



## BRIEF REPORT

# A Case of Post-Herpetic Nevoid Comedones

Jong-Kil Seo, Ki-Heon Jeong, Min Kyung Shin

Department of Dermatology, School of Medicine, Kyung Hee University, Seoul, Korea

Dear Editor:

Wolf's post-herpetic isotopic response (PHIR) is defined as the occurrence of a new skin lesion at the site of a previous and healed herpetic eruption. Herpes simplex viruses and varicella-zoster virus (VZV) are both epidermo-neurotropic and can alter local mechanisms of immunity. Therefore, herpes-infected areas can be a preferential location for subsequent immunity-related skin diseases. PHIR presents with several types of cutaneous disorders, including granulomatous reactions, malignant tumors, leukemic or lymphomatous infiltrations, dysimmune reactions, infections, comedonic-microcystic reactions and others<sup>1</sup>.

A 55-year-old male presented with a painful and itchy skin lesion on the right shoulder and back. He had experienced herpes zoster at the same site 6 weeks prior to presentation. Physical examination revealed localized, grouped, pin-head-sized, black-colored, comedo-like lesions with erythematous scarring plaques on the right shoulder and back that mimicked a linear dermatomal lesion (Fig. 1A). He had no other chronic illnesses or significant family history. Dermoscopic findings showed multiple, round- to oval-shaped, comedo-like openings; a central, dark brown-colored keratin plug; and homogeneous, light brown, halo pigmentation (Fig. 1B). We performed a skin biopsy on the comedo-like lesion, and the histopathological evalua-

tion demonstrated eosinophilic keratin and sebum material in a dilated follicular structure and periadnexal inflammation in the dermis (Fig. 1C). We suspected reactivation of VZV, so we performed VZV polymerase chain reaction (PCR) of the skin lesion biopsy. The result of the PCR was negative. Based on the clinical and histopathologic findings, the patient was diagnosed with post-herpetic nevoid comedones, which were easily removed by a mechanical method. The patient refused further treatment and was followed for post-herpetic neuralgia. The comedones gradually disappeared over a 4 month period (Fig. 1D). We received the patient's consent form about publishing all photographic materials.

To the best of our knowledge, comedone-like lesions on healed herpetic lesions have been reported in only 19 cases<sup>2-4</sup>. The lesions have been described with several terms including comedones and acneiform eruption. Because the lesions clinically appear as nevus comedonicus and shows all the characteristics of comedones, we thought the term 'post-herpetic nevoid comedones (PHNC)' would be proper. To accurately diagnose PHNC, clinicians must consider the patient's past history, clinical condition, and dermoscopy (Table 1).

The pathomechanism of PHNC is postulated to be that a local decrease of nerve fibers by viral infections results in dysregulation of neuro-immune homeostasis. The release of neuropeptides, like substance P, from damaged nerve endings has been found to play a role<sup>3</sup>. Substance P may stimulate lipogenesis of the sebaceous glands, which may provoke proliferation of *Propionibacterium acnes*. Therefore, neuropeptides may contribute to the development of acne inflammation and comedones<sup>4</sup>. It is less likely that viral particles cause PHNC. Furthermore, previous reports have rarely reported the persistence of VZV DNA within PHIR lesions, and the PCR result of our case was negative as well<sup>5</sup>.

Herein, we report a rare case of PHNC. Physicians should consider the possibility of PHNC when patients with past

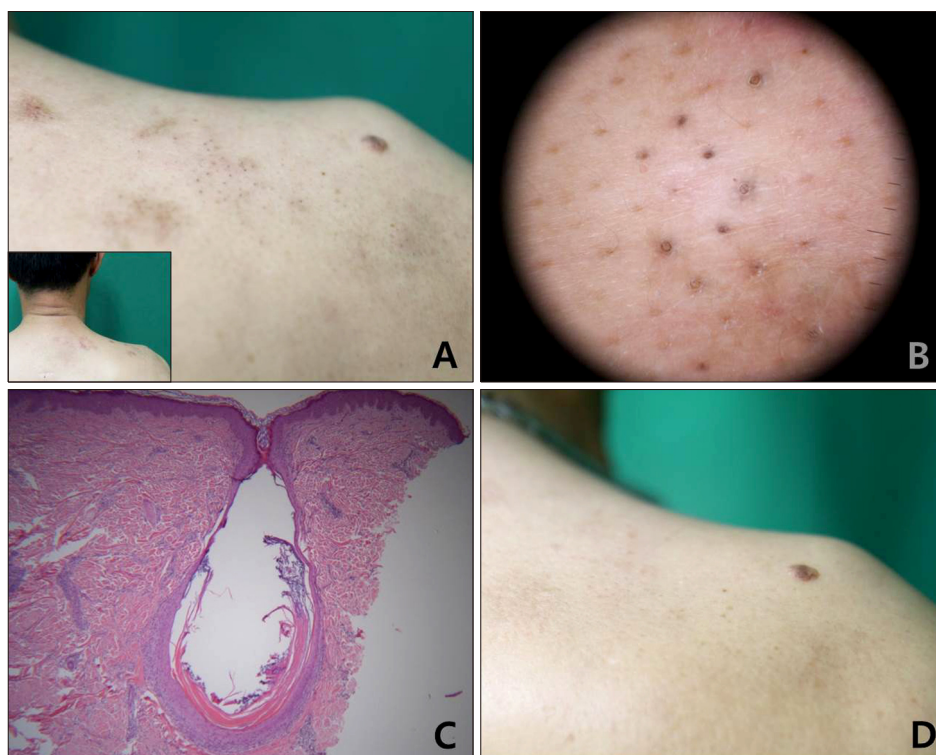
Received September 3, 2018, Revised December 6, 2018, Accepted for publication January 10, 2019

**Corresponding author:** Min Kyung Shin, Department of Dermatology, School of Medicine, Kyung Hee University, 23 Kyungheedaero, Dongdaemun-gu, Seoul 02447, Korea. Tel: 82-2-958-8300, Fax: 82-2-969-6538, E-mail: haddal@hanmail.net

ORCID: <https://orcid.org/0000-0001-9834-7931>

This is an Open Access article distributed under the terms of the Creative Commons Attribution Non-Commercial License (<http://creativecommons.org/licenses/by-nc/4.0>) which permits unrestricted non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited.

Copyright © The Korean Dermatological Association and The Korean Society for Investigative Dermatology



**Fig. 1.** (A) Localized, grouped, pin-head-sized, black-colored, comedo-like lesions with erythematous scarring plaques on the right shoulder and back, mimicking a linear dermatomal lesion. (B) Dermoscopic findings showed multiple, round-to-oval-shaped, comedo-like openings with a central, dark brown-color keratin plug and homogeneous, light brown, halo pigmentation. (C) Histologic findings revealed eosinophilic keratin and sebum material in a dilated follicular structure in the dermis (H&E,  $\times 40$ ). (D) The comedo-like lesions gradually disappeared after 4 months.

**Table 1.** Differential diagnosis of post-herpetic nevoid comedones (PHNC)

Characteristic	Comedones	PHNC	Nevus comedonicus (NC)
Clinical presentation	Predilection site for acne	Usually linear (Previous Herpes zoster site) No cysts, fistulas, abscess, or scars	Usually linear Honeycomb pattern NC syndrome (neurologic, orthopedic, and ophthalmic abnormalities)
Dermoscopic findings	Numerous, homogenous, dark-brown or black areas, usually circular in shape and located superficially in the epidermis	Like NC (smaller hyperkeratotic plug)	Numerous, circular and barrel-shaped, homogenous areas in light and dark-brown shades with remarkable keratin plugs
Histological	Obligatory follicles True comedones (keratin + sebum)	Similar to comedones	Rudimentary follicles Pseudocomedones (keratin)
Mechanical removal	Easy	Easy	Not easy
Treatment and prognosis	Good response to treatment	Spontaneous remission	Challenging

history of herpes zoster complain of cutaneous lesions. Because PHNC can spontaneously disappear, disease progress can be observed without unnecessary treatment.

## CONFLICTS OF INTEREST

The authors have nothing to disclose.

## ORCID

Jong-Kil Seo, <https://orcid.org/0000-0001-8822-6466>  
Ki-Heon Jeong, <https://orcid.org/0000-0001-6908-0932>

Min Kyung Shin, <https://orcid.org/0000-0001-9834-7931>

## REFERENCES

- Ruocco V, Ruocco E, Brunetti G, Russo T, Gambardella A, Wolf R. Wolf's post-herpetic isotopic response: infections, tumors, and immune disorders arising on the site of healed herpetic infection. *Clin Dermatol* 2014;32:561-568.
- Dong H, Hu Y, Basude ME. Post-herpetic acneiform eruption: report of two cases with dermoscopic observations. *Australas J Dermatol* 2015;56:310-311.
- Wang B, Zheng J, Wang HW. Postherpetic comedones in

Brief Report

- two Chinese Han patients. *Chin Med J (Engl)* 2017;130:1615-1616.
4. Sanchez-Salas MP. Appearance of comedones at the site of healed herpes zoster: Wolf's isotopic response. *Int J Dermatol* 2011;50:633-634.
  5. Requena L, Kutzner H, Escalonilla P, Ortiz S, Schaller J, Rohwedder A. Cutaneous reactions at sites of herpes zoster scars: an expanded spectrum. *Br J Dermatol* 1998;138:161-168.