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Dramatic Fall in Retinal Detachment Presentations During the COVID-19 Pandemic: Collateral Damage Due to COVID-19

To the Editor:

Retinal detachment is a sight-threatening emergency that requires surgical intervention. In many cases surgical intervention is required within 24 to 48 hours to minimize adverse consequences to vision.

The Royal Victorian Eye and Ear Hospital (RVEEH) is a tertiary referral center for eye conditions in Victoria, Australia, and manages the vast majority of public retinal detachment surgery in the state. Public retinal detachment surgery is captured in a comprehensive prospective database.

In late March 2020 in Australia, the National Cabinet introduced social distancing measures, including a ban on elective surgery, in an effort to reduce the spread of SARS-CoV-2 throughout the community. There was no restriction placed on emergency surgery and no overwhelming surge in cases preventing access. Indeed no known cases of SARS-CoV-2 infection were seen at all at our hospital.

Despite this, in April 2020 there was a dramatic fall in the number of retinal detachments operated on at RVEEH: 13 surgeries for primary retinal detachment, the lowest monthly total since 2011, which compared to a mean of 34.9 per month in the 36 months before (range 20–45). Fig. 1

These numbers likely understate the extent of the reduction in presentations state-wide, as private hospitals were shut from late March throughout April, and other public hospitals in the state reduced their ophthalmic surgery capacity significantly and directed cases to RVEEH.

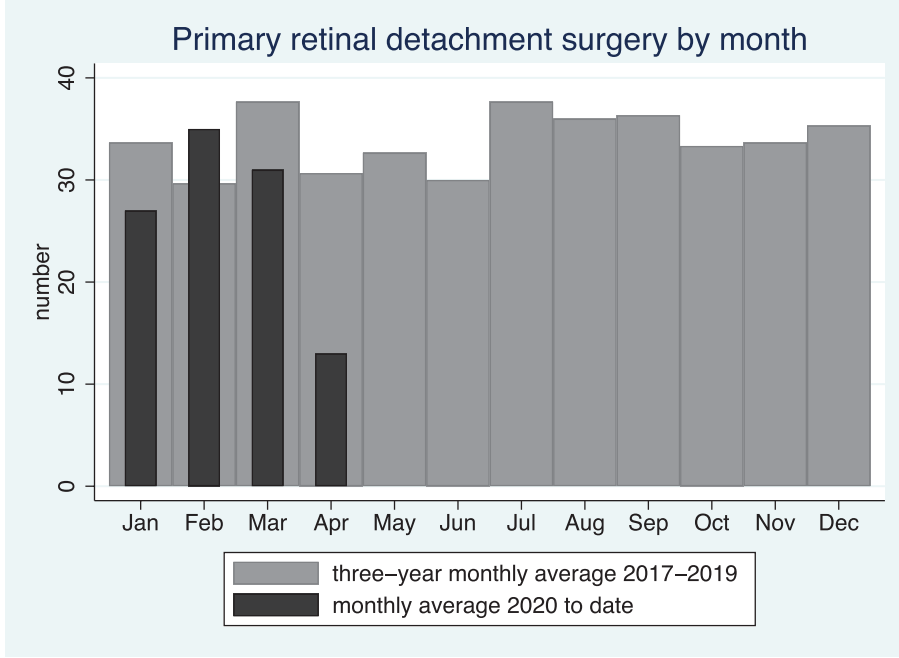

FIGURE 1. Primary retinal detachment surgery by month.

It is possible that by chance there were fewer retinal detachments, or by another mechanism the number of retinal detachments genuinely fell during this month. However, we believe that the most likely explanation is that retinal detachments continued to occur, but patients did not present for medical care due to perceived or real limitations to access due to COVID-19-related restrictions, or for fear of attending a hospital or primary care setting.

We intend to monitor this situation closely, and report further, looking specifically for a rebound in case numbers due to delayed presentation. However, for now we would stress that doctors who have patients with acute vision loss should continue to refer them for urgent ophthalmic care, and should emphasize the importance of prompt review and treatment. If social-distancing in required into the future, we would encourage authorities to be clear that medical care should not be foregone, as this is likely to leave a significant burden of medical morbidity: COVID-19 collateral damage.

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Patient Masking and Slit-Lamp Breath Shield for Prevention of Droplet Transmission During Slit-Lamp Examination

To the Editor:

Since the coronavirus disease 2019 (COVID-19) pandemic, the use of slit-lamp breath shields in prevention of

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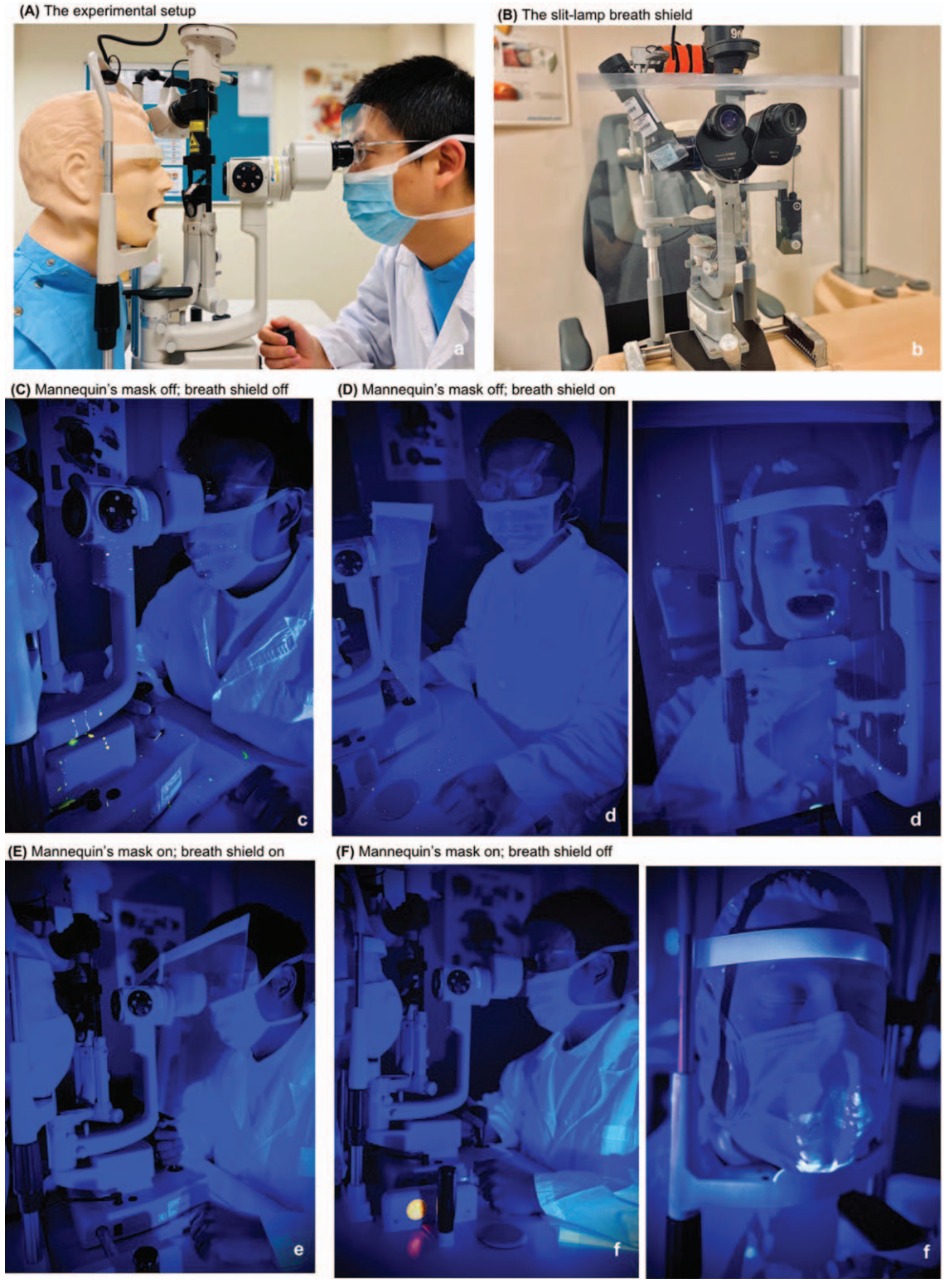

FIGURE 1. The experimental set up and dispersion of dye after stimulated cough in different scenarios. A) Face-to-face distance between the examiner and the mannequin was approximately 23 cm. B) The slit-lamp breath shield in our experiment was constructed with store-bought plastic folders. It measured 28 cm (H) × 40 cm (W) (11 in × 16 in). C) With both mannequin's mask and breath shield off, heavy dispersion of fluorescent droplets over the slit-lamp and examiner was detected. D) With mannequin's mask off and breath shield on, fluorescent droplets were mainly found on the side of the shield facing the mannequin, the slit-lamp, and the examiner's hand, sparing the eye shield and surgical mask of the examiner. E, F) With mannequin's mask on, with or without a breath shield, no macroscopic contamination was detected. Fluorescent dye was only seen on the inner surface of the mannequin's mask.

respiratory droplet transmissions has been discussed in different issues of the *Asia-Pacific Journal of Ophthalmology*.[1–3] An in-depth discussion regarding face masks was also reported.[1] In this letter, we sought to examine the effect of breath shield and patient masking on macroscopic contamination of the examiner and surroundings following a simulated patient cough experiment.

In our experiment, an examiner wearing a surgical mask and eye shield used the slit-lamp to examine the left eye of an intubation mannequin (Fig. 1A). A forceful cough was simulated by bursting a small latex balloon containing 10 mL of diluted fluorescent dye, prepared by mixing 10 mL of 10% fluorescein sodium in 400 mL of water, placed in the pharynx of the mannequin.[4] Ultraviolet light was shone on the examiner and the surrounding scene to visualize the dispersion of fluorescent droplets. The experiment was conducted with and without the use of a slit-lamp breath shield and repeated with the mannequin wearing a surgical mask. For each scenario, the experiment was conducted twice. We employed a simple breath shield, measuring 28cm (height) ×40 cm (width) that can be easily constructed and mounted onto a slit-lamp (Fig. 1B). This is particularly relevant to settings with limited access to commercially available breath shields.

Without the breath shield, fluorescent droplets were detected on the examiner's face, eye shield, surgical mask, white coat, and hands. The slit-lamp was heavily contaminated on the chin rest, light tower, knots, handles and tabletop (Fig. 1C). Droplets were also detected on the floor about half a meter away from the examiner. With the breath shield, fluorescent droplets were detected on the surface of the breath shield facing the mannequin, the slit-lamp, the tabletop, and the examiner's hands, but sparing the face (Fig. 1D). The experiment was repeated with a properly fitted surgical mask on the mannequin, and no macroscopic contamination was detected on the examiner or the surroundings, with (Fig. 1E) or without the use of a breath shield (Fig. 1F).

Although our experimental setup did not directly measure the distribution, size, or trajectory of cough-generated droplets, it simulates a clinical scenario when a patient coughs during slit-lamp examination. Our findings suggest that patient masking is more effective than breath shielding in minimizing droplet transmission during slit-lamp examination. The effect of surgical masks on reducing respiratory viral shedding has been demonstrated.[5] The breath shield may serve as an adjunct to surgical masks, particularly when there is a shortage of masks or when masks are not properly worn. However, the breath shield could impede procedures under slit-lamp and inadvertent contact of the breath shield may facilitate the spread of infection. In conclusion, mask wearing and proper disinfection of the slit-lamp, breath shield and surroundings, and hand hygiene of the examiner after patient encounters are critical to prevent nosocomial transmission of COVID-19 and other pathogens.

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COVID-19: Additional Precautions against Aerosols for the Slit Lamp User

To the Editor:

We read with great interest the article by Lam et al,[1] which describes the special precautions in ophthalmic practice required due to COVID-19. However, precautions related to aerosol transmission may need to be emphasized due to evolving understanding of transmission of the disease. Early in the COVID-19 pandemic, droplet and contact transmission were postulated to be the main modes of transmission. Droplets were defined as being "large" and measuring 20 to 100 μm. Upon expulsion, these droplets rapidly drop to land within 1 m of the infected individual. Transmission may also occur by direct contact with an infected individual or a surface that the person has touched.

Recently, the World Health Organization (WHO) has relooked into the modes of transmission for COVID-19.[2] Aerosols are generally defined as respiratory particles <10 μm. Generation of aerosols has been normally associated with coughing or sneezing but notably, may be produced even by normal breathing and speech. In fact, SARS-CoV-2 RNAs have been detected in air samples near infected patients despite them not coughing during sample taking.[3]

Pertinently, aerosols can remain suspended in the air and viral particles have been found in greater concentrations closer to the infected person.[4] These aerosols may be carried by air currents to distances above 10 m, which may greatly increase its transmissibility. Furthermore, aerosols are thought to be able to penetrate the lower

The authors report no conflicts of interest.
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