Eosinophilic pustular folliculitis developing at the site of COVID-19 vaccination

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Dear Editor,

A 38-year-old Japanese woman presented with scattered itchy folliculocentric papules on her left upper arm (Fig. 1a). There were no eruptions at other sites, and no systemic symptoms, including fatigue or fever. The patient had received her first COVID-19 vaccine (BNT162b2; Pfizer-BioNTech) 11 days before presentation, and had first noticed the papules 2 days later (9 days before presentation). She had not applied anything to her arm. She had no history of allergic reactions to other vaccines or to disinfectants, and no history of HIV infection.

Three weeks after her first vaccination, the patient received her second vaccination, and similar eruptions appeared 2 days later (Fig. 1b).

We attributed the eruption to the second vaccination. A skin biopsy was taken from the site, and histopathological examination showed features of folliculitis and perifolliculitis with a mixed cell infiltrate of eosinophils and some neutrophils. In particular, the upper portion of the hair follicle was damaged and replaced by ballooned follicular epithelia with a sprinkling of eosinophils. There was no remarkable epidermal change as would be seen in contact dermatitis (Fig. 2a–d). Immunohistopathological examination revealed that most of the infiltrated mononuclear cells were positive for CD3 and CD4.

We diagnosed these papules as eosinophilic pustular folliculitis (EPF), most likely caused by the COVID-19 vaccine, because similar eruptions developed at the injection site both times. The area of eruption extended beyond the injection site, possibly due to vaccine spread around the injection site in the course of being absorbed into the body.

We treated the patient with topical steroid, and the rash improved within 10 days.

According to recent reports, the common cutaneous reactions to the mRNA-based COVID-19 vaccines (Moderna and Pfizer) are pruritic erythema, swelling, pain, urticaria, morbilliform rash and erythromelalgia.1 According to previous reports, some drugs and subcutaneous...
silicone injections can induce EPF,\(^2\) therefore it seems likely that vaccination can also cause EPF. We therefore considered that this case was drug-induced EPF, similar to the classic EPF (Ofuji disease). Another report suggested that skin-tropic viral reactivation of human polyomaviruses\(^6\) might be related to the development of EPF,\(^3\) and there is a possibility that similar reaction occurred in our case. Some authors have reported that histological features of delayed large local reaction include slight perivascular infiltration of lymphocytes and eosinophils,\(^5\) while other authors have reported perivascular and perifollicular infiltration of lymphocytes and scattered eosinophils and mast cells.\(^5\) Although these histological characteristics are similar to those of our case, the perifollicular infiltration of lymphocytes was more severe in our case than in previously reported cases. We speculate that this is because follicular papules were observed in our case, although it is unknown why so many CD4-positive T cells infiltrated around follicles and why EPF developed in our case. We believe that the follicles were destroyed because severe infiltration of inflammatory cells caused ballooned follicular epithelia as a secondary change. Some genetic or racial factors might influence the development of EPF in our case. Further evaluation for the cutaneous reactions to mRNA-based vaccines is needed.

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| Conde-Taboada A et al. Clin Exp Dermatol 2022; 47: 578–80. |

Dear Editor,

The COVID-19 pandemic greatly affected healthcare systems all over the world, with a negative impact on patient management, and different preventive measures were used in different countries and centres in order to ensure continuity of care. In this context, we read with great interest the articles published recently in Clinical and Experimental Dermatology by Wolinska et al. and Conde-Taboada et al. focusing on the impact that COVID-19 pandemic had on the diagnosis, prognosis and management nonmelanoma skin cancer (NMSC). In particular, the two reports showed contrasting results on the number of diagnoses of NMSC.1,2

We report data from our centre on the impact that COVID-19 had on NMSC diagnosis, management and prognosis of NMSC. Patients referred to our dermatological centre with NMSCs from 10 March 2019 to 9 March 2022 were included in the study. In particular, all newly diagnosed, histologically confirmed NMSCs, including basal cell carcinoma (BCC), squamous cell carcinoma (SCC) and other NMSCs were selected and included in the dataset. The enrolled patients were classified into three different groups, based on the time period (P): (i) P1 (pre-lockdown, from 10 March 2019 to 9 March 2020); (ii) P2 (lockdown and post-lockdown, from 10 March 2020 to 9 March 2021); and (iii) P3 (1 year after lockdown, from 10 March 2021 to 9 March 2022).

In total, 6812 patients with newly diagnosed NMSC (4128 men and 2684 women), with a mean age of 63.7 years, were enrolled in the study. Data concerning NMSC incidence in the three different time periods evaluated and the stage of the cancer at time of diagnosis were collected (Table 1). The three groups were comparable for sex, age and NMSC localization. Interestingly, although the number of BCCs and SCCs were slightly lower in the P2 group than the P1 and P3 groups, this difference was not statistically significant.

Hence, our results are in line with those reported by Conde-Taboada et al., who also reported no significant differences in NMSC features before, during and after the COVID-19 emergency, but in contrast with the findings reported by Wolinska et al., who found increased rates of both high-risk SCCs and high-risk BCCs from 2019 to 2020. The impact of COVID-19 era had variable effects on NMSCs in different dermatological centres, probably due to differences in or...