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Short Communication

Adopting COVID-19 times in ophthalmological examination

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As the second wave of SARS-COV-2 hit India very hard, as an Ophthalmologist, our responsibilities have increased more than ever to develop such measures so that viral transmission to eyecare workers, and supporting staff could be decreased to the minimum. As they say, Innovation is the only way to win, we took it as a challenge, to derive measures to prevent viral transmission that will help us combat the grave situation by preventing further transmission. Other than routine eye patients for recategorization, emergencies, etc., we had a clientele of service candidates as well as civil aircrew, who reported regularly for medical examination. We would like to share our experience and the innovation in the eye department, made during the COVID-19 pandemic.

Despite taking all precautionary measures, asymptomatic carriers (especially children and young adults) can transmit the virus. The use of masks, hand hygiene, and social distancing has been emphasized globally. However, social distancing is usually not possible in the case of an ophthalmic workup. It is well documented that with the use of ophthalmological instruments, and close contact with patients, ophthalmologist carry higher risks of contracting a SARS-CoV-2 infection.[1] We largely followed AIOS operational guidelines for the COVID-19 outbreak as well as SOPs issued by the establishment.[2] At our center, thermal screening, document check and allotment of the serial number were done for the candidates before entering the hospital (at the hospital gate by dedicated staff). All were provided with N95 masks at the gate itself. In the case of children, surgical masks were provided. Only one attendant was allowed with children at a time. In the ophthalmology department, apart from social distancing guidelines, we had two distinct zones for ocular examination, Zone A for candidates reporting for medical examination, and Zone B for patients reporting for ophthalmic disorders. To prevent the mixing of the two, we assigned separate ophthalmologists, staff and equipment for the two different zones. We kept separate entry and exit points for the two zones and ensured one-way flow of the candidates and patients. Gates of the rooms were open with only a fan. Use of an Air conditioner was strictly prohibited. Staff members were equipped with PPE kits. All candidates were briefed well in advance regarding the ophthalmological pattern of examination before entering the consultant chambers. The room door remained open with one candidate waiting outside the door area so that he could also see what he was

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Fig. 2: Slit lamp with double breath shield (lower one made by face shield

supposed to do after entering the chamber. The hand rest was moved down to minimize contact with the refraction chair (Figure 1). The candidates assessed their own distant visual acuity. Two trial frames and two refraction sets were laid out in the examination area. Two kidney trays were put in, one with 1% sodium hypochlorite solution and the other with normal saline. After each refraction, the trial frame and trial lenses were soaked in the sodium hypochlorite solution followed by normal saline wash and other trial frames and a refraction set was used for the next candidate (Figure 1). Dilating drops were instilled self by the candidates. In a slit lamp examination it was very difficult to follow social distancing norms, hence we gave two barriers in slit lamp, one at the viewing arm and one at the patient examination arm instead of one. The lower half of breath shield was made by a face shield clipped on either side of the slit lamp. (Figure 2)

Fig. 1: Hand rest down, self-examination, two trial frames and sterilization process

A recent study has suggested that a shield that is placed towards the working parts of the slit lamp provides a better barrier against contamination from the patient's breath as compared to conventional slit lamp breath shields.[3] During Indirect Ophthalmoscopy, double mask was worn by candidates as well as the examiner. Intra ocular pressure (IOP) recordings were done only in suspected cases of glaucoma or other diseases. We preferred a non-contact tonometer with a safe distance as a primary instrument in a well-ventilated room with sufficient air exchange.[4]

Our center also catered to a largely dependent population across the NCR. During the lockdown period, our center was designated to provide emergency services with routine OPD on a designated day. On the OPD day, all patients were asked about their history via telecom by optometrist and tokens were given. Patients were called into the OPD one by one. As the red eye could be one of the initial symptoms of Covid,[5,6] all red eye patients had a separate designated area for waiting. A separate slit lamp was installed in a separate room to see these patients. We had started a video consultation for our clientele. A designated WhatsApp number was displayed on the prominent areas. We had taken around 3 to 4 video consultations daily in peak of the second COVID wave. Awareness about black fungus had led to the anxiety among COVID recovered patients. We also encountered many patients with post-COVID eye fatigue and strain. Routine fundoscopy was done with a fundus camera. Only one dummy patient is registered in fundus camera and pictures were taken serially of all patients undergoing fundus examination. The fundus examination investigation form is marked serially with a serial number of photos.

Lastly, waste disposal at this time cannot be undermined. The department had given lectures to aware health care workers and optometrists regarding proper waste disposal.

However, with these innovations, we also faced some difficulties. Goldman Applanation tonometer measurement was impossible with a mask on and a double breath shield on a slit lamp. Movement of Joystick of slit lamp was difficult if breath shield was too large. Fogging of lenses and spectacles was very common and led to the inaccurate visual acuity recordings. We had come across a few patients who are allergic to N95 masks. Frequent washing of lenses led to corrosion and a loss of clarity of lenses.

SARS-CoV-2 infection has developed as a worldwide health emergency, and on the other hand, work cannot be stopped. No one had predicted when life would return to normal. Most of these changes are still working as we have adopted new things in life. "The Show Must Go On," as the saying goes.

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