

LETTER TO THE EDITOR

Oral lichen planus following mRNA COVID-19 vaccination

In the global pandemic of COVID-19, vaccines have played a pivotal role in managing the outbreak and are administered globally (Samaranayake et al., 2021). The SARS-CoV-2 mRNA vaccine BNT162b2 (Pfizer/BioNTech) is a lipid nanoparticle-formulated nucleoside-modified mRNA that encodes the receptor-binding domain of the SARS-CoV-2 spike protein (Samaranayake et al., 2021). Recently, reports demonstrated the association of BNT162b2 vaccination and lichen planus (LP) (Herzum et al., 2021; Hiltun et al., 2021; Merhy et al., 2021; Piccolo et al., 2022). Here, we report a case of oral lichen planus (OLP) following the administration of the BNT162b2 vaccine. To our knowledge, this side effect has not been reported elsewhere.

A 28-year-old Thai woman was referred to the Oral Medicine Clinic at the Dental Hospital, Faculty of Dentistry, Naresuan University, with a 6-week history of oral mucosal discomfort and burning sensations that had developed one week following the administration of the second dose of mRNA COVID-19 vaccine (BNT162b2, Pfizer/BioNTech). In addition, the patient had suffered from flu-like symptoms for two days immediately after the vaccination. The extraoral examination was unremarkable. However, the intraoral examination revealed white papular and striated bilaterally of the buccal mucosa and tongue as the classical image of OLP (Figure 1). A biopsy at the left buccal

mucosa was taken, and the histopathological findings confirmed a diagnosis of OLP. Routine serological investigations for hepatitis B, hepatitis C, and HIV were unremarkable. The patient was prescribed a topical steroid, fluocinolone acetonide 0.1% in orabase paste, for two weeks, which significantly improved her symptoms.

Lichen planus is a T-cell-mediated inflammatory disease involving mucocutaneous, and its pathogenesis is unclear. However, vaccine-induced LP is reported in hepatitis B, influenza, or herpes zoster vaccinations (Lai & Yew, 2017). Therefore, for COVID-19 vaccination, it might be possible which the underlying mechanism as autoimmune development triggered by epitope. Another possible mechanism is vaccine-associated hyperviscosity (Mungmunpantipantip & Wiwanitkit, 2021).

Although OLP has been reported in the COVID-19-vaccinated patients (Troeltzsch et al., 2021; Sharda et al., 2022; Kulkarni & Sollecito, 2021), including the present case report, there is no definitive evidence demonstrating a direct link between COVID-19 vaccines and OLP. Further observations will be validated to confirm whether this condition is genuinely related to the vaccine or coincidental and to explore the precise underlying mechanism. However, the continuation of the vaccination campaign could lead to an increase in reports of OLP. Therefore, healthcare providers



FIGURE 1 Image of the right buccal mucosa (a) and the left buccal mucosa (b) showing papular and reticular white striae; image of the dorsal tongue (c) and the ventral tongue (d) showing plaque-like OLP manifestations

should be aware of the possibility of this disease after the COVID-19 vaccination.

KEYWORDS

BNT162b2, COVID-19, COVID-19 vaccine, oral lichen planus

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CONFLICT OF INTEREST

None to declare.

AUTHOR CONTRIBUTIONS


Ruchadaporn Kaomongkolgit: Conceptualization; Investigation; Supervision; Validation; Writing – original draft; Writing – review & editing. **Wanlada Sawangarun:** Investigation; Writing – review & editing.

PEER REVIEW

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DATA AVAILABILITY STATEMENT

The data sets used and analyzed during the current study are available from the corresponding author on reasonable request.


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