Letters to the Editor

Psoriasis at the Site of Healed Herpes Zoster: Wolf's Isotopic Response

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To the Editor:

A wide variety of dermatological processes can occur at the site of healed herpes zoster, mainly granulomatous processes, lymphomas, pseudolymphomas, and primary skin tumors or metastasis. These conditions occasionally appear in immunosuppressed patients with neoplasms or human immunodeficiency virus infection, but in other patients there may be no underlying disease. The interval between viral infection and second disease is extremely variable, from days to years. We describe a patient with paroxysmal nocturnal hemoglobinuria who developed guttate psoriasis lesions on the site of previous herpes zoster.

A 41-year-old man who had undergone allogeneic transplantation of bone marrow for paroxysmal nocturnal hemoglobinuria and received...
Psoriasis was diagnosed on the site of a healed herpes zoster lesion. The patient denied any personal or family history of psoriasis. He was treated with topical corticosteroids, with complete whitening of the lesions within 2 months.

The isotopic response, defined by Wolf et al as the onset of a new cutaneous disease at the site of another, already healed disease to which it is unrelated, would explain the appearance of psoriasis at the site of herpes zoster or varicella.

Herpes zoster is the disease most commonly presenting as the initial condition in an isotopic phenomenon. Although herpetic cytopathic changes are not observed in a biopsy of the second disease, it has been suspected that virus particles persisting in the tissue could be responsible. Nevertheless, viral DNA has only been detected in post-zoster cutaneous lesions when they occurred in the first few weeks, and not found if the new process appeared months later, as occurred in our patient. However, it has been suggested that viral infection could alter local cutaneous immunity, and that such a change would favor hyperreactivity and, consequently, cause granulomas, pseudolymphomas, vasculitis, or eczematous reactions, or immunosuppression that would facilitate the onset of skin cancer and bacterial, mycotic, or viral infections. We suggest that tumor necrosis factor alpha (TNF-α) may have a role in the Wolf isotopic response.

TNF-α is an essential cytokine in defense mechanisms, with broad effects in both the innate and adaptive immunity and with well-established antiviral activity. TNF-related cytokines are critical effector molecules in the immune response against viral pathogens. TNF receptor binding activates apoptotic and nonapoptotic mechanisms that have antiviral effects. This cytokine is elevated in the primary immune response against VZV infection, in re-exposure to this virus, and during herpes zoster episodes. Furthermore, TNF alteration has been implicated in a wide variety of inflammatory diseases, including psoriasis, and its role in inducing and maintaining granulomas at multiple levels is also known.

Because granulomatous processes, such as granuloma annulare, sarcoid granuloma, tuberculoid granuloma, vasculitis, and granulomatous folliculitis, are the conditions most commonly reported after herpes zoster, we suggest that a TNF alteration or overexpression, induced locally by VZV infection, could play a crucial role in the pathogenesis of these complications. Such local TNF production would also explain psoriasis cases described following VZV infections in genetically predisposed individuals.

References

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To the Editor:

We describe an 88-year-old woman with various lesions in the right submammary region that had remained stable for more than 40 years. She reported rapid growth and ulceration of one of the lesions in the past year. The examination showed a firm tumor of diameter 7 cm below the right breast. The surface of the tumor was keratotic at the periphery and ulcerated in the middle with foul-smelling serous exudate. Adjacent to the lesion, there were various smaller erythematous brownish tumors with a velvety surface, and with a linear distribution (Figure 1). No enlarged local or regional lymph nodes were palpated. Laboratory workup, chest x-ray, electrocardiogram, bilateral mammography, and right axillary ultrasound were all normal. An incisional biopsy of the larger tumor and another biopsy of one of the adjacent lesions were taken. In the first case, the hematoxylin-eosin stain showed irregular, anastomosed islets composed of intraepidermal tumor cells, some of them pigmented, with a clearer cytoplasm than the surrounding keratinocytes. Abundant atypical cells with large, irregular, hyperchromatic nuclei were observed inside the tumor masses. In some sections, cystic spaces within these nests of basaloid cells could be seen. The epidermis presented hyperkeratosis, foci of parakeratosis, and irregular acanthosis (Figure 2 A and B). A biopsy of the smaller lesion showed well-defined nests of uniform cuboidal cells with rounded, basophilic nuclei showing no atypia, and with cystic structures in the interior (Figure

Figure 1. Ulcerated, exudative tumor with pigmented, keratotic surface at the periphery and ulceration in the middle, and various smaller tumor lesions with a linear distribution pattern.

Figure 2 (A y B). Acanthotic epidermis containing tumor-cell nests that show atypias and mitotic figures. (A, Hematoxylin-eosin, ×20; B, hematoxylin-eosin, ×100.)

Malignant Degeneration of Linear Hidroacanthoma Simplex

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