

Harada-like syndrome post-Covishield vaccination: A rare adverse effect

Yogya Reddy, Anamika Pandey, Ayushi Ojha,
Suresh Ramchandani¹

Covishield is in wide use in India with about 80% efficacy. Serious side effects are still under study. A 30-year-old female presented to us 7 days post-vaccination with a 5-day history of sudden diminution of vision in both eyes. The clinical findings were suggestive of the Vogt-Koyanagi-Harada (VKH) syndrome. She was treated with high-dose oral steroids. At this juncture, the association was unclear. However, it was justified by an acute flare-up of uveitis on day 2 post the second dose of vaccination despite ongoing steroids. A direct correlation of Harada-like syndrome with the Covishield vaccine is observed here.

Key words: Complications, Covishield vaccine, Harada disease, uveitis

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Department of Ophthalmology, MGM Institute of Health Sciences, ¹Department of Vitreo-Retina, Shivam Eye Foundation, Nerul, Navi Mumbai, Maharashtra, India

Correspondence to: Dr. Yogya Reddy, MGM Hospital, MGM Hospital, Sector-1, NH-4 Junction, Kamothe, Navi Mumbai - 410 209, Maharashtra, India. E-mail: yogyachappidi@gmail.com

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The expedited schedule for the development of COVID-19 vaccines came with a limitation of insufficient study of their side effects. At present, nine vaccines—CoronaVac, BioNTech/Pfizer, Moderna, ChAdOx1 (University of Oxford), Sputnik V, Covishield, Sinopharm, Covaxin, and Ad5-nCoV (Cansino Biologics)—are approved for use among which Covishield and Covaxin are widely used in India.^[1] There is an inevitable need for the assessment of vaccine-mediated adverse reactions considering public safety. Various anecdotal complications of the COVID-19 vaccines are reported to date in addition to common side effects such as fatigue, headache, malaise, and local side effects. Of our interest are the ophthalmological complications ranging from simple conjunctivitis to serious retinal conditions like arteritic anterior ischemic optic neuropathy (AAION), acute zonal occult outer retinopathy (AZOOR), acute macular neuroretinopathy, etc., that are being reported worldwide.^[2-4] Although considered as an immunological reaction secondary to the vaccine, the exact mechanism of these complications is still under study. Adding up to this list, a few cases of new-onset Vogt-Koyanagi-Harada (VKH) are reported worldwide to be associated with the COVID-19 vaccination.^[5-7] A 30-year-old lady presented to our clinic with Harada-like symptoms suspiciously secondary to the COVID-19 vaccination, which was considered incidental at first but was justified later with the dramatic worsening of the symptoms and flare-up of uveitis immediately after the second dose. To the best of our knowledge, this is the first case of its kind in our country, and hence, assumes its significance in the literature.

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Case Report

A 30-year-old female presented to our clinic with a 5-day history of sudden-onset painless blurring of vision in both eyes 7 days post the first dose of the Covishield vaccination. This was the only complaint on presentation and no similar episodes in the past were present. She denied a history of ocular trauma and ocular procedure. Her medical history, personal history, and family history were unremarkable. On examination, the distant visual acuity was finger counting @1 m in the right eye and finger counting in front of the face in the left eye with a near visual acuity of < N36 in both eyes. On slit-lamp examination, keratic precipitates (KPs) on endothelium, 3+ anterior chamber cells, and a few vitreous cells were seen in both eyes. The intraocular pressure was within normal limits in both eyes. On fundus examination, both eyes showed hyperemic disks, exudative retinal detachments with shifting fluid with no retinal breaks [Fig. 1]. On fundus fluorescein angiography, pinpoint leaks were seen in both eyes along with disk hyperfluorescence [Fig. 2] and ultrasound biomicroscopy showed retinal detachment with choroidal thickening in both eyes suggestive of the VKH syndrome. A diagnosis of Harada disease was made after ruling out the involvement of other systems and she was treated with high-dose oral steroids of 70 mg per day which was tapered gradually. At this juncture, the vaccination was believed to be just incidental although the scenario appeared suspicious. The patient was regularly followed up. She showed good improvement with the remission of uveitis. Over 7 weeks, her visual acuity improved to 6/9 with quiet eyes and a resolution of RD bilaterally. However, the second dose of the Covishield vaccine was taken during this period and she had an alarming drop of vision to 6/36 in both eyes on the following day. On examination, there was a reactivation of uveitis, with fresh Keratic precipitates (KPs), 3+ cell reaction in both eyes, and additionally posterior synechiae at 6 o'clock in the left eye [Fig. 3]. Nevertheless, the retina was flat this time accountable to the ongoing steroids of 20 mg per day. Her systemic steroid dosage is stepped up with the addition of topical steroids and cycloplegic. She shows good improvement currently.

Discussion

The VKH disease is defined as a severe bilateral, chronic granulomatous panuveitis associated with serous retinal detachments, disk edema, and vitritis, with the central nervous system, auditory, and dermatological manifestations. It is an autoimmune inflammatory condition mediated by T cells that target melanocytes.^[8] Genetic predisposition is seen in a majority of the cases; however, viral infections are suspected to be involved occasionally. VKH has been associated with various vaccines such as Hepatitis B, Hepatitis C, and yellow fever as well as a few biological drugs used in anti-cancer therapy.^[9] This can be attributed to the immunogenetic dysregulation that can be caused by the latter. The etiology of the occurrence of autoimmune diseases post-vaccination is unclear. However, molecular mimicry, bystander activation of the sequestered self-antigens, cytokines secretion from macrophages, and genetic polymorphisms are the four possible mechanisms of the same. There are high chances that similar effects can trigger autoimmune response post-COVID-19 vaccination. This is also supported by the reported cases of other autoimmune conditions like Guillain-Barre syndrome, systemic lupus erythematosus post-vaccination.^[10] Our patient showed an intriguing association of the onset of

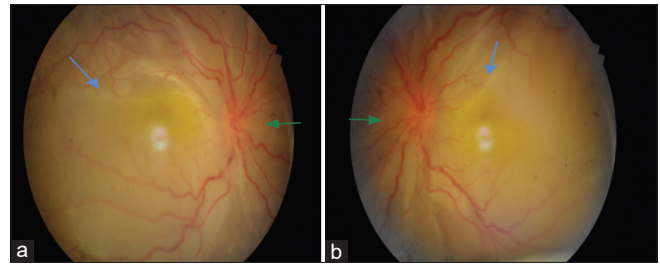


Figure 1: (a and b) Fundus photo of both eyes showing hyperemic disks (green arrow) and exudative retinal detachments (blue arrow)

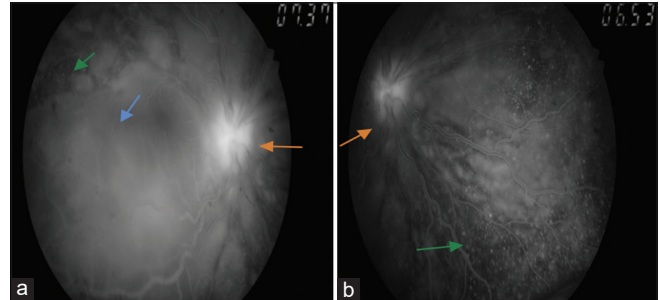


Figure 2: (a) Fundus fluorescein angiography of the right eye showing pinpoint leaks (green arrow), disk hyperfluorescence (orange arrow), and pooling suggestive of exudative retinal detachment (blue arrow) in the late venous phase. (b) Fundus fluorescein angiography of the left eye showing pinpoint leaks (green arrow) and disk hyperfluorescence (orange arrow) in the late venous phase

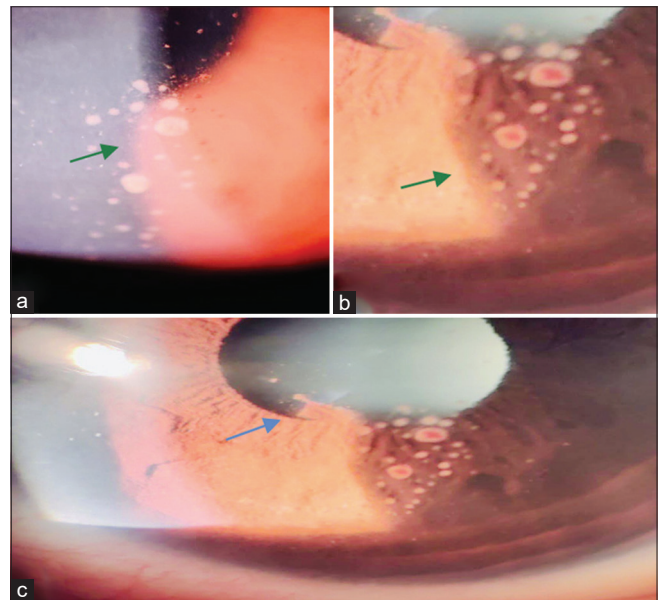


Figure 3: (a) Slit-lamp image of the right eye showing fresh KPs (green arrow). (b) Slit-lamp image of the left eye showing fresh KPs (green arrow). (c) Slit-lamp image of the left eye showing posterior synechiae at 6 o'clock (blue arrow)

the Harada syndrome and Covishield vaccination which is justified by the acute worsening of the condition on the second dose despite the ongoing steroid. Favoring the possibility of causation, Saraceno JJF, *et al.*^[5] reported a case

of VKH syndrome in a 62-year-old female after COVID-19 immunization with the Oxford-AstraZeneca ChAdOx1 nCoV-19. The second case of VKH is reported in a 54-year-old man after receiving the first dose of COVID-19 messenger RNA (mRNA) vaccine (PFIZER-BioNTech/COMIRNATY) by Koong LR, *et al.*^[6] Adding to this list is a case of severe reactivation of VKH post-Pfizer vaccine administration.^[7] All three previously reported cases were still incidental and believed to be caused by the COVID-19 vaccine. Our case adds credence to the fact that Covishield was responsible for VKH as there was a sharp reactivation following the second dose after the disease was in remission with systemic steroids.

Conclusion

VKH syndrome and Harada disease can be potential side effects of Covishield vaccine.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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Nil.

Conflicts of interest

There are no conflicts of interest.

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