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Letter to the Editor

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Delmicron and Flurona: Bracing for Surgical Impact

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The COVID-19 pandemic has impacted the provision of surgical care by drastically reducing (up to 80%) surgical volumes and prolonged waiting times for evaluation. On the other hand, surgery and follow-up have increased adverse outcomes and spread uncertainty among patients. Simultaneously, resident education has been disrupted due to the reduced case involvement and the attachment of trainees to COVID-19 wards.[1] The emergence of novel SARS-CoV-2 strains has repeatedly shattered the expectations of returning to the pre-pandemic status and momentum of surgical care and education.

Since December 2021, the rapid spread of the Omicron SARS-CoV-2 mutation hasbrought surgical departments to yet another stalemate. Estimations suggest that in December 2021, elective surgical operations were cancelled at the same level as the first months of the pandemic.[2] Although early evidence about the de-escalation of the Omicron SARS-CoV-2 surge in South Africa provided hope for resuming surgical services during the first months of 2022, the unpredictable biological behavior of the virus unfolded additional challenges.

Currently, reports about COVID-19 and influenza co-infection, or combined Delta and Omicron SARS-CoV-2 infection represent the greatest source of concern.[3,4] Previous studies suggest that COVID-19 and influenza co-infection "flurona" affect approximately 0.8% of patients with COVID-19, a number highly likely to increase hereafter given the substantial infectivity of mutant COVID-19 strains. Mortality among co-infected patients can be up to 6 times higher, and similar trends have been observed with regard to healthcare service utilization, need for ventilation, and morbidity.[5] The pre-pandemic potential of influenza to result in up to a 2-fold increase in acute respiratory syndrome (ARDS) incidence among surgical inpatients is quite alarming on these grounds.[6]

The same applies to novel combined Delta and Omicron SARS-CoV-2 strains, reported as "Delmicron" and potentially "Deltacron" in Israel, Cyprus, and other places. Knowledge about them is still scarce and limited to early announcements from local experts in the media.[7,8] Nonetheless, given the frequency of relevant reports and the practical inability to obtain credible data about infection severity within a short time, the continuity of surgical care remains in question. Therefore, it is important to assess the risk factors of COVID and/or influenza co-infections in surgical departments and put together sustainable response strategies.

The situation boils down to a 3-pronged challenge for surgical care. Besides the decrease in surgical procedures, surgical patients infected or co-infected with Omicron, Delta, and Influenza are at an increased risk of peri-operative morbidity and mortality,[9] and surgical departments can become short of staff due to COVID-19 surges among its personnel.[10] Infected healthcare workers and/or patients can transmit the infection to each other fueling a vicious cycle of postponing essential procedures such as oncological surgery, or performing emergency operations in an unsafe manner. To make things worse, a majority of patients offered surgery at these times belonged to high-risk demographics (oncology, polytrauma, etc.). In this context, maintaining safe and effective surgical care in 2022 calls for measures that offer protection against pathogens of high infectivity, and can be easily adapted to the development of the situation.

Measures should combine personal protective measures with COVID-19 and flu vaccination, testing, wider use of disinfection technologies, and behavioral changes. Regarding prevention, ensuring that patients admitted for scheduled surgeries are fully vaccinated for both COVID-19 and Influenza can decrease the chance of contracting the infection or experiencing severe disease. This recommendation aims to increase vaccination coverage among surgical inpatients and should by no means become an obstacle to non-vaccinated patients whose condition necessitate surgery. On the contrary, preoperative evaluation should be used as an opportunity to discuss the possibility of receiving a COVID-19 or Influenza vaccine, which appears to be safe up to 2 and 1 week before elective surgery, respectively.[11]

Integrating a thorough contact history into the preoperative evaluation before admission to the wards, as well as performing both COVID-19 and Influenza tests upon admission seem to be essential measures given the high rates of primary, breakthrough infections and re-infections

among the general population. Patients with a contact-history generating suspicion for the development of infection, and patients admitted on emergency basis can be placed in short-term quarantine chambers. This practice has already proved effective in nursing homes and long-term care facilities and can be adjusted to the capacity of the surgical ward and the urgency of the surgical operation.[12] Both testing and vaccination are equally important for the personnel and essential visitors, who can act as infectious reservoirs.

From an inpatient management point of view, testing needs to be continued on a regular basis or upon suspicion. A plan to allocate the available chambers to patients who have tested positive, patients who need to quarantine chambers, and non - infected patients, is necessary. However, given that timely tracing and isolation of patients infected from highly infectious SARS-CoV-2 strains has become more and more challenging, closely observing the appropriate use of personal protective equipment by both patients and personnel is of utmost importance. Apart from surgical operations, inpatient management procedures such as chest physiotherapy, high flow oxygenation, nebulized medication administration, and examination involving the upper airways have been classified as high or moderate aerosol generating procedures (AGPs) with a potential to propagate nosocomial COVID-19 and Influenza transmission. In this frame, installing high efficacy particulate air cleaning filters in all chambers or in chambers where patients undergo AGPs is recommended.

Portable filters can be used in lower-resource settings. Given that individual behaviors such as the use of electric toothbrushes or the willingness to compromise with open windows impact hygiene as well, it is important to educate and actively involve patients in this effort - a health promotion practice with demonstrated benefits during and after hospitalization.

Certainly, implementing such strategies requires institutional support in terms of minimizing the allocation of surgical healthcare workers to non-surgical wards and providing adequate resources and funding. The changing COVID-19 landscape calls for constant adaptation of international and national guidelines to the needs of each department and hospital. Although challenging, the effort to maintain surgical care amidst emerging SARS-CoV-2 and Influenza (co)infections can play a 2-fold life-saving role, by providing both essential surgical operations and experiential hygienic training to patients and their caregivers.

Conflicts of interest. None.

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