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Conflict of interest

None to declare.

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Immune thrombocytopenic purpura associated with COVID-19 Pfizer-BioNTech BNT16B2b2 mRNA vaccine

To the Editor:

A 74-year-old Caucasian male patient presented to Dermatology Department with multiple haemorrhagic blisters on oral and nasal mucosa and purpuric rash on lower extremities. The cutaneous lesions appeared for the first time a day before admission, firstly on patient's thighs and then spread to lower legs and forearms. Moreover, that morning patient woke up with blood on his pillow. According to the anamnesis, on the day preceding the appearance of the symptoms, the patient received first dose of Pfizer (New York, NY, USA) – BioNTech (Mainz, Germany) BNT16B2b2 mRNA vaccine. On admission, physical examination revealed multiple haemorrhagic blisters on oral and nasal mucous membranes of various size (Fig. 1a). Moreover, purpuric rash localized on lower legs, thigs and forearms was visible (Fig. 1b). At the injection site, an ecchymosis of 2 cm in diameter was observed (Fig. 1c). The patient did not report any subjective symptoms associated with mucous and cutaneous lesions. Besides hypertension, the patient did not suffer from any other chronic diseases. There was no history of abnormal bleeding or family history of coagulopathies. The performed laboratory examinations revealed severe thrombocytopenia ($2*10^9$/L), with normal clotting parameters. Normal D-dimers concentration permitted us to exclude the associated thrombosis. Based on clinical manifestation and laboratory tests, immune thrombocytopenic purpura associated with SARS-CoV-2 vaccine was diagnosed. The patient was transferred to Hematology Department, where, to the best of our knowledge, he was put on bolus

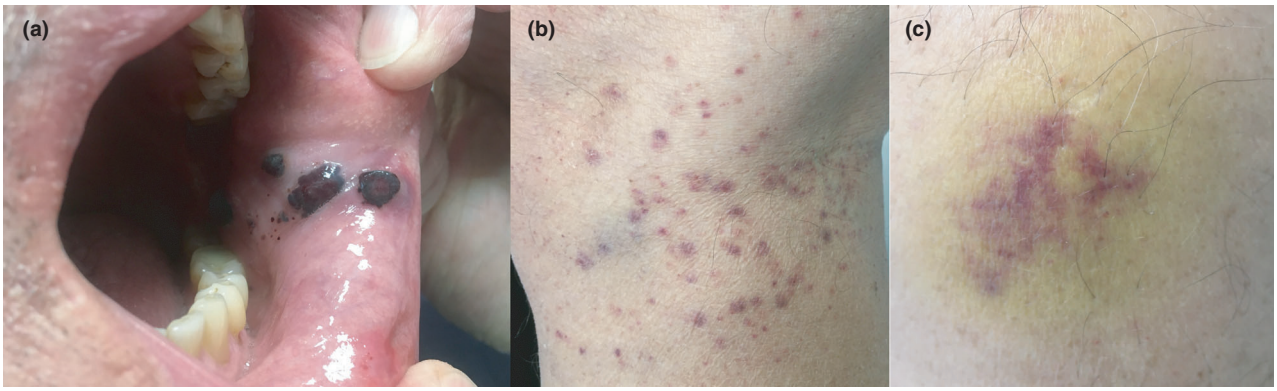

Figure 1 Mucosal haemorrhagic blisters (a), purpuric rash on lower extremity (b) and ecchymosis on patient's arm (c).

injections of 40 mg of dexamethasone for the three consecutive days. Moreover, platelet transfusion was performed.

Immune thrombocytopenia (ITP) is an immune-mediated disease defined by a decrease in platelet count, typically without signs of leukopenia and anaemia, which may be a cause of a life-threatening bleeding.[1] It may be idiopathic; however, it is usually caused by an infection with Epstein–Barr, varicella-zoster or influenza viruses. It can also occur after vaccine administration, especially measles-mumps-rubella (MMR), hepatitis A and B, diphtheria-tetanus-acellular pertussis (DTaP) and varicella.[2] Recently, numerous ITP cases after COVID-19 ChAdOx1 vaccine were described.[3] The adverse reactions lead to an international doubt in AstraZeneca vaccine. Specific guidelines for COVID-19 vaccine-induced thrombosis and thrombocytopenia (VITT) management have been proposed.[3,4] The appearance of immune thrombocytopenic purpura, after other COVID-19 vaccines, besides some press releases, has been rarely reported in the literature. Recent review by Lee *et al.*[5] grouped nine patient with ITP after of BNT16B2b2 vaccine. Two of them presented with gum bleeding or buccal bullae, some of them developed petechiae, and only one suffered from disseminated purpuric rash.[5] Only one patient presented with symptoms as early as the day after the vaccination; nevertheless, the majority of them reached similar platelet count as in our patient. A few patients with immune thrombocytopenic purpura without thrombosis associated with COVID-19 mRNA 1273 (Moderna) vaccine have also been described.[6] The management of ITP in above-mentioned patients consisted of mainly systemic corticosteroids and platelet transfusions. To the best of our knowledge, this is the first case of immune thrombocytopenic purpura reported in dermatologic literature. Dermatologists should be aware of the possibility of the development of ITP with subsequent mucous and cutaneous lesions after COVID-19 vaccination, not only related to ChAdOx1 vaccine. Further observations will help in establishing the real risk of the development of immune thrombocytopenic purpura after particular COVID-19 vaccines.

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