Key considerations for elective surgery in patients who previously had COVID-19

Lisa Croke, Managing Editor

The COVID-19 pandemic continues to affect many aspects of health care, including in the perioperative setting. Patients who have had COVID-19 can experience residual symptoms, including fatigue, dyspnea, and joint and chest pain, even more than two months after diagnosis, and can experience long-term cardiovascular consequences. Studies also indicate that COVID-19 is associated with high morbidity and mortality in surgical patients, regardless of age or comorbidities. Even without COVID-19, evidence indicates that an upper respiratory infection in the month before surgery is an independent risk factor for postoperative pulmonary complications, and that airway hyperreactivity resulting from an upper respiratory infection can persist up to six weeks and may contribute to surgical complications. Determining the optimal timing of surgery and level of preoperative evaluation is an important step when preparing patients who have had COVID-19 for nonurgent or elective surgery.

Timing
Typically, all elective procedures should be postponed until patients with COVID-19 are in the recovery phase and have met the criteria for discontinuing isolation and transmission-based precautions. The timing of surgery should be based on symptoms and disease severity. The American Society of Anesthesiologists and Anesthesia Patient Safety Foundation indicate that wait times from the date of COVID-19 diagnosis to surgery should be four weeks for patients without symptoms or patients who have recovered from only mild, nonrespiratory symptoms; six weeks for patients with symptoms who were not hospitalized; eight to 10 weeks for patients with symptoms who also have diabetes, are immunocompromised, or were hospitalized; and 12 weeks for patients who were admitted to an intensive care unit because of COVID-19.

According to Beverly K. Philip, MD, FACA, FASA, president, American Society of Anesthesiologists, Schaumburg, Illinois, it is important to wait an appropriate amount of time after a COVID-19 diagnosis before proceeding with surgery because these patients can experience unexpected surgical complications associated with the heart, lungs, and kidneys. “These serious complications are what we are trying to avoid,” she said. “We need to make sure all patients have had sufficient time to get back to their normal before surgery.”

Testing
Because of the increasing prevalence of SARS-CoV-2 virus variants and the occurrence of SARS-CoV-2 breakthrough infections in asymptomatic, fully vaccinated people, those planning to undergo surgery should have polymerase chain reaction (PCR) testing performed preoperatively. “Even if you have had COVID-19 in the past, you can get infected again and you will need preoperative PCR testing,” Philip emphasized. “Most patients need to be tested within three days of an anesthetic, procedure, or surgery with the potential to generate aerosols. Image courtesy of Getty Images via narvik.
three days of an anesthetic, procedure, or surgery with the potential to generate aerosols. This testing is independent of the patient’s vaccination status."

**Evaluation**

A comprehensive preoperative evaluation performed far in advance of surgery and that gives special attention to the cardiopulmonary system may be beneficial for patients who have had COVID-19, particularly those who are experiencing residual symptoms. This evaluation should be individualized and take surgical intensity, comorbidities, and the benefits and risks of further delaying surgery into consideration; the goal should be to optimize the patient’s medical conditions and physiologic status before surgery.\(^2\)

According to Philip, because COVID-19 can affect every organ system, there is a series of questions patients who have had COVID-19 who are planning to undergo surgery need to be asked. “We need to make sure the lungs, heart, and kidneys are all back to normal function before surgery,” she said. “To do this, we can ask patients if they are able to do their usual level of activity and if their exercise ability is the same as it was before COVID-19. Because problems with kidney function are not usually symptomatic, we can ask if they have seen their physician since they have had COVID-19 and what might have come from that.” She noted that “brain fog” is another adverse effect of COVID-19 that will need to be assessed. “Many patients are distressed by the fact that their mental function is not quite back to what it had been before COVID-19,” she said. “The health care team needs to be aware that this may affect perioperative teaching and the patient’s ability to retain information.”

**One team’s approach**

One team implemented a preoperative evaluation protocol for patients who have had COVID-19 and are planning to undergo surgery need to be asked. “We need to make sure the lungs, heart, and kidneys are all back to normal function before surgery,” she said. “To do this, we can ask patients if they are able to do their usual level of activity and if their exercise ability is the same as it was before COVID-19. Because problems with kidney function are not usually symptomatic, we can ask if they have seen their physician since they have had COVID-19 and what might have come from that.” She noted that “brain fog” is another adverse effect of COVID-19 that will need to be assessed. “Many patients are distressed by the fact that their mental function is not quite back to what it had been before COVID-19,” she said. “The health care team needs to be aware that this may affect perioperative teaching and the patient’s ability to retain information.”

Testing that is patient-specific and based on the severity of COVID-19 symptoms, surgical complexity, and the need for general anesthesia is performed to assess patients’ cardiopulmonary function, coagulation, inflammation, and nutrition. Testing may include chest radiography; electrocardiography; echocardiography; a complete metabolic panel; a complete blood count with differential; partial thromboplastin time; a D-dimer test; fibrinogen measurement; an N-terminal pro brain natriuretic peptide test; and lactate dehydrogenase, ferritin, and prealbumin measurements. The results are discussed by an interdisciplinary team, and surgical specialties are consulted as needed. Approximately 40 patients who had COVID-19 ranging from asymptomatic to severe were evaluated using this protocol over four months. No surgeries were postponed or canceled based on the outcomes of the evaluation; however, two surgeries were postponed so that patients could meet the minimum recovery time requirement.\(^1\)

**Conclusion**

Determining the timing of surgery and level of preoperative evaluation is an important step when preparing patients who have had COVID-19 for elective surgery. All patients should wait at least a minimum amount of time before surgery, depending on the severity of their illness, and undergo PCR testing no longer than three days before surgery. Preoperative evaluation should be focused on confirming that patients have returned to their baseline health level. “The nurses who comprise perioperative nursing are amazing team members and, together, we find ways to provide the best medical, nursing, and emotional care for these surgical patients,” Philip concluded.

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