

## Eyelid Edema and Erythema Following COVID-19 Infection: A Case Report

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**Received:** October 19, 2022; **Published:** November 19, 2022

### Abstract

We report here the case of a 44-year-old female ophthalmologist who was taken care of at homecare setting for fever, sore throat, malaise, severe headache, nausea and vomiting following COVID-19 infection with suspected.

'Omicron variant' during third wave in India. Her RT-PCR for COVID-19 was positive. She noticed eyelid edema, erythema and lower bulbar conjunctival congestion of right lower eyelid on 8<sup>th</sup> day of illness on mirror-examination under torch-light. It disappeared within 24 hours. In previous waves of COVID-19, eyelid edema and erythema has been generally associated with serious systemic symptoms which needed hospitalization. This case demonstrates ever-changing paradigm of mutated corona variants and ocular manifestations.

**Keywords:** *Eyelid Edema; Erythema; COVID-19; Conjunctival Congestion*

### Introduction

COVID-19 was declared a pandemic in March 2020 by the World health organization (WHO). The common clinical presentations of COVID-19 are fever, cough, malaise, myalgia, dyspnea, tachypnea, hypoxia, gastrointestinal symptoms and conjunctivitis [1,2]. A cell-surface receptor called angiotensin converting enzyme 2 (ACE2) is responsible for binding of viral spike protein to target cells and entry of SARS-CoV-2 virus into cells [3]. ACE2 receptor expression by tissues leaves them susceptible to this virus [4,5]. The ocular surface, trabecular meshwork, aqueous humor, iris, ciliary body, nonpigmented ciliary epithelium, and retina has got intraocular renin-angiotensin system [6].

### Case Report

A 44-year-old female ophthalmologist complained of mild fever, sore throat, malaise and mild body ache for one day. After 1 week, her condition worsened with severe headache, nausea and vomiting. On consultation, she was examined by a physician and RT-PCR for COVID was advised. No neurological deficit was found on examination. She was given injection Emset IV stat and injection Diclofenac IM stat. Tab Doxycycline 100 mg BD for 5 days, Tab Pantoprazole 40 mg BD, Tab Zincovit OD, Tab Vitamin C 500mg BD and saline gargling was advised. She was found to be COVID positive.

On 8<sup>th</sup> day, she started feeling heaviness in lower eyelid of right eye and a feeling as if there is mild obstruction in lower visual field of right eye. Eye examination was done by herself under torch-light and mirror examination. She had developed erythema and edema of lower eyelid and mild congestion in lower bulbar conjunctiva in right eye. There was no ocular discharge. Edema and erythema of lid disappeared in 24 hours' time without any topical medication. She had history of severe allergic reactions, along with puffiness of eyes bilaterally to some unknown allergens in past.

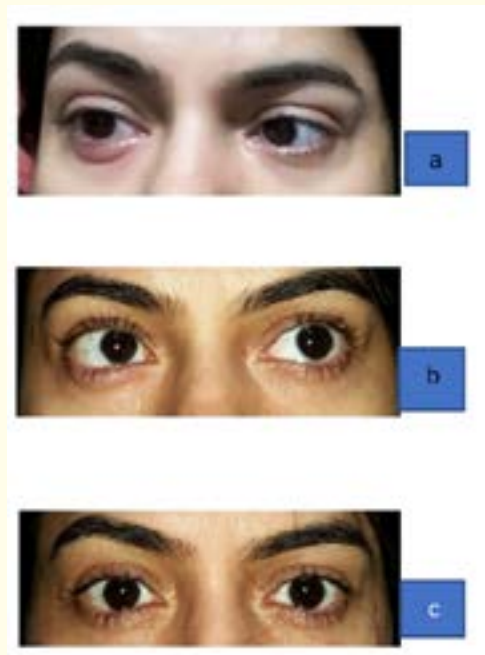
On 11<sup>th</sup> day, her general condition improved but she developed recurrent bouts of cough.

Her laboratory investigations were as follows: TLC: 4050/mm<sup>3</sup> (neutrophil 75%, lymphocyte 19%, platelet count 1,40,000/mcL), CRP (13 mg/L), D-dimer (850 ng/mL), Serum Ferritin (400 mcgm/L).

During course of treatment her vitals were regularly monitored 4hrly. Her baseline HR before illness was below 60. Average HR during illness remained above 90. O<sub>2</sub> saturation remained above 96%. Maximum temperature was 102 degrees accompanied with shivering, which responded to oral tab paracetamol. She was under homecare setting throughout her illness.

On a later date, her eyes were examined under slit-lamp in hospital setting. It appeared normal. Her vision was 6/6 in both eyes with corrective glasses. She had a history of regular contact lenses usage for extended-wear time.

It was concluded that she had developed transient lower eyelid edema, erythema and congestion of lower bulbar conjunctiva of right eye following COVID-19 infection with suspected 'Omicron variant', as community transmission of Omicron variant was dominant at that time.



**Figure 1:** Eye lid edema and erythema of right lower eyelid; selfie with front camera of smartphone; 0-hour(a) Minimal edema of right lower lid, no erythema; selfie with back-camera; 12 hours (b) No edema or erythema of right lower eyelid; selfie with back-camera; 24 hours (c).

### Discussion

Daruich, *et al.* reported a case of a young man with unilateral eyelid edema and moderate conjunctival hyperemia who developed severe respiratory distress hours after developing ocular symptoms [7].

Guan, *et al.* reported 'conjunctival congestion' in 9 (0.8%) of 1099 laboratory confirmed COVID-19 cases. This was associated with more severe COVID-19 patients [8].

A meta-analysis review performed by Agarwal, *et al.* with 16 studies, of 2347 confirmed cases, showed ocular symptoms in 6.9% of the patients with severe pneumonia. Only 4.13% of mild to moderate cases of COVID-19 were associated with ocular symptoms [9].

Akçay, *et al.* divided 1083 patients with SARS-Co V-2 into inpatients and outpatients' groups. They reported higher incidence of ocular irritation and conjunctivitis symptoms in the hospitalized group [10].

Our case, a case of COVID-19 with suspected 'Omicron' variant, highlights changing paradigm of ocular manifestations of mutated corona virus variants. Unilateral eyelid edema, erythema and conjunctival congestion with systemic symptoms were managed in homecare setting.

### Conclusion

To conclude, as COVID-19 pandemic continues, mutations of COVID-19 variants are taking place in each wave of pandemic at a rapid pace. Systemic manifestations are also changing patterns in each wave. Association of certain ocular symptoms with subsequent severe systemic symptoms can help in predicting and managing cases. Although further studies are required to validate our finding.

### Declaration of Patient Consent

The author certifies that proper consent has been taken from patient regarding use of image and other informations to be published in journal.

### Financial Support and Sponsorship

None.

### Conflicts of Interest

None.

### Bibliography

1. Guan WJ, *et al.* "Clinical characteristics of coronavirus disease 2019 in China". *The New England Journal of Medicine* (2020).
2. Gu J, *et al.* "COVID-19: gastrointestinal manifestations and potential fecal-oral transmission". *Gastroenterology* 19 (2020): 0016-5085.
3. Hoffmann M, *et al.* "SARS-CoV-2 cell entry depends on ACE2 and TMPRSS2 and is blocked by a clinically-proven protease inhibitor". *Cell* (2020).
4. Hamming I, *et al.* "Tissue distribution of ACE2 protein, the functional receptor for SARS coronavirus. A first step in understanding SARS pathogenesis". *The Journal of Pathology* 203.2 (2004): 631-637.
5. Xu H, *et al.* "High expression of ACE2 receptor of 2019-nCoV on the epithelial cells of oral mucosa". *International Journal of Oral Science* 12.1 (2020): 8.

6. Holappa M., *et al.* "Many faces of renin-angiotensin system-focus on eye". *The Open Ophthalmology Journal* 11 (2020): 122.
7. A Daruich and Martin D Bremond-Gignac. "Ocular manifestation as first sign of Coronavirus Disease 2019 (COVID-19): Interest of telemedicine during the pandemic context". *Journal Français D'ophtalmologie* 43 (2020): 389-391.
8. Guan WJ., *et al.* "Clinical characteristics of coronavirus disease 2019 in China". *The New England Journal of Medicine* (2020).
9. Aggarwal K., *et al.* "Ocular surface manifestations of coronavirus disease 2019 (COVID-19): A systematic review and meta-analysis". *PLoS One* 15 (2020): e0241661.
10. Sezgin Akçay Bİ., *et al.* "Evaluation of ocular symptoms in COVID-19 subjects in inpatient and outpatient settings". *International Ophthalmology* 41 (2021): 1541-1548.

**Volume 13 Issue 12 December 2022**

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