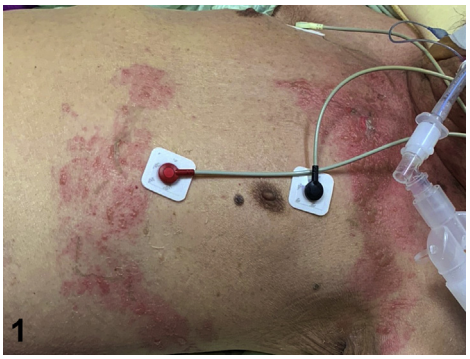
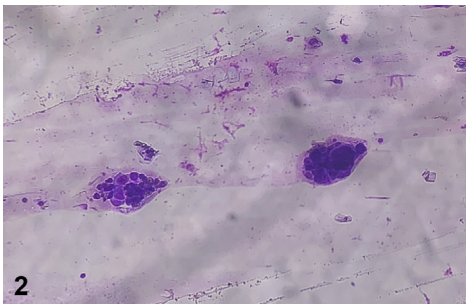
Two linear progressive blistering eruptions in an immunocompromised patient

Lai-Ying Lu, MD,[a] and Wei-Ti Chen, MD, MS[a,b,c,d]
Taoyuan, Taiwan

Key words: herpes zoster; herpes zoster duplex unilateralis; varicella zoster virus.





INTRODUCTION

A 90-year-old man with an uroseptic shock was admitted to the intensive care unit with endotracheal tube insertion and immunocompromised status for months. He developed progressive, blistering eruptions on the upper left side of the chest for 4 days. There was no preceding fever, pneumonia, or orogenital ulcer, and the contact history was negative. On examination, 2 noncontiguous groups of vesicles and bullae were linearly distributed on the left T1 and T7 dermatomes (Fig 1). Tzanck smear cytology revealed multinucleated giant cells from the blisters of both the dermatomes (Fig 2).

Question 1: What is the most likely diagnosis?

A. Allergic contact dermatitis (ACD)

B. Linear IgA bullous dermatosis

C. Herpes zoster duplex unilateralis

D. Bullous impetigo

E. Bullous erysipelas

Answers:

A. ACD — Incorrect. ACD is a type IV delayed hypersensitivity response to an antigen that contacts a sensitized individual's skin. Acute ACD characteristically presents as erythematous, eczematous, or vesiculobullous dermatitis. It may be localized to the contact region and can progress to a more generalized pattern. The clinical manifestation and lack of a contact allergen make ACD less likely in this patient.

B. Linear IgA bullous dermatosis — Incorrect. Linear IgA bullous dermatosis is an autoimmune blistering disease with annular rings of vesicles involving the skin and mucosa membranes and is commonly referred to as a "crown of jewels." On direct immunofluorescence, it is characterized by a linear band of IgA deposition at the

From the Department of Dermatology[a] and Drug Hypersensitivity Clinical and Research Center, Chang Gung Memorial Hospital, Linkou, Taoyuan[b]; College of Medicine, Chang Gung University, Taoyuan[c]; and Graduate Institute of Immunology, College of Medicine, National Taiwan University.[d]

Funding sources: None.
IRB approval status: Not applicable.

Correspondence to: Wei-Ti Chen, MD, MS, Department of Dermatology, Chang Gung Memorial Hospital, No. 5, Fuxing St, Guishan Dist, Taoyuan 33305, Taiwan. E-mail: greatedisonchen@gmail.com.

JAAD Case Reports 2021;14:43-5.
2352-5126

https://doi.org/10.1016/j.jdcr.2021.05.039

dermoepidermal junction. This patient had neither mucosal lesions nor disseminated blistering.

C. Herpes zoster duplex unilateralis — Correct. Herpes zoster is a viral infection that occurs due to the reactivation of the latent varicella zoster virus and classically presents as grouped vesicles or bullae on an erythematous base, involving a single or adjacent dermatome unilaterally. The Tzanck examination demonstrating multinucleated giant cells is diagnostic. When 2 noncontiguous dermatomes are simultaneously involved unilaterally, it is called herpes zoster duplex unilateralis. Noncontiguous herpes zoster is very rare (<0.5%) as the high viral genome in 1 dorsal root ganglion induces concurrent varicella zoster virus–specific immunoboosting reactions that prevent subsequent varicella zoster virus reactivation in other dorsal root ganglia.[1]

D. Bullous impetigo — Incorrect. Bullous impetigo is commonly caused by staphylococcal exfoliative toxins that target desmoglein 1 and result in epidermal cleavage.[2] Bullous impetigo presents as grouped, flaccid bullae or more commonly as erosions with collarette scaling due to the superficial level of cleavage. It commonly affects children and immunocompromised adults. Although bullous impetigo can be mistaken for herpes infection, the Tzanck examination can differentiate between the 2 diseases.

E. Bullous erysipelas — Incorrect. Erysipelas is a bacterial infection of the dermis mainly due to streptococcal infection. Bullous erysipelas is considered a severe local complication of the disease. The result of the Tzanck examination is incompatible with bullous erysipelas.

Question 2: Which of the following is considered a risk factor for herpes zoster duplex?

A. European origin

B. Younger age

C. Male sex

D. Prior history of herpes zoster

E. Immunocompromised status

Answers:

A. European origin — Incorrect. According to a literature review by Zhang and Zhou,[3] the risk factors associated with herpes zoster duplex include Asian origin (66%), advanced age (44.4%), immunosuppression (47.2%), and female sex (63.9%).

B. Younger age — Incorrect. It should be advanced age.

C. Male sex — Incorrect. It should be female sex.

D. Prior history of herpes zoster — Incorrect. There is no evidence to suggest that a history of prior herpes zoster increases the risk of herpes zoster duplex.

E. Immunocompromised status — Correct. Immunosuppression has been associated with an increased risk of herpes zoster duplex.

Question 3: Which statement about the prognosis for this condition is correct?

A. Patients with this condition have a worse prognosis than classic herpes zoster

B. Patients with this condition have prognosis similar to classic herpes zoster

C. Patients with this condition have a higher tendency to develop postherpetic neuralgia than classic herpes zoster

D. Patients with herpes zoster duplex require prolonged treatment (>7 days)

E. All of the above are correct

Answers:

A. Patients with this condition have a worse prognosis than classic herpes zoster — Incorrect. Patients with herpes zoster duplex have demonstrated prognosis similar to classic herpes zoster.[4]

B. Patients with this condition have prognosis similar to classic herpes zoster — Correct. Patients with herpes zoster duplex have demonstrated prognosis similar to classic herpes zoster.[4]

C. Patients with this condition have a higher tendency to develop postherpetic neuralgia than classic herpes zoster — Incorrect. Herpes zoster duplex has not been shown to increase the risk of postherpetic neuralgia.[4]

D. Patients with herpes zoster duplex require prolonged treatment (>7 days) — Incorrect. The antiviral dosing and pain control in the management of herpes zoster duplex remain the same as that of classic herpes zoster.[4]

E. All of the above are correct — Incorrect.

The authors thank Hsi Yen for his assistance in editing the manuscript.

Abbreviation used:

ACD: allergic contact dermatitis

Conflicts of interest

None disclosed.

REFERENCES

1. Castronovo C, Nikkels AF. Chronic herpes zoster duplex bilateralis. *Acta Derm Venereol*. 2012;92(2):148-151.
2. Amagai M, Matsuyoshi N, Wang ZH, Andl C, Stanley JR. Toxin in bullous impetigo and staphylococcal scalded-skin syndrome targets desmoglein 1. *Nat Med*. 2000;6(11):1275-1277.
3. Zhang F, Zhou J. Zoster duplex: a clinical report and etiologic analysis. *Int J Clin Exp Med*. 2015;8(7):11020-11025.
4. Son JH, Chung BY, Kim HO, Cho HJ, Park CW. Herpes zoster duplex unilateralis: two cases and brief literature review. *Ann Dermatol*. 2016;28(6):757-761.