

Clearance of recalcitrant verruca plana following COVID-19 vaccination



To the Editor: Human papillomavirus (HPV) is a virus that infects keratinocytes. Despite the presence of a wide armamentarium for the management of warts, they are often notoriously resistant to treatment. Of late, various studies have reported the development of many inflammatory dermatoses and cutaneous adverse events following the administration of COVID-19 vaccination. Herein, we report a case of spontaneous clearance of warts following 2 doses of the recombinant ChAdOx1 nCoV-19 coronavirus vaccine.

A 27-year-old male patient presented to our institution with multiple verruca plana over the mandibular and bilateral temple area for 12 months (Fig 1). The patient was subjected to 2 sessions of radiofrequency ablation 10 months ago. Within 2 months of treatment, his warts recurred. Following this recurrence, intralesional immunotherapy using Measles, Mumps, and Rubella vaccine was advised; however, the patient refused to undergo the therapy.

Three months ago, the patient received 2 doses of the COVID-19 vaccine. Approximately 10 days after the second dose of the vaccination, the patient reported that his verrucous lesions started flattening on their own. Within the next 1 week, almost all of his warts partially regressed. Physical examination revealed significant improvement in the number and size of warts (Fig 2).

Because of the absence of viremia, warts often escape the innate immune system. A spontaneous reduction in verruca has been sparsely reported after COVID-19 infection, with only 2 reported cases so far.^{1,2} Erkeyman and Bilen¹ have proposed that because of a complex interaction between the humoral and cellular immunity following COVID-19, warts may resolve on their own. The upregulation of type 1 interferons and CD4 and CD8 Th1 responses have been attributed to clear warts after COVID-19 infection. Additionally, cytokines such as interleukin 1, tumor necrosis factor α , interleukin 6, and interleukin 12, which are responsible for visceral damage in COVID-19 infection, could also cause the destruction of HPV-infected keratinocytes. COVID-19–induced hypoxia can also preferentially damage HPV-infected keratinocytes.

Because the COVID-19 vaccine shares a common spike protein with the virus, the above-mentioned mechanisms can also be responsible for the regression of warts following vaccination.

Vaccine-induced immunotherapy using Measles, Mumps, and Rubella; Bacillus Calmette-Guérin; Mycobacterium w vaccine; and HPV vaccines; Candida; Trichophyton antigens; has been well established as an effective and reliable treatment option for tackling multiple and recalcitrant warts. Immunotherapy mounts delayed cell-mediated and Th1-driven immune responses against the viral particles. The HPV vaccine also acts by mounting cross-protection against extragenital strains. The role of the same immune mechanisms can also be

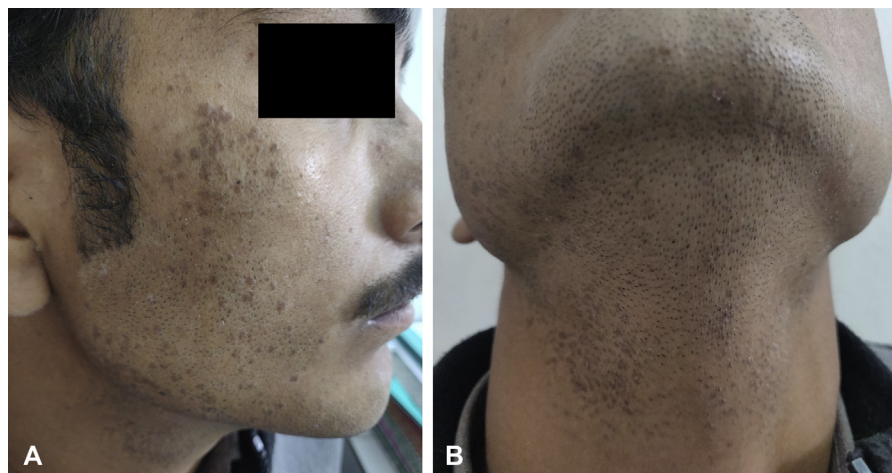


Fig 1. Multiple verruca plana over face at baseline (A, B).



Fig 2. Spontaneous partial clearance of warts following 2 doses of COVID-19 vaccination (A, B).

hypothesized for the efficacy of the COVID-19 vaccine against HPV.

During the peak of the pandemic, the protective roles of Bacillus Calmette-Guérin and Measles, Mumps, and Rubella vaccines against SARS-CoV-2 were being increasingly reported.^{3,4} Interestingly, preliminary reports have found that HPV vaccines are cross-protective against COVID-19.⁵ There seems to exist a complex interplay of vaccines being nonspecifically effective against various viral infections.

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Conflicts of interest

None disclosed.

REFERENCES

1. ErKayman MH, Bilen H. Clearance of longstanding treatment-resistant warts during COVID-19 in a transplant recipient. *Transpl Infect Dis.* 2021;23:e13572.
2. Demirbaş A, Eker H, Elmas ÖF, et al. COVID-19 and human papillomavirus: paradoxical immunity. *J Cosmet Dermatol.* 2021;20:2001-2003.
3. Taheri Soodejani M, Basti M, Tabatabaei SM, Rajabkhan K. Measles, mumps, and rubella (MMR) vaccine and COVID-19: a systematic review. *Int J Mol Epidemiol Genet.* 2021;12:35-39.
4. Gonzalez-Perez M, Sanchez-Tarjuelo R, Shor B, Nistal-Villan E, Ochando J. The BCG vaccine for COVID-19: first verdict and future directions. *Front Immunol.* 2021;12:632478.
5. Reche PA. Potential cross-reactive immunity to SARS-CoV-2 from common human pathogens and vaccines. *Front Immunol.* 2020;11:586984.

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