

Letter to the Editor

Episcleritis as an ocular manifestation in a patient with COVID-19

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doi: 10.1111/aos.14484

Editor,

The aim of this report is to present the first case of episcleritis in a COVID-19 positive patient.

In December 2019, an outbreak of a coronavirus disease (COVID-19) emerged in Wuhan, China, and it has spread quickly over the world. This disease is caused by the new severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2).

Coronavirus disease (COVID-19) is a highly contagious disease, its progression can lead to acute respiratory distress syndrome and even death. The majority of cases are mild with most common symptoms being fever, cough, fatigue and dyspnoea. Severe infections can rapidly affect the pulmonary system, are more prone to heart injury and secondary infection. There is some evidence of neurological manifestations, arrhythmia and impaired renal function (Wu & McGoogan 2020). Other reported symptoms are ageusia and anosmia, research is being done to encompass the broad clinical spectrum of the virus (Russell et al. 2020).

The coronavirus family has previously been associated with conjunctivitis in humans just as the recent novel coronavirus, but not with episcleritis. However, ocular manifestations of SARS-CoV-2 have not been widely reported (Zhang et al. 2020). We present a case of episcleritis in a young woman diagnosed with COVID-19.

A 31-year-old woman, a human resources worker from a healthcare



Fig. 1. Sectoral conjunctival hyperaemic inflammation on the inferonasal conjunctiva in the patient left eye.

centre, presented cough and myalgia without fever. On the next day, symptoms disappeared but were followed by anosmia and ageusia. At this moment, nasopharyngeal PCR Abbott® (Abbott Laboratories, Abbott Park, IL, USA) test is carried out with a positive result for COVID-19 infection. There was no relevant previous pathological history of ocular complications.

Seven days after onset, ageusia and anosmia resolved, no other general signs or symptoms appeared except the ocular symptoms referred below. The patient consulted our Centre (Centro de Oftalmología Barraquer, Barcelona, Spain) referring red eye, foreign-body sensation, epiphora and photophobia without impaired visual acuity. Patient presented a slightly elevated epibulbar area with hyperaemia at the inferotemporal sector without fluorescein defect (Fig. 1). The patient was diagnosed with nodular episcleritis. Treated with artificial tears on demand and fluorometholone five times a day for 3 days, tapered during the following weeks, signs and symptoms resolved on the sixth day after the episcleritis onset. Eighteen days after the onset of myalgia and cough (3 days after the resolution of ocular episcleritis), a second nasopharyngeal PCR Abbot® test was carried out with a negative result for COVID-19 infection.

We recorded the ocular complications of a patient with confirmed COVID-19 infection. The clinical presentation of the case met the criteria for acute nodular episcleritis, and it is possible that fluorometholone helped treat the symptoms and resolve signs.

Other viruses pertaining to different viral groups like Herpes zoster, Ebola

and Chikungunya have shown to develop episcleritis though to a lesser degree than other ocular symptoms, additionally, studies on hepatitis C virus showed episcleral inflammation could possibly be explained by the induction of secondary vasculitis causing cryoglobulinaemia and/or circulating immune complexes containing antibodies of the virus (Gill et al. 2016).

This case illustrates episcleritis as a possible ocular complication of COVID-19. To our knowledge, this is the first report to determine episcleritis in a patient with COVID-19. Given the relationship between immune disorders that induce vascular inflammation in episcleritis and the high-rate incidence of thrombotic complications (31%) reported in intensive care unit patients with COVID-19, one pathophysiological theory that could explain the relationship between COVID-19 and episcleritis may include immuno-vascular factors and/or coagulation disorders (Klok et al. 2020).

Further studies on COVID-19 are needed, specifically in relationship with ocular tissues to facilitate a better understanding of its pathogenicity in the eyes.

References

- Gill GH, Manch R & Gish R (2016): Hepatitis C virus as a systemic disease: reaching beyond the liver. *Hepatol Int* **10**: 415–423.
- Klok FA, Kruip MJHA, van der Meer NJM et al. (2020): Incidence of thrombotic complications in critically ill ICU patients with COVID-19. *Thromb Res* <https://doi.org/10.1016/j.thromres.2020.04.013>
- Russell B, Moss C, Rigg A, Hopkins C, Papa S & Van Hemelrijck M (2020): Anosmia and

ageusia are emerging as symptoms in patients with COVID-19: what does the current evidence say? *Ecancermedicalscience* <https://doi.org/10.3332/ecancer.2020.ed98>

Wu Z & McGoogan JM (2020): Characteristics of and important lessons from the coronavirus disease 2019 (COVID-19) outbreak in China. *JAMA* **323**: 1239.

Zhang X, Chen X, Chen L et al. (2020): The evidence of SARS-CoV-2 infection on ocular surface. *Ocul Surf* **18**: 360–362.

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