

Herpetic zoster folliculitis in the immunocompromised host

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INTRODUCTION

Exclusive involvement of herpes zoster (HZ) in the follicular epithelium occurs rarely and lacks the typical cutaneous and histopathologic findings associated with herpesvirus.¹ We describe a patient who underwent adjuvant chemotherapy for pancreatic cancer and subsequently had a nonvesicular rash for several weeks, ultimately proving to be herpetic zoster folliculitis.

CASE REPORT

A 78-year-old man with adenocarcinoma of the tail of the pancreas treated with surgical resection and 1 round of adjuvant chemotherapy with gemcitabine, docetaxel, and capecitabine presented with a 3-week history of a right leg rash. He first noticed the rash 5 days after the initiation of his chemotherapy. It initially appeared on his middorsal foot, and over the next couple weeks progressed proximally along the anteromedial leg to the distal knee and medial thigh. It was not painful and was minimally pruritic. Two and a half weeks after the onset of his rash, a fever to 38.5°C developed along with back pain. At this time, he had a nondiagnostic skin biopsy by an outside dermatologist and was given diphenhydramine and topical hydrocortisone with no improvement in his rash. He also had an abdominal computed tomography (CT) performed at an outside hospital, which found a left upper quadrant fluid collection. He was subsequently admitted to Columbia Presbyterian Medical Center for evaluation.

On our examination, he had purpuric patches and edematous, purpuric papules along the right dorsal foot, extending proximally up the right anteromedial leg (Fig 1). He also had a few faint pink papules

Abbreviations used:

HZ: Herpes zoster
 CT: computed tomography



Fig 1. Herpetic zoster folliculitis as seen on a patient with pancreatic cancer after chemotherapy: nontender purpuric patches and edematous, purpuric papules scattered along the L4 and L5 dermatomes of the right anteromedial leg.

along the right hip and superior buttock (Fig 2). There were no vesicles. A comprehensive metabolic panel and liver function test results were normal. Noted were a leukocytosis level of 14,400/ μ L with 76% neutrophils and 1% bands, an elevated lipase level of 194 U/L (3-43 U/L), and an amylase level of 95 U/L (20-96 U/L). A CT scan of the abdomen confirmed an 8.0- \times 7.0-cm fluid collection of the left upper quadrant of the abdomen. A skin biopsy of the right anteromedial leg found only alteration of the basal layer epidermis with a perivascular mononuclear cell infiltrate and extravasated erythrocytes. However, deeper sections had necrotic keratinocytes and multinucleated epithelial-type giant cells with ground-glass nuclei restricted to the follicular epithelium, confirming a diagnosis of follicular herpetic infection (Fig 3, A and B). A diagnosis of HZ in the L4

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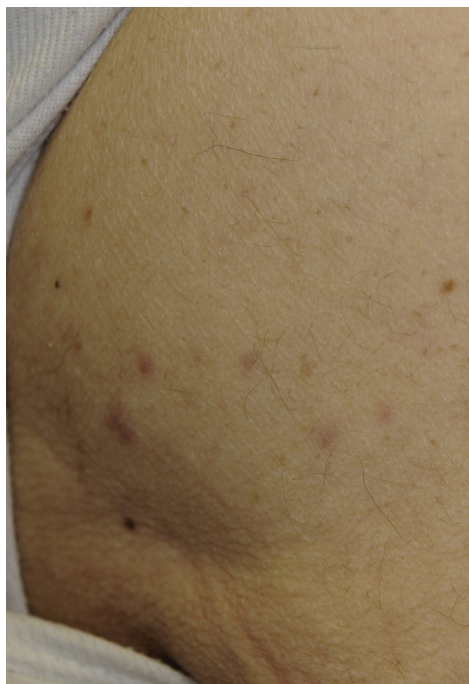


Fig 2. Herpetic zoster folliculitis as seen on a patient with pancreatic cancer after chemotherapy: a few faint, pink papules located on the right hip.

and L5 dermatomes was made, and the eruption promptly resolved with a 7-day course of valganciclovir (1-g tablet 3 times a day).

DISCUSSION

Herpes zoster (HZ), a reactivation of latent varicella-zoster virus in the dorsal root ganglia, classically presents with painful grouped vesicles over an erythematous base in a dermatomal distribution. Typical histopathologic findings of herpetic infection include multinucleated epithelial cells, ballooning keratinocytes with “steel grey” nuclei,

and acantholysis²; however, these features may not be present in the immunocompromised host. Moreover, atypical variants of HZ in the immunocompromised host may show no involvement of the epidermis, a finding that often correlates with the absence of vesicles or pustules on examination.^{3,4}

In atypical cases of HZ, the initial biopsy results may be interpreted as nondiagnostic, whereas deeper sections will ultimately reveal the features of herpetic infection, hence, the term *herpes incognito*.⁵ Our patient’s biopsy findings of a deep perivascular lymphocytic infiltrate with extravasated erythrocytes confined to the basal epidermal layer, and necrotic keratinocytes and multinucleated giant cells confined to the follicular epithelium, are diagnostic of herpetic folliculitis.¹ Although there are several reports of nonvesicular eruptions with exclusive herpetic involvement of the pilosebaceous units, in these cases, the isolated follicular involvement was considered an early feature of HZ infection, and all patients progressed to have the typical morphologic features of HZ.⁶ Our patient’s presentation was unusual because several weeks after the onset of his rash, his primary lesions persisted as purpuric papules and patches, devoid of any vesicles or crusting, and his biopsy failed to reveal any of the typical epidermal changes in the interfollicular epithelium.

The prolonged duration of our patient’s rash (4 weeks vs <2 weeks normally),⁷ the atypical histology on skin biopsy with rare findings of herpetic folliculitis, and the nonvesicular purpuric eruption in 2 contiguous dermatomes are all characteristic of HZ in the immunocompromised host (pancreatic cancer and chemotherapy). Only a few case reports have described zosteriform herpetic folliculitis in patients with either a hematologic or solid malignancy undergoing chemotherapy.^{8,9} In our patient, his rash of HZ

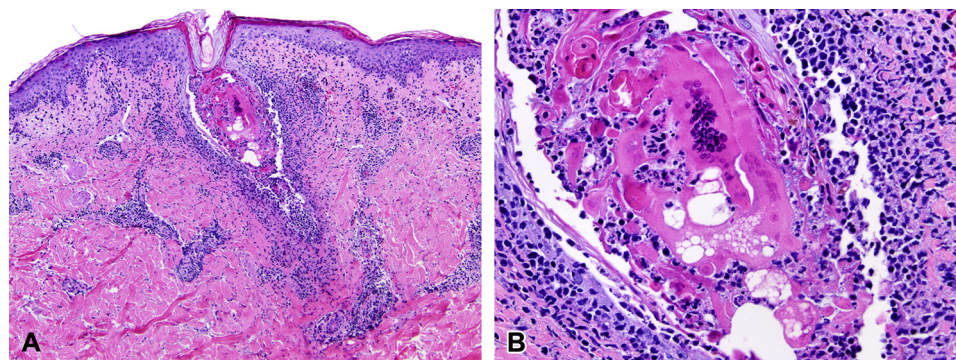


Fig 3. Herpetic folliculitis in an immunocompromised host as seen on a skin biopsy specimen from the right anteromedial leg. **A**, Deeper section shows an inflamed and ruptured hair follicle containing necrotic keratinocytes and **B**, multinucleated epithelial-type giant cells with ground glass nuclei, consistent with a diagnosis of herpetic folliculitis. (**A** and **B**, Hematoxylin-eosin stains; original magnification **A**, 10 \times ; **B**, 20 \times .)

resolved with oral valganciclovir (vs intravenous acyclovir) despite probable zoster pancreatitis, as evidenced by back pain, an elevated amylase, fever, leukocytosis, and left upper quadrant fluid collection on CT scan. The concept of locus minoris resistentiae (zoster pancreatitis in the residual pancreas after pancreatic adenocarcinoma resection) is beyond the scope of this report.

We stress the importance of multiple skin biopsy sections for a complete histologic examination of the adnexal structures in any immunocompromised patient with dermatomal lesions for the diagnosis of HZ folliculitis.

REFERENCES

1. Boer A, Herder N, Winter K, Falk T. Herpes folliculitis: clinical, histopathological and molecular pathological observations. *Br J Dermatol.* 2006;154:743-746.
2. Nikkels AF, Debrus S, Sadzot-Delvaux C, et al. Comparative immunohistochemical study of herpes simplex and varicella-zoster infections. *Virchows Arch A Pathol Anat Histopathol.* 1993;422:121-126.
3. Weinberg JM, Mysliwiec A, Turiansky GW, Redfield R, James WD. Viral folliculitis. Atypical presentations of herpes simplex, herpes zoster, and molluscum contagiosum. *Arch Dermatol.* 1997;133:983-986.
4. Grossman ME, Fox LP, Kovarik C, Rosenbach M. *Cutaneous Manifestations of Infection in the Immunocompromised Host.* . New York, NY: Springer; 2012:152-161.
5. Boer A, Herder N, Bloedorn-Schlicht N, Falk T. Herpes incognito most commonly is herpes zoster and its histopathologic pattern is distinctive. *Am J Dermatopathol.* 2006;28:181-186.
6. Walsh N, Boutilier R, Glasgow D, Shaffellburg M. Exclusive involvement of folliculosebaceous units by herpes: a reflection of early herpes zoster. *Am J Dermatopathol.* 2005;27:189-194.
7. Balfour HH. Varicella zoster virus infection in immunocompromised hosts. *Am J Med.* 1988;85:68-73.
8. Kim KJ, Choi HJ, Suh HS, et al. Zosteriform herpetic folliculitis involving eccrine gland. *J Dermatol.* 2003;30:929-930.
9. Bello CC, Burgos SC, Cárdenas CD, González SB. [Necrotizing herpes folliculitis. Report of one case]. *Rev Med Chil.* 2012;140(12):1589-1592.