Contact Lens Practice During the COVID-19 Pandemic

Betul Seher UYSAL[1]

ABSTRACT

A novel strain of the coronavirus, named as Severe Acute Respiratory Syndrome Coronavirus-2 (SARS-CoV-2), caused severe acute respiratory syndrome, referred to as coronavirus disease 2019 (COVID-19). The disease has spread rapidly around the world and authorities have immediately taken restrictive measures to control the spread of infection and to prevent overcrowding in the healthcare system.

The precautions to be taken in ophthalmology clinics have critical importance because eye examination requires a near contact between the physician and the patient. Based on the suggestions from various ophthalmology and contact lens associations, and also the Centers for Disease Control and Prevention (CDC), contact lens practitioners should take some precautions, including using personal protective equipment and hand sanitizer, disinfection of instruments and contact lens trial set, and revisiting patients' knowledge about safe lens usage, in their practice to minimize the transmission of COVID-19.

Although there is no evidence-based study indicating that asymptomatic individuals should stop wearing contact lenses during COVID-19 pandemic, ceasing contact lens wear is recommended during the pandemic. Nevertheless, necessary precautions should be reminded to patients who continue to wear contact lenses to prevent virus transmission.

Key words: COVID-19, Contact lens.

A novel strain of the coronavirus, named as Severe Acute Respiratory Syndrome Coronavirus-2 (SARS-CoV-2), first detected in Wuhan (Hubei, China), caused severe acute respiratory syndrome, referred to as coronavirus disease 2019 (COVID-19).[1] The disease has spread rapidly around the world and announced as a pandemic by the World Health Organisation (WHO).[2] The first COVID-19 case was reported on 11 March 2020 in Turkey and authorities have immediately taken serious restrictive measures in social and business life to control the spread of infection and to prevent overcrowding in the healthcare system.

Additionally, every clinical department has taken several precautions to prevent or minimize the nosocomial transmission of SARS-CoV-2 to patients and healthcare professionals.[3-5] The precautions to be taken in ophthalmology clinics have critical importance because slit-lamp examination requires a very close distance, approximately 50 cm, between the physician and the patient.[5]

The virus spreads from person to person mainly through respiratory droplets which make contact with the mouth, nose, or eyes of another person via 3 routes: (1) an airborne transmission (within 1.5 m); (2) a direct contact transmission; and (3) an indirect contact transmission (touching a surface before contaminated by infected person).[6] Moreover, it should be stated that SARS-CoV-2 is isolated from the conjunctival secretion and tear fluid in COVID-19 patients.[7] Tears or conjunctival secretions would be a source of infection in addition to the respiratory droplet which indicates that we should avoid contact with patients' eye secretion during eye examination.

Unfortunately, contact lens practitioners may face all of these possible transmission routes. Practitioners have to be close to the patients during the slit lamp evaluation of contact lens fitting, and also need to touch the patients' eyelids directly to insert or remove the contact lens or to perform a push-up test. In addition, face-to-face communication is an important step of contact lens practice, especially when instructing the patients about

1- Assistant Prof. MD., Gazi University Medical School, Ophthalmology Department, Ankara, Turkey

Received: 29.05.2020
Accepted: 01.06.2020
Glo-Kat 2020; 15: 71-74
DOİ: 10.37844/glauc.cat.2020.15.14

Correspondence Adress:
Betul Seher UYSAL
Gazi University Medical School, Ophthalmology Department, Ankara, Turkey

Phone: +90 533 798 2420
E-mail: sehersertbas@gmail.com

lens handling and care. Finally, although soft contact lens trials are disposable, specially designed lenses, including corneal rigid gas permeable, hybrid, and scleral contact lenses, are reusable. These reusable contact lens trials could be a source of contamination of COVID-19.

Based on the suggestions from various ophthalmology and contact lens associations such as American Academy of Ophthalmology (AAO) and American Academy of Optometry, and also the Centers for Disease Control and Prevention (CDC), contact lens practitioners should make some modifications in their practice to minimize the transmission of COVID-19.

First of all, the patient attendance should be limited as far as possible except for emergent situations.[5] The first examination of patients who have never used contact lenses before should be postponed. Follow-up patients should be contacted by phone or e-mail and their routine examinations should be rescheduled unless there is an emergent situation. If a patient needs to be examined, all risk factors and symptoms indicating the possibility of COVID-19 should be questioned; such as the presence of symptoms like fever, conjunctivitis, and cough; a history of travel to outbreak areas; and a history of contact with any COVID-19 patient.[5,6] If the patient carries any of these high-risk factors, the contact lens examination should be postponed for at least 14 days, which corresponds to the incubation period of COVID-19.[6] SARS-CoV-2 may also cause other ocular disorders such as anterior uveitis, optic neuritis, and retinitis besides conjunctivitis.[8] Therefore, the possibility of COVID-19 should be considered in patients with these diseases during the pandemic and necessary measures should be taken.

It is recommended to install a protective shield between the slit-lamp and ocular of the biomicroscope.[5,9] If it is not readily available, it is possible and conceivable to make it easily from an acetate paper. Personal protective equipments, including protective suit, goggles, gloves, N95 mask, face shield, and medical cap, should be used to reduce the risk of viral transmission during the slit-lamp examination and contact lens insertion or removal.[10,11] Patients should also be asked to wear their masks while examination as well.

Hand disinfection is of great importance to reduce the risk of viral transmission considering the frequency of touching face during a day (mostly mucosal areas such as the mouth, nose, and eyes).[12] Hands should be washed with soap and water before and after contact with each patient, even if gloves are worn while examination.[5,13] Hands may also disinfected with hand disinfectants containing at least 60% alcohol.[5,13] It is also crucial for practitioners to avoid touching their face, mouth, nose, and eyes during examination of the patients.[11]

All instruments used for examination such as the trial frame, ophthalmic lenses, chinrest, and headrest of slit-lamp or auto-refractor keratometer should be cleaned effectively with water and detergent after each patient.[10,14] If specially designed reusable contact lenses are used, it should be ensured that the contact lenses are well disinfected after each patient according to the infection control guidelines for contact lenses.[11] Examination rooms and patients' waiting areas should always be properly disinfected and, ventilated if possible.[10] Finally, a safe social distance should be maintained between patients in waiting area.

It may be thought that contact lens wearers are theoretically at high risk for viral exposure and infection because of the frequent contact with their eyes while wearing and removing contact lenses. However, there is no evidence indicating an increased risk of COVID-19 in contact lens users. However, AAO suggested that the use of contact lenses should be suspended as a precaution during the pandemic.[15] A secondary benefit of suspending the use of contact lenses is to reduce the number of patients applying to the clinic for contact lens-related complications. However, this recommendation may not be applicable to some contact lens users such as keratoconus patients who need to wear contact lenses.

There are some rules to be followed by patients who continue to wear contact lenses during the pandemic. Revisiting patients' knowledge about safe lens usage is critically important to minimize lens-related complications and virus transmission.

- Hand washing with soap and water for at least 20 seconds and then drying before touching the eye and contact lenses: Soap is a kind of surfactant material that emulsifies the lipid envelope of the virus and kills them.[16]
- Cleaning contact lenses properly: Contact lenses are generally recommended to be cleaned with carefully rubbing them in the palm of the hand using modern lens care solutions, which generally contain surfactant.[17] Avoidance of contact of the lenses with water should also be reminded.
- Using disposable contact lenses: Disposable lenses may be preferred to reduce contact lens-related complications such as microbial keratitis.[18]
- Discontinuation of the lens is recommended if there are any signs of COVID-19.

In fact, these are the rules that a contact lens user should always pay attention to regardless of the COVID-19 pandemic.

It is speculated that the spectacles should be preferred to the contact lenses and they may even have a protective effect against SARS-CoV-2 transmission.[19,20] However, there is not any scientific data indicating a protective effect of spectacles against COVID-19 and the CDC reported that glasses do not reduce viral transmission, just like goggles or face shields.[21] SARS-CoV-2 may remain stable on hard plastic surfaces for days, which can also be found in spectacles.[22] Therefore, extra attention should also be paid to the regular cleaning of the spectacles with soap and water.

In conclusion, to our knowledge, there is no evidence-based study indicating that asymptomatic individuals should stop wearing contact lenses during COVID-19 pandemic. However, as contact lens usage may pose a risk of contamination, AAO recommended ceasing contact lens wear during the pandemic. Turkish Ophthalmological Association also takes into account AAO's recommendations. In light of this suggestion, we have suspended the contact lens practice in our clinic during the pandemic. Nevertheless, precautions should be reminded to patients who continue to wear contact lenses to prevent virus transmission.

REFERENCES

1- Lu H, Stratton CW, Tang YW. Outbreak of pneumonia of unknown etiology In Wuhan, China: the mystery and the miracle. J Med Virol 2020;92:401-2.

2- World Health Organisation, WHO Director-General's opening remarks at the media briefing on COVID-19, March 11, 2020. (Available from: https://www.who.int/dg/speeches/detail/who-director-general-s-opening-remarks-at-the-media-briefing-on-covid-19-11-march-2020) (accessed May 25,2020).

3- Chua MSQ, Lee JCS, Sulaiman S, et al. From the frontlines of COVID-19-how prepared are we as obstetricians: a commentary. BJOG 2020;127:786-8.

4- Peng X, Xu X, Li Y, et al. Transmission routes of 2019-nCoV and controls in dental practice. Int J Oral Sci 2020;12:9.

5- Lai THT, Tang EWH, Chau SKY, et al. Stepping up infection control measures in ophthalmology during the novel coronavirus outbreak: an experience from Hong Kong. Graefes Arch Clin Exp Ophthalmol 2020;258:1049-55.

6- US Centre for Disease Control and Prevention. How COVID-19 Spreads, May 22, 2020. (Avaliable from: https://www.cdc.gov/coronavirus/2019-ncov/prevent-getting-sick/how-covid-spreads.html) (accessed May 25, 2020)

7- Xia J, Tong J, Liu M, et al. Evaluation of coronavirus in tears and conjunctival secretions of patients with SARS-CoV-2 infection. J Med Virol 2020.

8- Seah I, Su X, Lingam G. Revisiting the dangers of the coronavirus in the oph- thalmology practice. Eye (Lond) 2020.

9- EuroTimes, Coronavirus and ophthalmology: what can ophthalmologists do to protect themselves, staff and patients from COVID-19? (Priscilla Lynch), 11 March, 2020. (Avaliable from: https://www.eurotimes.org/coronavirus-and-ophthalmology) (accessed May 25, 2020).

10- The Department of Health and Social Care (DHSC) and Public Health England (PHE). COVID-19: infection prevention and control guidance. (Avaliable from: https://www.gov.uk/government/collections/coronavirus-covid-19-list-of-guidance) (accessed May 25,2020).

11- Lian KY, Napper G, Stapleton FJ, et al. Infection control guidelines for optometrists 2016. Clin Exp Optom 2017;100:341–56.

12- Kwok YL, Gralton J, McLaws ML. Face touching: a frequent habit that has implications for hand hygiene. Am J Infect Control 2015;43:112–4.

13- Fonn D, Jones L. Hand hygiene is linked to microbial keratitis and corneal inflammatory events. Contact Lens Anterior Eye 2019;42:132–5.

14- World Health Organization. Infection prevention and control during health care when novel coronavirus (nCoV) infection is suspected, March 19, 2020. (Avaliable from: https://www.who.int/publications-detail/infection-prevention-and-control-during-health-care-when-novel-coronavirus-(ncov)-infection-is-suspected-20200125) (accessed May 25, 2020).

15- American Academy of Ophthalmology, Eye care during the coronavirus pandemic, May 22, 2020. (avaliable from: https://www.aao.org/eye-health/tips-prevention/coronavirus-covid19-eye-infection-pinkeye) (accessed May 25, 2020)

16- World Health Organisation, Coronavirus disease (COVID-19) advice for the public, April 29, 2020. (avaliable from: https://www.who.int/emergencies/diseases/novel-coronavirus-2019/advice-for-public) (accessed May 25, 2020)

17- Kuc CJ, Lebow KA. Contact Lens Solutions and Contact Lens Discomfort: Examining the Correlations Between Solution Components, Keratitis, and Contact Lens Discomfort. Eye Contact Lens 2018;44:355–66.

18- Chalmers RL, Hickson-Curran SB, Keay L, et al. Rates of adverse events with hydrogel and silicone hydrogel daily disposable lenses in a large postmarket surveillance registry: the TEMPO Registry. Invest Ophthalmol Vis Sci 2015;56:654–63.

19- Weiss S. Does wearing glasses help protect you against coronavirus? March 10 ,2020. (avaliable from: https://nypost.com/2020/03/10/does-wearing-glasses-help-protect-you-against-coronavirus/) (accessed May 25, 2020)

20- LaMotte S. Switching to glasses from contact lenses may stop you from touching your face, April 29, 2020. (Avaliable from: https://edition.cnn.com/2020/03/27/health/contact-lens-glasses-coronavirus-wellness/index.html) (accessed May 25, 2020)

21- Centers for Disease Control and Prevention, Interim Infection Prevention and Control Recommendations for Patients with Suspected or Confirmed Coronavirus Disease 2019 (COVID-19) in Healthcare Settings, May 18, 2020. (avaliable from: https://www.cdc.gov/coronavirus/2019-ncov/hcp/infection-control-recommendations.html) (accessed May 25, 2020).

22- Ong SWX, Tan YK, Chia PY, et al. Surface Environmental, and Personal Protective Equipment Contamination by Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2) From a Symptomatic Patient. JAMA 2020;323:1610-1612.