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# Herpes Zoster Ophthalmicus Following COVID-19 Vaccination: A Case Report

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# Herpes Zoster Ophthalmicus Following COVID-19 Vaccination: A Case Report

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## I. INTRODUCTION

**H**erpes zoster ophthalmicus (HZO) is an uncommon manifestation of herpes Zoster which affects the ophthalmic nerve. Ophthalmic manifestations of HZO include keratitis, dermatitis, conjunctivitis, trabeculitis, retinitis, choroiditis, conjunctivitis, scleritis, episcleritis, and cranial nerve palsies.

## II. CASE PRESENTATION

We report a case of herpes zoster ophthalmicus in a patient who had recently received the Johnson & Johnson COVID-19 vaccine.

A 57-year-old woman with history of hypertension and asthma was referred to the eye clinic due to concern for herpes zoster near the right eye. The patient received the Johnson & Johnson COVID-19 vaccine 5 days prior to the visit. She reports that she began having eye pain 2-3 days prior to the visit and then developed a rash.

She denied a history of cancer, diabetes mellitus, radiation therapy, or other conditions associated with systemic immunosuppression.

The visual acuity with her current glasses was 20/100 in the right eye and 20/40 in the left eye. The eye pressure was 16 in the right eye and 16 in the left eye. There was a vesicular rash on the right side of the face in the V1 distribution, including the right upper eyelid. The conjunctiva and sclera of the right eye was mildly injected, while the left eye was white and quiet. The cornea of both eyes was clear. The anterior chamber of both eyes was deep and quiet. The posterior segment exam was normal for both eyes. The patient was started on acyclovir 800 mg by mouth, 5 times daily.

The patient returned for follow up 7 days later. She felt that the rash was improving and that she was able to open her eye more. Eye examination showed

crusting of some of the vesicles (Figure 1). Her right cornea had a new epithelial defect and multiple punctate epithelial erosions (Figure 2). The patient was started on bacitracin ophthalmic ointment to the right eye and affected areas twice daily morning and night, with the option to use three times daily on affected areas if more needed, and continued acyclovir.

## III. DISCUSSION

This patient received the Johnson & Johnson (J&J) vaccine. While Pfizer and Moderna vaccines are made using mRNA to make a surface protein (known as "the spike") to activate the immune system; J&J vaccine uses a viral vectored vaccine, an adenovirus, to make spike proteins which then triggers the immune system to create antibodies.

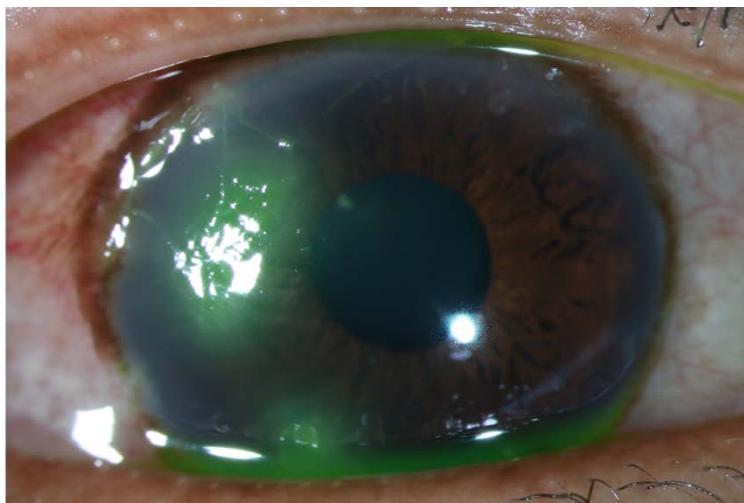
An observational study from Israel reported 6 cases of herpes zoster (HZ) after patients with autoimmune rheumatic diseases received the BNT162b2 mRNA COVID-19 vaccine (tozinameran, Pfizer).<sup>1</sup> Additionally, there have been case reports of patients without known autoimmune conditions that have experienced a reactivation of herpes zoster described in literature in European journals of medicine and dermatology.<sup>2</sup> Although this correlation is new, it is not necessarily unexpected, as there are other cases of HZO reactivation with recent stress or immunomodulation, such as spaceflight, recent vaccinations against influenza, hepatitis A, or rabies.<sup>3-5</sup>

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*Figures*

*Figure 1:* Vesicular rash in right V1 distribution.



*Figure 2:* Epithelial defect on right cornea.

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