

(Sarenac Vulovic et al. 2016; Borrás 2018).

Keep in mind the side effects of anticancer drugs on the eyes, and if we have an eye disorder, we need to take early treatment in cooperation with other departments.


## References

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

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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 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

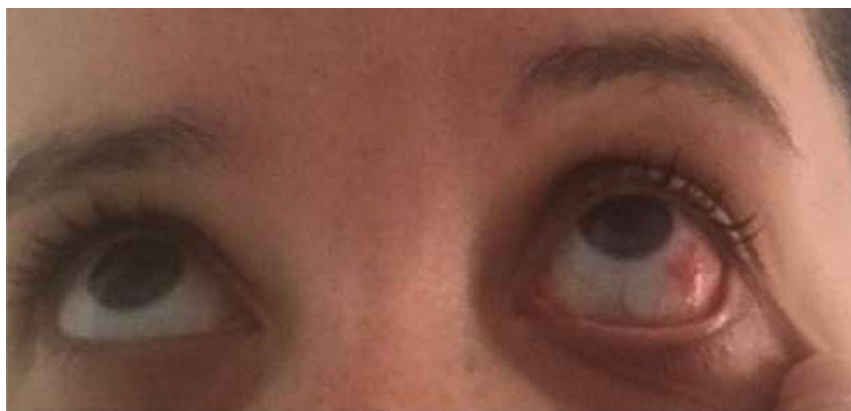


Fig. 1. Sectoral conjunctival hyperaemic inflammation on the inferonasal conjunctiva in the patient left eye.

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.



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## Managing ophthalmic practices in a referral emergency COVID-19 hospital in north-east Italy

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Editor,

The novel coronavirus disease (COVID-19) is highly contagious in humans. It is mainly transmitted through direct or indirect contact with respiratory droplets produced by infected people, also with evidence of the virus in tears and ocular secretions (Lai et al. 2020). Different levels of COVID-19 activity were found in different countries, depending on the features of the virus and the public health response. The Italian COVID-19 spreading is one of the largest worldwide with related public severe health emergency (Armocida et al. 2020). To diminish the risk of contamination, some healthcare facilities, included our hospital, were assigned as referral regional care centre for COVID-19 patients.

Due to the effect of COVID-19 last weeks, we adopted a complete reorganization of our department to ensure continuous ophthalmic medical care. According to our recent experience, we share a series of measures to prevent the nosocomial transmission of the disease and to reduce the risk of contamination for patients, caregivers and administrative staff.

The accesses to the healthcare facility are reduced only to essential gateways with a separate checkpoint for the patients and the personnel. The admission of carers should be avoided, if possible. In waiting areas, a social distancing is guaranteed with at least 1.5 m apart from one another, properly wearing a surgical mask. The triaging system screens patients through temperature measurements, and a questionnaire about upper respiratory symptoms, fever, myalgia and anosmia, domicile or travelling in hot areas, and contact history with confirmed or suspected COVID-19 patients within the past 14 days. Patients who meet one of these criteria are addressed to a separate controlled circuit to test for COVID-19 positivity. If a patient under investigation needs a non-deferred ophthalmology examination, the visit is conducted in a dedicated room and, until further notice, the patient treated as a positive patient.

For outpatient care, a risk stratification process with a review of the patient's medical record is used to identify in which patient the visit cannot be delayed. All patients receive a screening by telephone with the same

questionnaire performed upon the arrival in the hospital. Patients with any positive findings are postponed. In this setting, patient education is crucial. In waiting areas, videos about personal hand hygiene, proper surgical mask-wearing and practising social distancing should be considered useful approaches. The visits were rearranged, tending to no waiting policy, and the seats were spaced at least 2 m. Adequate environmental ventilation and sanitation should not be overlooked. Washing or alcohol-rubbing the hands is an essential procedure also required after taking off gloves. Ophthalmologists are a high-risk category, and appropriate personal protective equipment is required (Romano et al. 2020). Protective shields were installed on the slit lamps to prevent droplets transmission. The micro-aerosol formation procedures should be avoided, including 'air-puff' tonometry (Wan et al. 2020). The intraocular pressure is measured using a disposable tonometer tip. Direct ophthalmoscope examination is avoided and replaced with fundus photography or slit light examination. Laser treatment is reserved for retinal tears, high-risk developing neovascular glaucoma or proliferative diabetic retinopathy. To avoid the threat of irreversible vision loss, intravitreal injections should be continued for scheduled patients.

As regards ophthalmic surgery, all elective procedures were deferred. In our practice, patients with an urgent surgical condition (such as retinal detachment, endophthalmitis, open globe trauma and sight-threatening uncontrolled ocular pressure) are first screened for COVID-19. For positive patients, a dedicated operating theatre with negative pressure laminar flow is provided.

In conclusion, the COVID-19 puts under severe stress the healthcare system in different countries. To limit the outbreak of the disease and to ensure the safety of the caregivers, appropriate countermeasures are mandatory. Specific specialty protocols might help to look after our patients more efficiently in the future.

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