

## Commentary: Improving the cataract surgery efficiency and clearing the cataract surgery backlog due to COVID-19 pandemic

India reported its first case of corona virus on January 30, 2020, and the number of positive cases kept on increasing over time which has led to the declaration of nationwide lockdown from March 24, 2020 affecting 1.3 billion population. The entire nation has shut all the elective medical care services with a lot of uncertainty. The entire health care fraternity and the government spent most of the time, energy, and the resources in overcoming the COVID-19 emergency situation. In India, eye camps are also disrupted during the COVID-19 pandemic. Several elderly population is afraid to go to hospital due to the fear of exposure to COVID-19 pandemic. In several instances, the long waiting time resulted in development of mature cataract (lockdown cataract).

Several published report shared the trend of decrease in cataract surgery volume during the COVID 19 time and shared the tips to deal with the situation.<sup>[1-6]</sup> In December 2021 issue of Indian Journal of Ophthalmology, Gupta *et al.*<sup>[6]</sup> analyzed the impact of the pandemic on trends in cataract surgical volume in 2020 in Advanced Eye Center, PGIMER, Chandigarh, a high-volume tertiary care academic center in North India. The monthly cataract surgical volume was obtained from January 2018 through December 2020. Based on historical trends, the authors used time-series forecasting, probability sensitivity analysis, and linear regression models to estimate what the expected monthly cataract volume should have been from March 2020 onward had the COVID-19 pandemic not occurred and the cataract backlog clearance time. Results of their study suggested that in 2020, the authors expected to perform 7500 cases (assuming historical trends) but performed only 2500 cases (33% of the expected volume). The remaining 5000 cases (67% cases) constituted the “fixed” backlog. Assuming the rampup in cataract surgical volume starts in January 2021, results of the Monte Carlo simulation revealed that for their system, it would take on average 5 months (May 2021) under the optimistic scenario and 10 months (October 2021) under the ambivalent scenario to reach prepandemic expected surgical volume. As per the study, there would be a collective backlog of 5500 cases under the optimistic scenario (8.8 months’ worth of cases) and a collective backlog of 6900 cases under the ambivalent scenario (11 months’ worth of cases). The authors concluded that an intuitive approach and out of the box solutions are required by the government and private institutes’ collaborative efforts to help mitigate the disruptions caused by the pandemic and lessen the backlog without causing provider burnout.

How to address the cataract backlog after COVID-19 pandemic? Addressing the cataract backlog would require eventually increasing production beyond the prepandemic levels. This necessitates efforts from ophthalmologists working in Govt. or private institutions but also proactive planning, training the team, and thinking out of the box solutions. Greater efficiency is required in preoperative examination as well as investigation components such as: calculation for IOLs power (biometry), presurgical imaging such as ultrasound B

Scan (for mature cataract), optical coherence tomography (if required), systemic investigations, such as blood sugar, ECG, blood pressure, and medical clearance for cataract surgery. Financial clearance can be obtained for surgery being done using third party administrator.

Establishing collaborative and cohesive relationships with our nonoperating eye surgeons as well as optometry colleagues will be critical to expand access to care and triage. Increasing available operative time and space per cataract surgeon might help increase throughput. When appropriate, using topical anesthesia for cataract surgery might aid in the efficiency. Surgeon should use the technique that is safe for the patient and minimize the complication and so the need for follow-up. Small incision cataract surgery can be used for removing the cataract in selective cases of ultradense/black cataract to minimize complications such as corneal decompensation, posterior capsule rent and nucleus drop, etc. In India, femtosecond laser cataract surgery is in infancy stage; nevertheless, strategies to improve workflow and reduce time such as moving the laser to the operating room or alternatives to femto laser-assisted capsulotomy such as zepto nano pulse capsulotomy and miLoop for dense lenses might be of consideration.

Immediate sequential bilateral cataract surgery (ISBCS) has been shown to be as safe and effective to conventional delayed sequential bilateral cataract surgery. Its advantages include decreased wait time for surgery, reduced clinical visits, convenience for patients, and overall saving for healthcare systems. Currently, ISBCS in India is uncommon and offered to limited patients who require general anesthesia for special cases such as pediatric cataract and Down's syndrome. Post-COVID-19, the real benefit of bilateral surgery should be applied to carefully selected, counseled, and consented patients. It is time for All India Ophthalmological Society to bring guidelines for ISBCS and promote the ISBCS (with separate set of instruments and all surgical precautions) to minimize the backlog of cataract surgery. Use of intracameral antibiotics (intracameral moxifloxacin or cefuroxime) may be helpful to minimize the postoperative endophthalmitis.

All cataract-IOL surgery must be done by the experienced surgeon. Efforts must be taken to minimize the intraoperative complication. Follow-up visit should be kept minimal. It might be possible to covert some postoperative visits to telemedicine or to defer them altogether without compromising patient safety. There are insufficient real-world data to assess how the aforementioned various strategies might increase throughput and potentially help diminish the cataract backlog. Production would have to increase beyond previous throughput levels to catch up on the cataract backlog. This might be a potential direction for future health services research in ophthalmology. Proper preoperative planning is very important. It is important to maintain the inventory of IOLs, viscoelastic substance, dyes, capsule tension rings, pupil expansion devices, etc. The complicated cases or cases requiring complex surgery (such as cataract surgery with corneal graft or cataract surgery with vitreoretinal surgery, etc.) must be done only when the equipment and expertise are available. Otherwise these cases can be referred to tertiary care eye hospital. This would minimize the complication rate and would minimize the follow-up visit to the hospital during the uncertain time of COVID-19 pandemic.

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