OLGU SUNUMU CASE REPORT

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Two Cases of New-Onset Lichen Planus Following BNT162b2 mRNA COVID-19 Vaccine

BNT162b2 mRNA COVID-19 Aşısını Takiben Gözlenen İki Yeni Başlangıçlı Liken Planus Vakası

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ABSTRACT Various cutaneous side effects have been reported to be observed following coronavirus disease-2019 (COVID-19) vaccination. Urticaria, maculopapular eruption, vasculitis, pityriasis rosea, psoriasis and papulovesicular exanthem are some dermatological diseases which are observed after COVID-19 vaccination. Hyperinflammatory environment resulting from the cytokine storm in the setting of COVID-19, immune complex deposition and direct cytopathic effects of the virus are implicated in the etiopathogenesis of the dermatological manifestations. Infectious agents, immunologic factors, vaccinations and drugs have all been blamed in the emergence of lichen planus. With the cases presented in this case report, we would like underline that new-onset cutaneous lichen planus may be seen after mRNA COVID-19 vaccination.

Keywords: COVID-19; lichen planus; vaccination

ÖZET Koronavirüs hastalığı-2019 [coronavirus disease-2019 (COVID-19)] aşısının uygulanmasını takiben çeşitli deri yan etkileri bildirilmiştir. Ürtiker, makülopapüler ekzantem, vaskülit, pitriyazis rozea, psöriyazis ve papüloveziküler ekzantem COVID-19 aşılanmasının ardından gözlenen dermatolojik hastalıklardan bazılarıdır. COVID-19 sırasında izlenen sitokin fırtınasından kaynaklanan hiperinflamatuar çevre, immün kompleks birikimi ve virüsün direkt sitopatik etkisi dermatolojik bulgularla ilişkilendirilmiştir. Liken planusun gelişiminde enfeksiyöz ajanlar, immünolojik faktörler, aşılar ve ilaçlar suçlanmıştır. Olgu sunumu ile yeni başlangıçlı liken planus vakalarının mRNA COVID-19 aşısı sonrası gözlemlenebileceği vurgulamak istedik.

Anahtar Kelimeler: COVID-19; liken planus; aşı

Cutaneous lichen planus (LP) is a chronic, inflammatory, T-cell mediated skin disorder characterized by violaceous, dome-shaped, pruritic, polygonal papules and plaques mainly involving the ankles and wrists.[1] The etiology of LP remains unclear but infectious agents, immunologic, genetic, and drugs have all been implicated in the development of LP. Hepatitis B, herpes zoster and influenza vaccines have also been associated with cases of new-onset LP.[2] Herein, 2 cases of new-onset LP after mRNA coronavirus disease-2019 (COVID-19) vaccination, are reported.

Informed consent and permission for publication of medical images and clinical details were taken from the patients.

CASE REPORT

CASE 1

A 24-year old man was referred to the outpatient dermatology clinic due to the emergence of prurituc, purple, dome-shaped, scaly papules and anular plaques mainly involving the wrists, flexor forearms and dorsal feet compatible with LP (Figure 1). No mucosal involvement was detected. He didn't have any other known disease and he was not currently using any medication. In February and March 2021, 2 doses of inactivated COVID-19 vaccine were administered one month apart. The skin lesions were not present at that time. In August 2021, he had the first dose of BNT162b2 mRNA COVID-19 vaccine

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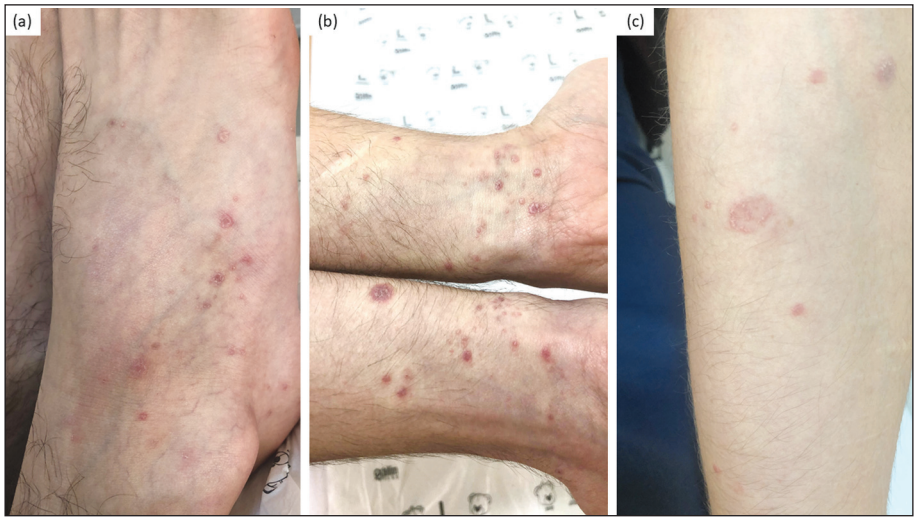

FIGURE 1: Violaceous-erythematous, polygonal, polished, flat-topped papules on the dorsal foot **(a)**, wrists **(b)** and anular plaques on the flexor forearm **(c)**.

FIGURE 2: Skin-colored/pink, dome-shaped papules upon the dorsal foot (a, arrows) and dorsal hand with koebnerization (b, arrows).

as the third shot. Upon questioning, the patient reported that the skin lesions had started around the wrists in the form of erythematous papules approximately 2 weeks after the application of mRNA COVID-19 vaccine. Fasting glucose level was normal; hepatitis-human immunodeficiency virus (HIV) markers were all negative; the patient didn't report to have any recent infection or use any drug which would trigger LP. Oral antihistamines and topical clobetasol propionate were prescribed resulting in partial regression. Informed consent was taken from the patient for the reporting of the case details.

CASE 2

A 42-year old woman was consulted to the outpatient clinic due to the appearance pink/skin-colored, dome-shaped, polished, mildly pruritic papules upon the dorsal feet and right dorsal hand with koebnerization compatible with LP (Figure 2). No oral or genital involvement was detected. She didn't have any other known disease and wasn't currently on any treatment. Upon questioning, it was learnt that 2 doses of BNT162b2 mRNA COVID-19 vaccine were applied 1 month apart and the cutaneus lesion had appeared approximately 3 weeks after the 2nd dose of the vaccine. Hepatitis, HIV markers and fasting glucose levels were all within the normal range. Conservative treatment with topical corticosteroids relieved the symptoms. Informed consent was taken from the patient for the reporting of the case details.

DISCUSSION

Cutaneous LP is a chronic, heterogeneous, T-cell mediated skin disease which is accepted as the prototype of all lichenoid dermatosis. LP can also involve the

nails, hair and mucosal areas creating miscellaneous clinical morphologies.[1] Viral agents, certain drugs and vaccines have been related to the development of LP.[3] Temporal associations with the administration of influenza, hepatitis B, tetanus-diphtheria-acellular pertussis and rabies vaccines have also been reported in the literature.[3] Hiltun et al. reported a case of cutaneous LP which appeared 48 hours after the administration of second dose of mRNA COVID-19 vaccine in patient with a previous history of LP.[3] Another interesting case of mRNA COVID-19 vaccine induced LP upon the areas previously affected by vitiligo, was observed 5 days after the application of first dose of mRNA COVID-19 vaccine.[4] Additionally, 2 cases of new-onset oral LP following COVID-19 vaccine were also reported.[5,6] COVID-19 vaccine has been shown to increase the levels of Th1-derived cytokines, interleukin-2, tumor necrosis factor-alpha and interferon-gamma which are also implicated in the pathogenesis of LP.[7] Induction of Th1 cytokines with the application of COVID-19 vaccine, most likely results in the development of lesions compatible with LP.

In conclusion, by reporting 2 cases of new-onset LP following the administration of COVID-19 vaccine, we would like to emphasize once again that mRNA COVID-19 vaccine may have mild cutaneous side effects which can be treated with conservative approach. Dermatologist play an important role in the diagnosis and proper management of the cutaneous side effects of COVID-19 vaccine.

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Conflict of Interest

No conflicts of interest between the authors and / or family members of the scientific and medical committee members or members of the potential conflicts of interest, counseling, expertise, working conditions, share holding and similar situations in any firm.

Authorship Contributions

This study is entirely author's own work and no other author contribution.

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