

## Ophthalmic Outcomes Negatively Influenced By the Covid-19 Pandemic in New York City

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This observational case series serves to highlight some of the challenges faced by our patients during the COVID surge in New York City at one county hospital. We are now seeing patients whose eventual ophthalmic outcomes were at least partially determined by the pandemic, although their ophthalmic issue was not COVID related. These patients fall into a number of categories. One deferred treatment because of fear of leaving her home, and/or coming to a hospital. Another had semi-emergent surgery postponed, as we had deferred all none emergent surgical cases per DOH recommendations. The third had a known ophthalmic disease, but resisted his usual follow-up schedule until he noted decreased vision for almost 2 weeks. Although not known, it can be surmised our patients may have had more favorable outcomes, had they immediately sought treatment.

### Case #1

A 67-year-old female, whom we had previously seen with a normal vision in both eyes and normal fundoscopic exam, noted a sudden decrease in her right eye vision. She described a black spot in her central vision, which progressively enlarged over 2 weeks. She was initially afraid to leave her house because of the pandemic, but after 2 weeks of no improvement in her vision came to the eye clinic for evaluation. Previously, her right eye vision had been 20/40 and is now 20/100. She was found to have a full thickness macular hole, which was scheduled for repair.

### Case #2

A 48-year-old male presented to the ED with eye pain OS, an intraocular pressure (IOP) of 43 mmHg, was treated with topical medications and sent to the eye clinic in the morning. He was found to have bilateral dislocated lenses (right lens superiorly and left lens inferiorly), IOP of 11 mmHg in the right eye and 6 mmHg in the left eye, and moderate anterior chamber depth. He exhibited Marfanoid habitus, and disclosed that he underwent an aortic aneurysm repair 2015. It was surmised that he had experienced anterior dislocation of the left lens with resultant pupillary block, which resolved as he lay supine. The eye was stabilized, and the patient scheduled for surgery for the following week. That week saw a surge of COVID-19 in Queens County, and all cases except emergencies were cancelled. His case was deemed non-emergent and postponed. He was given appropriate follow-up however, he returned in one month complaining of 11 days of left eye pain. Slit lamp examination revealed the left lens had entirely dislocated into the anterior chamber (Fig. 2). He stated he was concerned about returning to clinic for an exam during the pandemic and therefore postponed follow-up. Surgery was emergently performed.

### Case #3

We had been following and treating a 27-year-old male who presented to us with bilateral ocular toxoplasmosis and was subsequently diagnosed with HIV/AIDS. He was essentially monocular since his right eye vision was 20/40 and his left eye vision was count fingers at 3 feet. In the months leading up to the pandemic he complained of decreased vision in his right

eye. On exam, he was found to have a vision of 20/70 in the right eye. On fundoscopic exam his toxoplasmosis lesions appeared inactive, although he was found to have significant traction on the retina which we believed to be the cause of his decreased vision. The severity of his disease was explained to him and he was given appropriate follow up. However, in the weeks following, during the COVID-19 pandemic, he stated that due to his depressed immune system he was fearful of exposure to COVID-19 and opted to delay his follow-up. He presented 2 months later with a vision of 20/150 and a significant traction detachment.

In our clinic we have enacted social distancing by spacing chairs 6 feet apart, we provide masks to any patients who do not have them, and we routinely educate our patients on proper mask usage and hand hygiene. Examination chairs and equipment are cleaned in between patients. With this protocol in place, we aim to establish a safe environment for our patients to return for their scheduled exams.

These cases illustrate the varied issues that patients and providers face during the COVID pandemic. Patients are tremendously fearful of coming to a clinic or interacting with multiple people after being told continually to isolate themselves. Because of this, they may be willing to tolerate an unacceptable level of pain or vision loss for an extended time. In our experience, the pandemic, in addition to causing overwhelming loss of life, has also indirectly impacted the visual outcome of some of our patients. With the increasing concern of a second wave of COVID-19 cases in the upcoming months, we present these cases to highlight the importance of remaining vigilant for patients who are at the highest risk of morbidity from loss of follow-up and whose benefit from close follow-up may outweigh the risk of exposure.

A collateral casualty of the COVID-19 pandemic is medical training, especially in non-emergency branches, not directly involved in COVID-19 patient care. In the United States, the Association of American Medical Colleges in March 2020, released guidelines strongly suggesting that medical students should not be involved in direct patient contact activities. Given that the situation is largely fluid and with no effective therapeutic agent or vaccine available yet, it is unclear when the situation would normalize. Across specialties, sweeping changes have been made such as ramping down surgical volume and redeployment of skeleton in-house call schedules to reduce the chances of cross-infection among hospital staff. The Severe Acute Respiratory Syndrome (SARS) pandemic in 2003 had resulted in some similar changes in training programs in many countries. Following the SARS outbreak in Hong Kong, both medical schools in Hong Kong had to abruptly transition undergraduate medical education from classroom lectures to a recorded lecture format, and students were taken out of clinical rotations temporarily. Later on, as the disease spread to Canada, the University of Toronto followed suit and suspended student education in teaching hospitals. Given the global footprint of COVID-19, it is likely that this pandemic would have a far more significant and long-lasting effect on medical education.