Herpes zoster after COVID-19 vaccination in an adolescent

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To the Editor:

An inactivated whole virus COVID-19 vaccine, BBIBP-CorV, was developed by China National Biotec Group, Beijing Institute of Biological Products Co., Ltd. [1,2]. The BBIBP-CorV has been approved for emergency use by the WHO [3] and authorized to use in many countries, including Thailand, in children from 6 years old. The common adverse effects of the BBIBP-CorV are local reactions such as pain and swelling and other mild systemic symptoms, including fever, headache, nausea, and vomiting [4].

Implementation of two BBIBP-CorV in 3-17-year-old children in phase 1/2 studies have demonstrated safety and favorable antibody responses [5]. However, its efficacy and safety have to be assessed in a larger sample size. The large scale of COVID-19 immunization with BBIBP-CorV in adolescence is an ongoing study at Chulabhorn Hospital. Herein, we report a case of herpes zoster infection after an administration of the first dose of BBIBP-CorV from Thailand.

A 16-year-old boy received his first BBIBP-CorV 5 days before developing a painful skin eruption on his right waist and back. He had no abnormal medical history or recurrent infection. He also had no history of immunosuppression or drug use. He had varicella when he was a three-year-old. Dermatological examination showed clusters of confluent erythematous papules and vesicles along his right T9 dermatome (**Figure 1**). Tzanck smear identified multinucleated giant cells. His anti-HIV test result was non-reactive. The final diagnosis was herpes zoster. After receiving oral acyclovir and topical acyclovir for one week, the skin lesions became dry and crusted.

Herpes zoster is commonly found in elderly or immunocompromised patients. It is a cutaneous viral infection caused by the reactivation of varicella-zoster virus at peripheral or cranial nerves after primary infection with this particular virus [6]. Recently, herpes zoster infection in immunocompetent adults following the COVID-19 vaccination, including the mRNA vaccine, the adenoviral vector vaccines ChAdOx1 nCoV-19, and inactivated whole virus vaccine has been reported in the literature worldwide [7]. The infection is believed to occur as a result of COVID-19 suppression of T cell function and decreased quantity of T lymphocytes

Figure 1. *Dermatological examination showed clusters of confluent erythematous papules and vesicles along his right T9 dermatome,* ***A)*** *front view,* ***B)*** *back view.*

[8]. Vaccine-related reactivation has been considered if the onset of herpes zoster development following COVID-19 vaccination is within 1-24 days [7]. In our case, the reactivation occurred five days after receiving the COVID-19 vaccine. In addition, 399 cases of herpes zoster infection have been reported from a narrative review up to August 2021, in which 351 cases were related to the BNT162b2 vaccine; the youngest age was 21 years old [7]. Unfortunately, it was unclear whether the rate of herpes zoster after the COVID-19 immunization was higher than the rate of herpes zoster in the general population [7].

To our knowledge, there are an increasing number of reports of herpes zoster occurrence in patients after receiving the COVID-19 vaccine; this is the first case of the development of herpes zoster following the BBIBP-CorV in adolescence and the youngest adolescent having herpes zoster considered as COVID vaccine-related reactivation.

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Potential conflicts of interest

The authors declare no conflicts of interest.

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