condition in which erythematous and pruritic skin lesions result from contact with a foreign substance. The term describes 2 diagnostic categories—allergic contact dermatitis and irritant contact dermatitis. In this case, the chemicals in the perfume may have acted as irritants. The alcohol she used to treat the rash was probably an irritant as well.

A hypersensitivity reaction to irritants and allergens

The mechanism of allergic contact dermatitis is a delayed hypersensitivity reaction. A foreign substance comes into contact with skin and links to skin protein, forming an antigen complex recognized by the immune system. In the skin, the major antigen-presenting cell is the Langerhans cell. When the epidermis is re-exposed to the antigen, the sensitized T-cells initiate an inflammatory cascade leading to changes in the skin. The reaction generally occurs within 12 to 48 hours in a sensitized person. The differential diagnoses for this patient include atopic dermatitis, psoriasis, and fungal infection.

Cosmetics, perfumes, and chemicals in cleaning solutions are known to cause *irritant contact dermatitis*. The most typical locations are

hands or feet, with the dorsum affected more often than the palm or the sole. The lesions are usually erythematous and not well demarcated. The lesions may be macular, papular, or vesicular.

Allergic contact dermatitis often occurs after contact with allergens such as nickel in jewelry, or resins in plants such as poison ivy or poison oak. Vesicles may appear, and the hands are most commonly affected. The lesions may form a linear pattern, as in the case of plant dermatitis.

■ EVALUATION: TESTS USUALLY NOT NEEDED

A diagnosis of contact dermatitis usually requires nothing more than findings in the patient's history and physical exam. If a fungal infection is suspected, use a potassium hydroxide (KOH) preparation to look for hyphae or spores (see page 854 in this issue). Patch testing—placing common antigens on the patient's skin and observing for reactions—is used to confirm the diagnosis of contact dermatitis and to determine the offending agent.

In this case, neither test was necessary or warranted because the history and physical exam led to a clear diagnosis that was treatable without having to analyze the chemicals in the perfume.

■ TREATMENT: REMOVE THE IRRITANT, STOP THE SWELLING

Whether this is irritant or allergic contact dermatitis, the first line of treatment is to stop further exposure to the offending substance. A mid- to high-potency topical corticosteroid is

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recommended to stopping the inflammatory process (level of evidence [LOE]=5). (For an explanation of evidence-based medicine ratings, see page 000.) Ointments are more potent and particularly useful when the affected skin is dry and scaly.

Oral steroids are often used for severe local dermatitis, such as that caused by poison ivy (LOE=5). Topical tacrolimus ointment 0.1% is a more expensive option for the treatment of allergic contact dermatitis induced by nickel (LOE=2b).¹ Oral H1 blocking sedating antihistamines (such as diphenhydramine and hydroxyzine) provide relief from itching and help with sleep. Sedating antihistamines may be more effective for itching, but are probably inadvisable for persons who must drive or operate machinery. Newer nonsedating antihistamines are an option when sedating agents should be avoided.

CONCLUSION OF VISIT

The patient was given 0.1% triamcinolone ointment (a generic mid-potency steroid) to apply 2 to 3 times a day to the affected areas. She did not want any oral medications for the itching, but understood that diphenhydramine is available without a prescription if needed. She planned to give the perfume away and understood it was now on her list of items to avoid. Her physician explained her underlying eczema and what could be done to prevent rashes.

REFERENCE

1. Saripalli YV, Gadzia JE, Belsito DV. Tacrolimus ointment 0.1% in the treatment of nickel-induced allergic contact dermatitis. *J Am Acad Dermatol* 2003; 49:477-482.

THE JOURNAL OF FAMILY PRACTICE

Evidence-based medicine terms

THE JOURNAL OF FAMILY PRACTICE uses a simplified rating system derived from the Oxford Centre for Evidence-based Medicine. More detailed definitions may be found at its website: http://www.cebm.net/levels_of_evidence.asp.

Level of Evidence characterizes the validity of a study while making no specific practice recommendation

- 1a Systematic review of randomized controlled trials
- 1b Individual randomized controlled trial with narrow confidence interval
- 1c All or none—all patients died before therapy was available, but now some survive; or, some patients died before therapy was available, but now all survive
- 2a Systematic review of cohort studies
- 2b Individual cohort study, or low-quality randomized controlled trial
- 2c "Outcomes" research
- 3a Systematic review of case-control studies
- 3b Individual case-control study
- 4 Case series, or poor quality cohort or case-control studies
- 5 Expert opinion

Strength of Recommendation translates a given level of evidence into a practice recommendation

- A Includes 1a-c levels of evidence
- B Includes levels 2a-c and 3a, b
- C Includes levels 4 and 5

Strength-of-recommendation ratings do not always reflect a direct one-to-one correspondence with levels of evidence, as depicted above, but may take into account such variables as intervention cost, ease of use, and impact of the disease in the population.