Comment on: COVID-19 vaccine-associated reactivation of uveitis

Dear Editor,

We read with interest the article by Jain and Kalamkar.[1] They have described a patient who had bilateral uveitis in 2012 and had no relapse since then till the present episode. We would like to share two instances that are related to the present case report.[2,3] Our patient, who had unilateral granulomatous uveitis and intermediate uveitis, had a relapse of his anterior uveitis after coronavirus disease 19 (COVID-19). In this instance, the possible role of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) would have been a trigger. This may be similar to the case reported by Jain and Kalamkar,[1] where the anterior uveitis recurred after the COVID-19 vaccine. Our patient had been investigated for all possible causes of anterior uveitis, and all the tests were negative. The only positive finding was raised COVID-19 IgG antibodies.[2]

Second, another patient who had HLA-B27-related anterior uveitis who stopped his immunosuppression and adalimumab during lockdown of 8 weeks[3,4] had developed COVID-19 albeit with mild symptoms; however, he developed recurrence of unilateral non-granulomatous anterior uveitis 3 weeks later. It is possible that there might have been a recurrence due to cessation of his immunosuppression during the lockdown. He was free of eye symptoms for at least a month or more after stopping medication and during his admission for COVID-19. His eye symptoms started 3 weeks after discharge from the hospital.

Both our patients were not vaccinated against COVID-19.

Jain and Kalamkar[1] highlighted the fact that this could be possible due to the COVID-19 vaccine. Based on the existing evidence in medical literature, it is difficult to find an association or causal factor for the COVID-19 vaccine. Moreover, the authors could add the Naranjo scale[5] for their patients. The adverse drug reaction (ADR) probability scale was developed in 1991 by Naranjo *et al.* from the University of Toronto and is often referred to as the Naranjo scale. This scale was developed to help standardize the assessment of causality for all adverse drug reactions. The scale was also designed for use in controlled trials and registration studies of new medications, rather than in routine clinical practice. Nevertheless, it is simple to apply and widely used.

The adjuvants majorly effective in some genetically predisposed patients can cause an inflammatory syndrome.[6]

There is also a possible role of adjuvants, mostly aluminum salts used in the vaccines that act as immune-stimulatory molecules, which broaden the immune response.[7] The innate immunity stimulation occurs through endosolic or cytoplasmic nucleic acid receptors.[8]

Immune response following immunization may be triggered in autoimmune diseases, particularly those connective tissues diseases that are associated with an altered nucleic acid metabolism and processing.[9,10] The pathogenesis of uveitis should have been discussed by the authors.

We cannot rule out the possibility of either COVID-19 or COVID-19 vaccination acting as a trigger for new-onset ocular inflammation in our reported cases or the present case report.[2,3,11,12]

Post COVID-19 patients can have a dysfunctional immune system causing unregulated production of cytokines such as interleukin-6 (IL-6), IL-1b, IFN-g, MCP-1, IP-10, IL-4, and IL-10, leading to a downward spiral of immune-mediated end-organ damage.[13,14] This may also cause ocular manifestations such as uveitis.

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Conflicts of interest

There are no conflicts of interest.

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References

1. Jain A, Kalamkar C. COVID-19 vaccine-associated reactivation of uveitis. Indian J Ophthalmol 2021;69:2899-900.
2. Sanjay S, Mutalik D, Gowda S, Mahendradas P, Kawali A, Shetty R. "Post coronavirus disease (COVID-19) reactivation of a quiescent unilateral anterior uveitis". SN Compr Clin Med 2021:1-5. doi: 10.1007/s42399-021-00985-2.
3. Sanjay S, Kawali A, Mahendradas P, Shetty R. Lockdown effects on a patient receiving immunosuppression for unilateral HLA- B27 associated uveitis during COVID-19 pandemic. Indian J Ophthalmol 2021;69:1351-3.
4. Sanjay S, Garg A, Shetty R, Shetty N, Shetty BK. Impact of COVID-19 on a tertiary eye hospital. Indian J Ophthalmol 2020;68:1485-6.
5. LiverTox: Clinical and Research Information on Drug-Induced Liver Injury [Internet]. Bethesda (MD): National Institute of Diabetes and Digestive and Kidney Diseases; 2012–. Adverse Drug Reaction Probability Scale (Naranjo) in Drug Induced Liver Injury. 2019 May 4.
6. Sharifian-Dorche M, Bahmanyar M, Sharifian-Dorche A, Mohammadi P, Nomovi M, Mowla A. Vaccine-induced immune thrombotic thrombocytopenia and cerebral venous sinus thrombosis post COVID-19 vaccination; A systematic review. J Neurol Sci 2021;428:117607.
7. Ng XL, Betzler BK, Testi I, Ho SL, Tien M, Ngo WK, *et al*. Ocular adverse events after COVID-19 vaccination. Ocul Immunol Inflamm 2021:1-9. doi: 10.1080/09273948.2021.1976221.
8. Watad A, De Marco G, Mahajna H, Druyan A, Eltity M, Hijazi N, *et al*. Immune-mediated disease flares or new-onset disease in 27 subjects following mRNA/DNA SARS-CoV-2 vaccination. Vaccines (Basel) 2021;9:435.
9. Teijaro JR, Farber DL. COVID-19 vaccines: Modes of immune activation and future challenges. Nat Rev Immunol 2021;21:195-7.
10. Rodero MP, Crow YJ. Type I interferon-mediated monogenic autoinflammation: The type I interferonopathies, a conceptual overview. J Exp Med 2016;213:2527-38.
11. Sanjay S, Rao VK, Mutalik D, Mahendradas P, Kawali A, Shetty R. Post corona virus Disease-19 (COVID-19): Hyper inflammatory syndrome-associated bilateral anterior uveitis and multifocal serous retinopathy secondary to steroids. Indian J Rheumatol 0;0:0. (Published Ahead of Print) DOI:10.4103/injr.injr_330_20
12. Sanjay S, Singh YP, Roy D, Mahendradas P, Kawali A, Shetty R. Recurrent bilateral idiopathic anterior uveitis with vitritis post Coronavirus Disease 2019 infection. Indian J Rheumatol 0;0:0. (Published Ahead of Print) DOI: 10.4103/injr.injr_114_21.
13. Huang C, Wang Y, Li X, Ren L, Zhao J, Hu Y, *et al*. Clinical features of patients infected with 2019 novel coronavirus in Wuhan, China. Lancet 2020;395:497-506.
14. Zhong J, Tang J, Ye C, Dong L. The immunology of COVID-19: Is immune modulation an option for treatment? Lancet Rheumatol 2020;2:e428-36.

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