CORRESPONDENCE

Coronavirus disease 2019 and ophthalmologists: introducing a simple protective shield for slitlamp biomicroscopic examination

Spreading of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), known as the COVID-19 virus, through respiratory droplets has been confirmed.¹ People who are in close contact with others are at risk of contamination with respiratory droplets. Airborne transmission possibly occurs in the setting of medical procedures with aerosol generation.^{2,3} COVID-19 might spread by touching a surface or object that has the virus on it, but this is not thought to be the main way the virus spreads.^{2,3} The World Health Organization recommends contact and droplet precautions, with eye or face protection to prevent the transmission of the disease.⁴ Regrettably, the Chinese whistleblower ophthalmologist has died because of coronavirus infection, after visiting infected patients.⁵ Ophthalmologists should be careful about personal protection during slitlamp examination because of close contact with patients' breath. As stated in the American Academy of Ophthalmology "Coronavirus Eye Safety" article, the virus can spread through the eyes and limiting eye exposure can help in prevention.⁶ Ophthalmologists should take care to protect themselves with goggles and a respiratory protective mask during the slitlamp examination of the patients with transmissible disorders; unfortunately, signs and symptoms of the COVID-19 infection are not evident in all infected patients. The built-in protective slitlamp breath shield could impede some airborne droplets, but the efficacy might be limited because of the small size of the shield. We prepared a wide-flexible breath shield as a simple device to enhance the personal protection of ophthalmologists during slitlamp biomicroscopy. The protective shield to interpose between the ophthalmologist and patient can be fashioned in the following steps:

Equipment: a nylon-based polyvinyl chloride (PVC) plastic sheet (we used A4, 210 × 297 mm, and 0.3 mm thick PVC film) (Figure 1, A), a pair of scissors, and a pen.

1. Use the original slitlamp breath shield as a guide to draw the cut line (Figure 1, B).
2. Cut the sheet to create a semicircular part to match with the slitlamp biomicroscope (Figure 1, C)
3. Pierce the sheet to create a hole for screw (Figure 1, D)
4. Mount the new wide breath shield for more protection (Figure 2)

We used this shield on a Topcon SL-3D Slit Lamp, and it should fit to the similar instruments. Otherwise, it is possible

Figure 1. A: Equipment to prepare the wide protective breath shield. B: Marking with a pen. The original breath shield is the guide. C: Cutting the sheet to create a semicircular part to match the slitlamp biomicroscope. D: Piercing the sheet to create a hole for screw.

to custom cut a compatible shield for any slitlamp using the built-in breath shield as a model. The wide PVC sheet breath shield could increase the protection level for both the examiner and the patient. According to a recent report, the

Figure 2. Mounting the new wide breath shield for more protection.

COVID-19 virus survives on the plastic surface up to about 72 hours; the virus might remain viable for a while on both built-in breath shield and wide protective shield discussed in this article.⁷ It is recommended to follow protocols for safe examination and not to touch the shield before spraying it with an effective disinfectant solution. We use 70% ethanol to clean the chin rest and forehead strap after each visit, and we spray ethanol on the shield and other parts of the slitlamp after visiting any high-risk patient; the safety instructions might vary according to the workplace policy and the severity of the epidemic. The sheet seems to limit the usage of the applanation tonometer, but its flexibility allows the tonometer to swivel over the shield. The maximum protection is the first step to prevent the current COVID-19 epidemic transmission to healthcare personnel. In this preliminary report, we describe the wide PVC sheet breath shield as a simple and an inexpensive tool to enhance protection during slitlamp examination.

Mohsen Pourazizi, MD
Alireza Peyman, MD

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First author:

Mohsen Pourazizi, MD

Department of Ophthalmology, Feiz Hospital, Modares St., Isfahan, Iran