Persistent 'postherpetic neuralgia' and well-demarcated plaque

Extended treatment for a previous condition provided a key to the diagnosis.

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A 75-YEAR-OLD MAN presented to the dermatology clinic for evaluation of localized, persistent burning pain and discomfort attributed to shingles and postherpetic neuralgia. He had received a diagnosis of shingles on his left upper back about 3 years prior to this presentation.

In the ensuing years, the patient had been evaluated and treated by his primary care physician, a pain management team, and a neurologist. These clinicians treated the symptoms as postherpetic neuralgia, with no consensus explanation for the skin findings. The patient reported that his symptoms were unresponsive to trials of gabapentin 800 mg tid, duloxetine 60 mg PO qd, and acetaminophen 1 to 3 g/d PO. He also had undergone several rounds of acupuncture, thoracic and cervical spine steroid injections, and epidurals, without resolution of symptoms. The patient believed the only treatment that helped was a lidocaine 4% patch, which he had used nearly every day for the previous 3 years.

Physical exam by the dermatologist revealed a lidocaine patch applied to the patient's left upper back. Upon its removal, skin examination showed a well-demarcated, erythematous, hyperpigmented, lichenified plaque with excoriations and erosions where the patch had been (**FIGURE**).

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

FIGURE
The source of this lichenified plaque remained a mystery for 3 years

IMAGE COURTESY OF UNIVERSITY OF MICHIGAN DEPARTMENT OF DERMATOLOGY

The pruritus, burning, and pain the patient had experienced were due to continuous application of the lidocaine patch to the area rather than postherpetic neuralgia.

Diagnosis: Contact dermatitis

The patient's history and skin exam provided enough information to diagnose contact dermatitis. The pruritus, burning, and pain the patient had experienced were due to continuous application of the lidocaine patch to the area rather than postherpetic neuralgia.

There are 2 types of contact dermatitis: irritant and allergic. Irritant contact dermatitis is an inflammatory reaction caused directly by a substance, while allergic contact dermatitis is a delayed hypersensitivity reaction to specific allergens.[1] While data to elucidate the incidence and prevalence of allergic contact dermatitis are unknown, common causes include latex, dyes, oils, resins, and compounds in textiles, rubber, cosmetics, and other products used in daily life.[1]

Allergic contact dermatitis due to lidocaine is becoming more prevalent with increased use and availability of over-the-counter products.[2] A retrospective chart review of 1819 patch-tested patients from the University of British Columbia Contact Dermatitis Clinic showed a significant proportion of patients (2.4%) were found to have an allergic contact dermatitis to local anesthetics—most commonly benzocaine (45%), followed by lidocaine (32%).[3] Therefore, it is important to consider contact dermatitis in patients using topical anesthetics for pain relief.

The differential varies by area affected

The differential diagnosis for contact dermatitis varies by area affected and the distribution of rash. Atopic dermatitis, lichen planus, and psoriasis are a few dermatologic conditions to consider in the differential diagnosis. They can look similar to contact dermatitis, but the patient's history can help to discern the most likely diagnosis.[1]

Atopic dermatitis is a complex dysfunction of the skin barrier and immune factors that often begins in childhood and persists in some patients throughout their lifetime. Atopic dermatitis is associated with other forms of atopy including asthma, allergic rhinitis, and food and contact allergies. Atopic dermatitis in the absence of contact allergies may manifest with chronic, diffuse, scaly patches with poorly defined borders. The patches appear in a symmetrical distribution and favor the flexural surfaces, such as the antecubital fossa, wrists, and neck.

Lichen planus most often manifests in the fourth through sixth decade of life as flat-topped itchy pink-to-purple polygonal papules to plaques. Lesions range from 2 to 10 mm and favor the volar wrists, shins, and lower back, although they may be widespread. Oral lesions manifesting as ulcers or white lacy patches in the buccal mucosa are common and may be a clue to the diagnosis. Unlike more generalized contact dermatitis, lichen planus lesions are discrete.

Psoriasis manifests as well-demarcated scaly plaques distributed symmetrically over extensor surfaces. The plaques commonly are found on the elbows, knees, and scalp. When psoriasis manifests in a very limited form (as just a single plaque or limited number of plaques), it can be hard to confidently exclude other etiologies. In these circumstances, look for psoriasis signs in more unique locations (eg, pitting in the nails or plaques on the scalp or in the gluteal cleft). Adding those findings to an otherwise solitary plaque significantly adds to diagnostic certainty.

Diagnosis entails getting the shape of things

Diagnosis is based on history of exposure to irritating or allergic substances, as well as a clinical exam. Skin examination of contact dermatitis can vary based on how long it has been present: Acute manifestations include erythema, oozing, scale, vesicles, and bullae, while chronic contact dermatitis tends to demonstrate lichenification and scale.[1]

Distinctive findings. The most distinctive physical exam findings in patients with contact dermatitis are often shape and distribution of the rash, which reflect points of contact with the offending agent. This clue helped to elucidate the diagnosis in our patient: his rash was perfectly demarcated within the precise area where the patch was applied daily.

Irritant vs allergic. Patch testing can be performed to differentiate irritant vs allergic contact dermatitis.[1] Irritant contact dermati-

tis usually is apparent when removing a patch and will resolve over a day, whereas allergic contact dermatitis forms over time and the skin rash is most prominent several days after the patch has been removed.[1]

Treatment: First, stop the offense

Treatment of both variants of contact dermatitis includes avoidance of the causative substance and symptomatic treatment with topical steroids, antihistamines, and possibly oral steroids depending on the severity.[1]

For our patient, a viral swab was taken and submitted for varicella zoster virus polymerase chain reaction testing to rule out persistent herpes zoster infection; the result was negative. The patient was counseled to discontinue use of the lidocaine patch.

Given the severity and protracted duration of the patient's symptoms, he also was started on high-potency topical steroids (clobetasol 0.05% ointment to be applied twice daily under occlusion for 2 months), a 4-week prednisone taper (60 mg × 1 week, 40 mg × 1 week, 20 mg × 1 week, 10 mg × 1 week, then stop), and hydroxyzine (25 mg nightly as needed for pruritus). The patient's rash and symptoms improved dramatically within the first few doses of prednisone and completely cleared by Week 4 of the prednisone taper. At his follow-up appointment 1 month after completing the prednisone taper, he stated that the pain on his back had resolved. JFP

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CONTINUED FROM PAGE 316

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