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Immunoglobulin A Vasculitis Following ChadOx1 nCoV-19/AZD1222 (AstraZeneca COVID-19 Vaccine) Vaccination

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Dear Editor:

ChadOx1 nCoV-19/AZD1222 (AstraZeneca® COVID-19 vaccine) is a vaccine against coronavirus disease 2019 (COVID-19) in people aged 18 years and older.

Immunoglobulin A (IgA) vasculitis (IgAV; formerly called Henoch-Schönlein purpura) can be diagnosed when purpura is present and there is one of abdominal pain, arthralgia, renal involvement and leucocytoclastic vasculitis with predominant IgA deposits. And an elevated serum IgA level is commonly seen in patients with HSP[1]. Herein, we report a case of a patient who was diagnosed with IgAV after ChadOx1 nCoV-19/AZD1222 vaccination.

A 66-year-old man presented with widespread palpable purpura with some vesicles on the both extremities for a week. He had swelling and arthralgia in the joints of the fingers (Fig. 1). The skin lesion developed 6 days after receiving the first dose of the ChadOx1 nCoV-19/AZD1222 vaccine. He was on hemodialysis due to chronic kidney disease and is a diabetic patient receiving insulin. No new drugs have been administered recently. And he was hospitalized due to diabetic foot, with purpura progressing.

Punch biopsy from his right leg showed leukocytoclastic

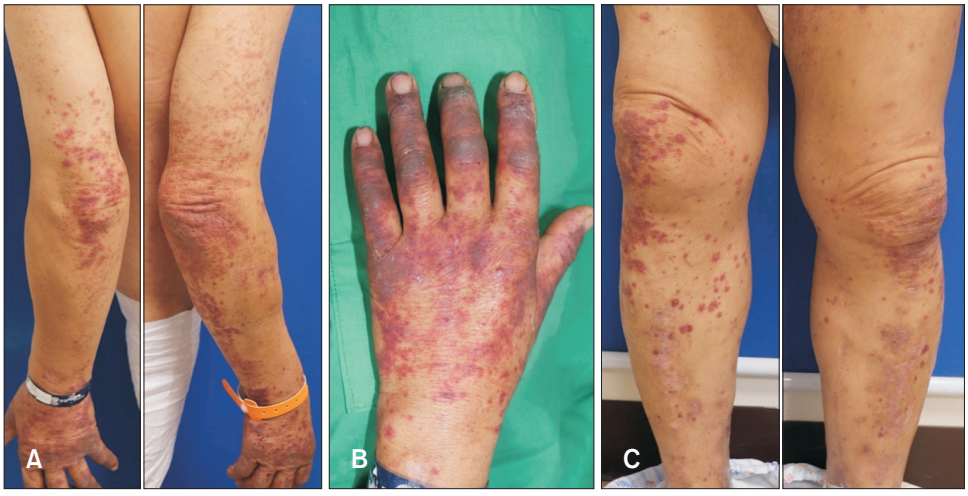

Fig. 1. (A~C) Widespread palpable purpura with vesicles on both extremities. (B) Joint swelling was observed in finger joints and the patient complained of joint pain (we received the patient's consent form about publishing all photographic materials).

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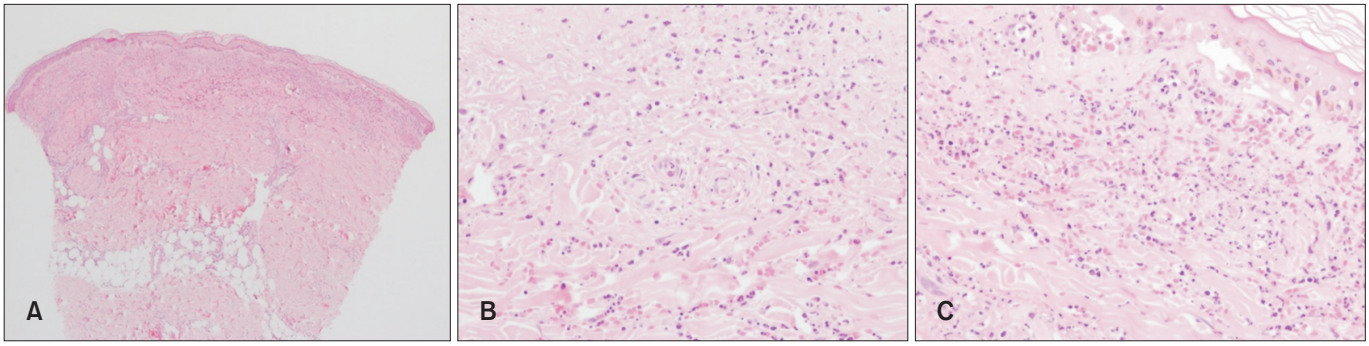

Fig. 2. Histopathologic photomicrographs, H&E staining: leukocytoclastic vasculitis with numerous neutrophils, extravasated red blood cells, a few lymphocytes, and occasional eosinophils on the upper dermis. Subcorneal blisters were also observed. (A) Magnification at ×40, (B, C) magnification at ×400.

vasculitis in the upper dermis. Subcorneal blistering was also observed (Fig. 2). The serum IgA level was elevated to 676 mg/dl. In combined, he was diagnosed with IgAV. The skin lesions improved rapidly after administration of systemic steroids. And it was decided the patient should not receive a second dose.

IgAV is thought to represent an immune-mediated vasculitis triggered by a variety of antigens. There are a lot of case reports of IgAV following vaccination, and a case-control study found increased risk of IgAV within 12 weeks after vaccination with the measles-mumps-rubella (MMR) vaccine but not with other vaccines[2].

To the best of our knowledge, so far there have been only two cases of IgAV in patients who received the Pfizer® COVID-19 vaccine and Moderna® COVID-19 vaccine[3,4]. Although no cases of vasculitis after the AstraZeneca® COVID-19 vaccine have been reported previously, the mechanism may be the same as other vaccines. A possible mechanism of exacerbation may be similar to that hypothesized for influenza vaccines, leading to vascular damage secondary to aberrant immune activation by vaccine-associated antigens that promote antibody development and immune complex deposition[5].

There is a possibility that IgAV was caused by an infectious agent. However, since no bacteria were identified in the wound at the time of hospitalization and IgAV occurred before toe necrosis progressed, vaccine-induced IgAV was more likely.

There have been only a handful of cases of vasculitis caused by COVID-19 vaccines. However, more cases are expected in the future. Vasculitis can occur after the first or second inoculation, and if it occurs following the first inoculation, whether or not to administer the second should be determined at the doctor's discretion. However, the more severe reaction may occur after the second vaccination. In fact, in the case reports of Cohen et al.[5], palpable purpura became severe after the second dose of the Pfizer® COVID-19 vaccine. Healthcare providers and patients should be aware that IgA vasculitis can occur after the COVID-19 vaccine.

CONFLICTS OF INTEREST

The authors have nothing to disclose.

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