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LETTER TO THE EDITOR

Case of immunoglobulin A vasculitis following coronavirus disease 2019 vaccination

Dear Editor,

Vaccines are expected to prevent the onset and exacerbation of coronavirus disease 2019 (COVID-19) caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). Here, we report a rare case of immunoglobulin (Ig)A vasculitis following COVID-19 vaccination.

A 70-year-old woman presented with palpable purpura on her feet (Figure 1a). The purpura appeared on the toes and spread to the dorsum; vesicles and crusting were observed. There was no history of any antecedent infections, but she had a history of rheumatoid arthritis, which had been treated with adalimumab for 9 months. She had also received hemodialysis for 10 years. Two days before presenting to the clinic, she had received the second dose of the Pfizer–BioNTech COVID-19 vaccine. No fever, fatigue, or headache was observed after the vaccination. Laboratory tests showed elevated levels of C-reactive protein (5.76 mg/dL [normal, 0.00–0.14]). Serum levels of IgG and IgA were also elevated (2110 mg/dL [normal, 861–1747] and 734 mg/dL [normal, 93–393], respectively). White blood cell count, platelet count, liver function, and antineutrophil cytoplasmic antibodies were all within normal levels. Urine samples could not be obtained. Histopathological findings showed spongiosis in the intraepidermal bulla and infiltration of neutrophils and lymphocytes with nuclear dust of neutrophils around the small vessels in the upper dermis (Figure 1b). Erythrocyte extravasation and fibrinoid degeneration were also observed (Figure 1c). Direct immunofluorescence revealed granular IgA deposition in the superficial dermal vessels (Figure 1d). A diagnosis of IgA vasculitis was made. The skin lesions resolved spontaneously in 3 weeks without relapse for more than 2 months after the onset of the disease. Joint symptoms did not get worse and no digestive symptoms were observed.

The pathogenesis of IgA vasculitis has yet to be fully elucidated. However, a variety of drugs and infections are recognized as possible triggers. Vasculitis has been reported as an adverse event following various vaccines, and the diagnosis of Henoch–Schönlein purpura was most frequently reported.[1] In the phase 3 trial of the Pfizer–BioNTech COVID-19 vaccine, severe systemic events were reported in fewer than 2% of vaccine recipients after the second dose.[2] However, cutaneous manifestations have not been described in the literature. Vasculitis seems to be a very rare side-effect that may occur with COVID-19 vaccines.[3] To our knowledge, there has been only one case of IgA vasculitis following COVID-19 vaccination.[4] In this case, there was a history of COVID-19 and IgA vasculitis developed after the first dose of COVID-19 vaccine. It was speculated that IgA antibodies against SARS-CoV-2 enhanced the development of cutaneous purpuric dermatitis with immune complex deposition after COVID-19 vaccination.[4] IgA vasculitis has also been reported in patients with immune-mediated inflammatory diseases treated with tumor necrosis factor inhibitors, and there has been a case of a patient with Crohn's disease in clinical remission under adalimumab, who developed IgA

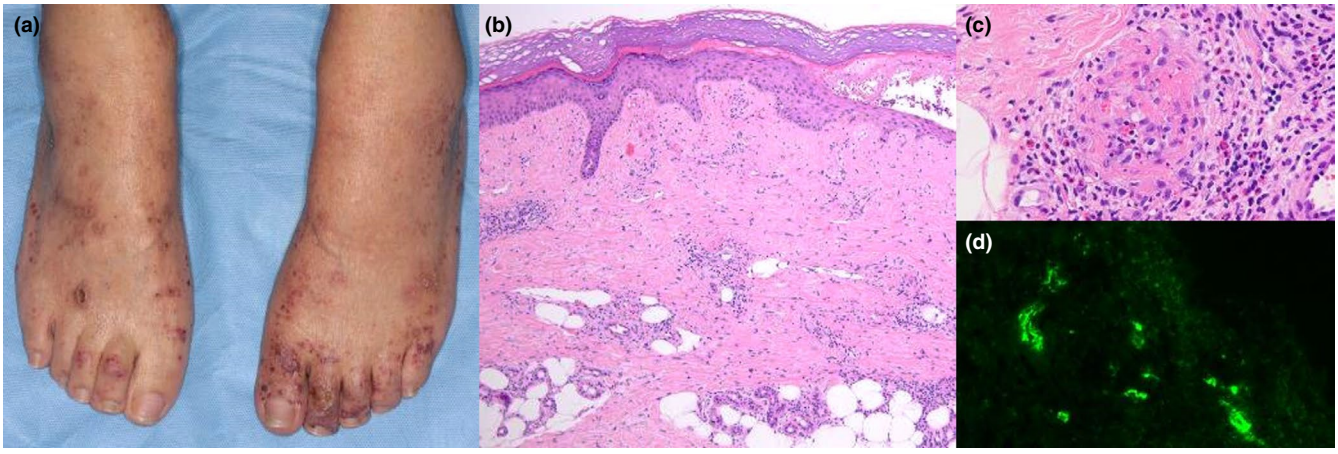

FIGURE 1 (a) Purpura, vesicles, and crusting on the feet. (b) Histopathology showing intraepidermal bulla and inflammatory infiltration around the small vessels in the upper dermis (hematoxylin–eosin [HE], original magnification ×100). (c) Histopathology showing leukocytoclastic vasculitis with erythrocyte extravasation and fibrinoid degeneration (HE, ×400). (d) Direct immunofluorescence showing granular immunoglobulin (Ig)A deposition in the superficial dermal vessels

vasculitis associated with COVID-19.[5] Given that skin lesions resolved spontaneously without relapse during treatment with tumor necrosis factor (TNF) inhibitors in our case, it is speculated that IgA vasculitis was induced by COVID-19 vaccination, and not TNF inhibitor.

CONFLICT OF INTEREST

None declared.

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