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A Case of Varicella Zoster Virus Reactivation Post COVID-19 Immunization

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Recent efforts to slow the COVID-19 pandemic have focused largely on immunization. With COVID-19 vaccines being readily available, approximately 55% of the United States population is now fully vaccinated, with many citizens having received one of the two available mRNA products. Both mRNA vaccines, produced by Pfizer and Moderna, have proven to be safe and effective in clinical trials.^{1,2} Since their introduction to the public, under Food and Drug Administration Emergency Use Authorization, the Vaccine Adverse Events Reporting System (VAERS) has continued to collect data on adverse events surrounding COVID-19 vaccination. Furthermore, anecdotal case reports have been published throughout the vaccination period on potential, but rare, adverse effects. Below, we present a case of herpes zoster status –post-COVID-19 vaccination with Pfizer’s BNT162b2 vaccine.

A 67-year-old male presented to the hospital with an erythematous, blistering rash under the right axilla, reported to have developed over the past week. Significant past medical history for the patient included renal transplant with subsequent immunosuppression using tacrolimus and prednisone; hypertension; and type II diabetes mellitus. It was noted that the patient received his second dose of Pfizer’s BNT162b2 mRNA COVID-19 vaccine 29 days prior to the rash development. Upon physical examination, the rash appeared macerated with scab formation, and the patient reported associated pain and fatigue. The patient was diagnosed with herpes zoster and prescribed both oral valacyclovir 1 gram 3 times daily and oral cephalexin 500 mg 3 times daily for 7 days. The lesions became dry and closed within 3 weeks, with pain persisting for several months. Of note,

the patient had not been vaccinated against herpes zoster in the past.

After primary infection, often manifested as chicken pox, varicella zoster virus (VZV) resides latently in the dorsal-root ganglia and cranial-nerve.³ Potential reactivation as herpes zoster, typically in older persons and immunocompromised states, often leads to the development of painful cutaneous lesions. Neurologic complications of herpes zoster may include postherpetic neuralgia, cranial or peripheral nerve palsies, meningitis, or encephalitis.⁴ Although a direct link between VZV reactivation and COVID-19 immunization has not been established, several case reports have been identified in literature. This includes herpes zoster development post-mRNA inoculation in individuals taking immunosuppressive medications, similar to our case.⁵ In a systematic review of herpes zoster activation

post-COVID-19 vaccination, the mean time to symptom onset was 4-9 days post-vaccination across included studies, earlier than our case.⁶ Furthermore, the systematic review highlighted an imbalance in the number of patients presenting with active herpes zoster after each dose of the studied 2-dose vaccines, with more patients developing active infection after the first dose. Currently, case reports of herpes zoster development post-COVID-19 inoculation include reports related to AstraZeneca-Oxford’s ChAdOx1 vaccine, Pfizer’s BNT162b2 vaccine, and Moderna’s mRNA-1273 vaccine.⁷ However, the mRNA-based products, particularly from Pfizer, have been implicated in most of the presently available case reports, possibly owing to its higher global utilization.⁸⁻¹¹ No report of post-inoculation herpes zoster development in phase 3 trial data for any vaccine was

Below: 67-year-old male noted to have macerated rash with scab formation post VZV treatment with valacyclovir.



found.^{1,2,12}

In conclusion, more research is needed before establishing any concrete association between herpes zoster and COVID-19 immunization. While dozens of herpes zoster cases status-post COVID-19 inoculation have been described in literature, primarily from mRNA-based products, no definitive link has been identified. Thus, it cannot be said with certainty whether the case presented today is the result of COVID-19 immunization or mere coincidence.

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