



## Covid and Practice Patterns in Ophthalmology

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The novel pandemic coronavirus disease 2019 (COVID-19), caused by the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), has challenged the medical community to its pinnacle. While diagnostic and therapeutic efforts have been focused on respiratory complications of the disease, several ocular implications have also been noted in literature.

### Eye Complications during the Course of COVID-19 include

- **Conjunctivitis:** It is due to an autoimmune mechanism caused by macrophage activation and presents mostly with bilateral conjunctival hyperemia, chemosis, follicular reaction of the tarsal conjunctiva, epiphora, watery discharge, mild eyelid edema, and enlarged preauricular and submaxillary lymph node with an incidence of 0.8% and 31.6%.
- **Kawasaki Disease:** The ocular manifestations are iridocyclitis, punctate keratitis, vitreous opacities, papilledema, subconjunctival hemorrhage,
- **Worsening of Diabetic Retinopathy:** Physical inactivity and sedentary behavior with inability to reach ophthalmic clinics due to the imposed lockdown policies may be deleterious for patients and may result in disease worsening.
- **Retinal Findings:** As described in literature shows hyperreflective lesions at the level of the ganglion cell and inner plexiform layers on OCT which are more prominent at the papillomacular bundle.
- **Neuro-Ophthalmological Complications:** Include, optic neuritis polyneuritis, Guillain-Barré syndrome (GBS), meningitis, encephalomyelitis, and encephalopathy and Oculomotor nerve palsy have been reported in literature.

### Steps for stratification of ophthalmic patients for clinic visits

In the presence of life-threatening infections such as this, ophthalmologists have to achieve a balance between providing ophthalmic care and minimizing infection control.

- All routine ophthalmic patients should be delayed until the severity of disease spread reduces as determined by the WHO and the local Chief Medical Officer.
- New patient referrals are reviewed by the consultant surgeon to determine the urgency. If necessary, telephonic interviews should be preferred in areas with higher COVID cases.
- All patients considered for a clinic visit are reviewed for three things: presence of a fever, cough or shortness of breath, any foreign travel or travel to an area with a high infection rate within the prior 14 days, any contact with patients who have been diagnosed as having COVID-19.
- If a patient with COVID-19 or one with a fever, cough, or shortness of breath needs to be examined, the patient is seen in a separate isolation room. Ideally, only one person (physician, technician, etc.) should be present in the room (as ophthalmic rooms tend to be small) and should wear the full personal protective equipment (PPE): gown, N95 mask, face shield, and gloves. Hands should be washed before and after examination for a minimum of 20 seconds with soap and water.

### Protection of medical workers

As health care workers make up 9% of Italy's COVID-19 cases, it is therefore vital that front-line medical workers wear proper

protection. Secondly, it is important to monitor these health care workers for disease and implement appropriate containment measures in hospitals.

#### **Sterilization of equipment**

- The slit-lamp shields, B-scan probes, and any other tools are disinfected with 70% ethyl alcohol after each patient as it has been shown to reduce coronavirus infectivity.
- Goldman tonometers are sterilized with a 10% diluted sodium hypochlorite solution, which inactivates coronaviruses.

#### **The role and interpretation of testing of patients prior to surgical procedures**

No clinical suspicion for COVID-19, no known exposure, no characteristic symptom - A role for preoperative testing of every patient remains controversial, and individual hospitals and surgery centers will typically have their own rules. The testing availability, practicality (will the test come back in time?), and accuracy all factors need to be individualized before planning surgery.

#### **SARS-CoV-2 RT-PCR positive**

As COVID-19 can have lasting effects on respiratory function, if the surgery is elective, it is better to have it delayed for 6 weeks from the onset of symptoms. When surgery on an RT-PCR positive patient is necessary in view of permanent loss of vision the choice of anesthesia may be impacted by the patient's overall medical condition. The surgeon and OR staff should wear N95 masks and eye protection or face shield.

#### **SARS-CoV-2 RT PCR negative**

If the test was done as part of a routine preoperative screening, in the absence of clinical suspicion of COVID-19, then surgery can proceed with PPE as below.

#### **Post-vaccination**

Patients who have been vaccinated with the available Covid vaccines in INDIA and abroad are significantly less likely to become clinically ill from infection with SARS-CoV-2, but can still develop a mild or asymptomatic infection. Until there is data to the contrary, patients with a positive RT-PCR test for SARS-CoV-2 should still be considered potentially infectious for others.

In the end it is crucial for the ophthalmologists to understand the ocular manifestations, as ophthalmology is a specialty where

there is close contact with the patients. Understanding the ocular manifestation would not only aid in identifying early cases but also help in protecting oneself. However, until the exact mechanism is clearly understood, ophthalmologists and other healthcare workers should be more conscious to prevent transmission. It is essential to obtain each patient's travel history, any flu-like symptoms, as well as family history. Until further evidence is available, it would be prudent to regularly wash hands with soap and water and avoid touching eyes, nose, and mouth especially at-risk locations.