

Panuveitis after covishield vaccination in an undiagnosed immunocompromised patient: A rare case report from Nepal

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Abstract

With the emergence of vaccines for the novel coronavirus, a new ray of hope came into human society. Yet the adverse effects of vaccination on some candidates without allergic tests might cause a detrimental change in the future. An interesting case of panuveitis in a 34-year-old male after the ChAdOx1 nCoV19 (covishield) vaccination is reported here. The respective management of the patient was done after comprehensive ocular and systemic evaluation. It is understood that vaccination is vital in controlling this pandemic, but the immunologic response due to this novel vaccine is also a concern.

Key words: Coronavirus disease 2019; Immunocompromised; Panuveitis; Vaccination.

INTRODUCTION

Since its declaration as pandemic, coronavirus disease 2019 (COVID-19) has caused devastating changes in worldwide health system. Hope came with development of vaccine against this virus. In Nepal, active vaccination campaign began on January 27, 2021, but only 55.4% had received second dose, while 47.4% had received first dose by February 1, 2021.¹ In this life-saving campaign,

one major setback is lack of an allergic response test before vaccination. The absence of this integral part could be excruciating for those who are unaware of their hidden morbidities. Thus, all health workers must be aware of the immunological responses to vaccination.

CASE REPORT

A 34 years old male presented to Sagarmatha Choudhary Eye Hospital with chief complaints of a sudden loss of vision in the left eye, four days following the second dose of Covishield vaccination. His unaided visual acuity was 1.77 log MAR in the affected eye. On ocular examination, there was diffuse conjunctival and ciliary congestion with few small-sized, non-granulomatous keratic precipitates (KP) on the lower paracentral left corneal endothelium. The pupil was irregular and sluggish due to the presence of posterior synechiae at eight and 10 o'clock hours (Figure 1). The anterior chamber had 4+ cells and 1+ flare, in conjunction with 4+ cells in the vitreous cavity making the posterior segment hazy.² The B-scan ultrasonography of the left eye showed a hyperechoic shadow suggestive of dense vitreous opacity both in high as well as low gain, along with posterior vitreous detachment, and choroidal thickening, and intact retina (Figure 2). Intraocular pressure was 18 and 16 mm of Hg in the right eye and left eye respectively on Goldman's Applanation Tonometry [Zeiss SL 120]. The right eye was within the normal limit. After going through haematological and serological investigation, human immunodeficiency virus (HIV), hepatitis B surface antigen

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(HBsAg), and venereal disease research lab (VDRL) tests were found reactive as a coincidental finding. However, the Polymerase Chain Reaction test (PCR) for COVID-19 was negative.

The patient was managed with topical steroid and cycloplegic medications along with systemic steroids. The patient was then sent to a nearby tropical hospital for further management and was advised to follow-up.

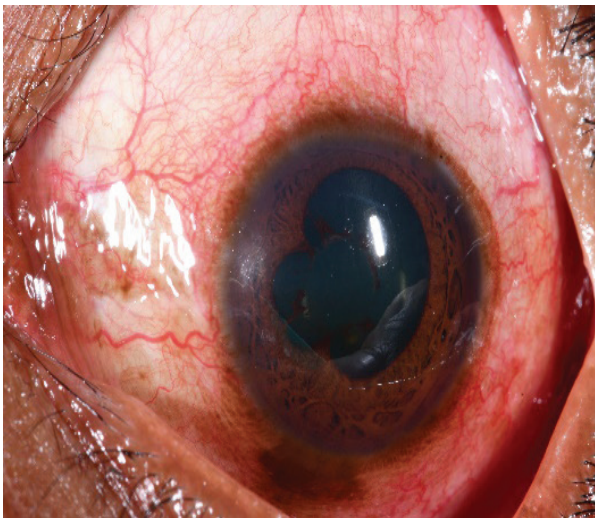


Figure 1: Anterior segment picture showing fine KPs and posterior synechiae with a festooned pupil

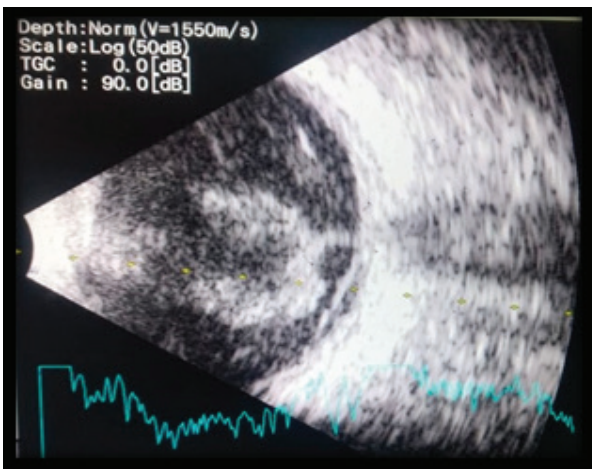


Figure 2: Hyperechoic pattern suggestive of dense vitreous opacity, posterior vitreous detachment, and choroidal thickening

DISCUSSION

Panuveitis or diffuse uveitis is the inflammation of all uveal components of the eye with no particular site of predominant inflammation.² Panuveitis with positive serological tests for HIV, HBsAg, and VDRL has been reported in different articles.³⁻⁵ The prevalence of panuveitis was found greater in Hepatitis C patients followed by Hepatitis B in one of the studies.⁵ There has been a case of panuveitis, where the patient got infected by a coronavirus and had a recurrent episode of ocular inflammation on steroid discontinuation.⁶ Direct correlation between the Covishield vaccine and Harada-like syndrome has also been reported.⁷ Lower potency vaccine among immune-compromised has been advocated by Chau et al. and has involved physician and ophthalmic consultation regarding the likelihood of vaccine-induced antibody-dependent enhancement of pre-existing inflammatory conditions.⁸

Regarding vaccines associated with uveitis, several theories have been proposed: 1) Direct via a live strain 2) Immune-related additives that were induced 3) Molecular mimicry of vaccines and ocular structures⁹ 4) Non-specific enhancement of the body's innate immune system.¹⁰ Immunosuppression is likely beneficial in dampening the hyper-inflammatory response, though in some immunocompromised individuals impairment of antimicrobial immunity may increase the viral load and drive inflammation. With these concepts in mind, we hypothesise that after the second jab, the compromised immune system may have been exacerbated and turned into a hyper-inflammatory state.

CONCLUSION

This case report cogitates prevaccination response test as the authors highlight vaccine-associated ophthalmic response in seropositive patients. This could be more excruciating than the jab.

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