

Original research article

Surgical emergencies in COVID - 19 in tertiary care hospitals

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Abstract:

Introduction: The coronavirus disease 2019 (covid-19) pandemic has had a substantial effect on surgeons and patients who require surgical care. providing care for patients with surgical disease requires a unique and intimate relationship between the patient and surgeon, and this interaction and contact cannot be replaced by telehealth. as such, the surgical workforce has faced distinct challenges compared with nonsurgical specialties during the covid-19 pandemic. specific issues include the best approach to protect health care personnel and the patient; the ability to efficiently regulate delivery of surgical care; the detrimental effects on patients with surgical disease; the financial implications of the pandemic on health care systems; the management of surgical workforce shortages; the implications for education, research, and career development; and the emotional toll to all involved.

Aim of study : to find out the incidence, complications, and outcome of patients presented with surgical emergencies with covid-19

Methodology: All the covid positive patients confirmed by RTPCR presented with acute surgical emergency including LSCS are taken for study the study period is between march 2019 to august 2021 in various medical college hospitals, are taken for study.

Results : Of the 25,609 patients admitted in the hospital with covid 19 required 338 lscs, 43, first trimester abortions, 31 required emergency laparotomy (acute intestinal obstruction 7, obstructed, strangulated inguinal hernia 9 acute appendicitis 15,) 143 diabetic foot disease.

Conclusion: The challenges are overcome by the dedicated surgical team, and many patients are saved in spite of their deadly covid 19 and its complications.

Introduction:

First and foremost, to deliver surgical care, a healthy and functional surgical workforce is needed. This requires providing adequate protection for all health care personnel. In the beginning of the pandemic, the shortage of appropriate personal protective equipment (PPE) provided challenges to many health care systems. As supply chains and the availability of PPE have improved, so has the ability to protect the workforce.1

maintaining physical distance when possible, wearing a well-fitted mask over the nose and mouth, frequent hand hygiene, wearing gloves for patient contact, regular surface disinfection, and use of eye protection for all patient encounters.^{1,2} These measures not only limit the spread of COVID-19 from those infected to others but also reduce the risk of acquiring COVID-19 from those who are infected.¹

. Although COVID-19 preoperative positive test result rates vary from region to region depending on the prevalence of COVID-19 in the community, it is imperative to identify asymptomatic patients with SARS-CoV-2 infection so their surgery can be safely postponed. This process protects the patient and the health care worker by avoiding unnecessary exposure to patients infected with SARS-CoV-2.

The COVID-19 pandemic has also created challenges in the education of the future surgical workforce. During the initial phases of the pandemic, when PPE shortages were common, most medical students were removed from clinical care rotations. With the shutdown of nonurgent, nonemergency surgery, residents were no longer gaining experience in the operating room and clinic.

Methodology:

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Results:

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Discussion:

The surgical disciplines face substantial challenges during the COVID-19 pandemic, and the effects on the surgical profession will be lasting. The long-term effects on patients with surgical disease have yet to be fully realized; however, it is clear that operating on patients with COVID-19 is associated with a significantly increased odds of morbidity and mortality. The surgical workforce will be strained by further shortages. Medical student education and surgical resident experience have changed. Health care systems are facing unprecedented financial challenges. Surgical private practices have closed, and some surgeons have retired early or left the profession. The effect on research and clinical trials may be significant. Although the future is uncertain, and it is not possible to predict how long this pandemic will last, hospitals and surgeons should not expect to return to the prepandemic approaches for the delivery of surgical care. Many of the changes that have been instituted during the COVID-19 pandemic are the new reality, and the surgical community must learn to evolve with and accept these changes. The future of the profession depends on it evaluated 30-day postoperative mortality and pulmonary complications in 1128 patients with COVID-19. This included 421 (37%) patients undergoing abdominal surgery. Pulmonary complications were reported in 577 (51.2%) of 1128 patients, with a high 30-day mortality rate of 23.8% (219 of 577). These outcomes might mainly relate to impaired cell-mediated immunity associated with the acute phase of COVID-19² and the absence of an effective drug therapy. Notably, high rates of complications (mostly respiratory) and high mortality (22.2%) were also reported after surgery in patients with AIDS during the pre-antiretroviral therapy era.

³ However, for abdominal surgery, the use of laparoscopy substantially reduced postoperative morbidity, mortality, and hospital stay in patients with AIDS.⁴ Currently, there is a debate on whether to use the laparoscopic approach in patients with COVID-19 because of the possible risk of aerosol transmission from surgical smoke. This risk remains hypothetical. Indeed, a laparoscopic appendectomy in a patient with COVID-19 showed that viral particles were not detectable in peritoneal fluid. ² Mortality and pulmonary complications in patients undergoing surgery with perioperative SARS-CoV-2 infection: an international cohort study.

The Indian Society of Anaesthesiologists (ISA) issues the following advisory and position statement pertaining to the perioperative management of post-severe acute respiratory syndrome coronavirus-2 (SARS-CoV-2) disease (COVID-19) in surgical patients.

With the second wave of COVID-19 receding, numerous patients who have recovered from the disease are reporting for elective/emergency surgery either for primary ailment or for a complication arising from COVID-19, such as mucormycosis. There is insufficient published literature, guidelines, or protocols regarding the perioperative management, morbidity and mortality of COVID-19-recovered patients. Many aspects of management are debatable and unclear. This position statement and advisory is aimed at guiding the anaesthesiologists in the safe perioperative management of the post-COVID-19 surgical patient population.

As the understanding of COVID-19 is improving, the guidelines and recommendations are also being updated regularly; nevertheless, this ISA advisory and position statement is also subject to change and updation in the coming days.

- SARS-CoV-2 infection primarily affects the pulmonary and cardiac systems but has the potential for involvement of multiple systems with both short-and long-term sequelae. Post-COVID syndrome can include symptoms related to residual inflammation, organ damage, impact on pre-existing health conditions, non-specific effects due to hospitalisation or prolonged ventilation (post-intensive care syndrome). The patients can be on polypharmacy, including steroids and anticoagulants. All these factors can have significant implications, which make the perioperative management of post-COVID-19 patients challenging.
- Physiological impairment and radiological features of pulmonary fibrosis and interstitial lung disease (ILD) with impaired diffusion and decreased functional capacity have been observed in cohorts of patients followed for 3–6 months after recovery from SARS-CoV-2 infection.
- Elevated serum cardiac troponin levels, asymptomatic cardiac arrhythmias, or abnormalities in cardiac imaging may be the only cardiovascular post-COVID-19 manifestations. These patients are at an increased risk of left ventricular diastolic/systolic dysfunction, pulmonary arterial hypertension, heart failure, fresh myocardial infarction and arrhythmias, including premature ventricular complexes, ventricular tachyarrhythmias and atrial fibrillation due to healing myocarditis and myocardial fibrosis. Inappropriate sinus tachycardia or bradycardia can also be seen as a component of the post-COVID-19 syndrome.
- COVID-19 results in a hypercoagulable state and thrombotic events can occur during the acute illness or convalescence. The most common haemostatic abnormalities in COVID-19 include mild

thrombocytopenia, increased D-dimer levels, prolongation of the prothrombin time (PT), international normalised ratio (INR), thrombin time (TT) and shortened activated partial thromboplastin time (aPTT).

- Moderate or severe SARS-CoV-2 infection is frequently associated with acute kidney injury (AKI). The duration of COVID-induced kidney injury is not clear, and renal consequences of COVID-19 may be found even six months after discharge.
- Hormonal and metabolic disturbances due to the involvement of the thyroid, pancreas and adrenal glands by the coronavirus have been reported. Direct viral damage to pancreatic islets due to coronavirus can lead to transient diabetes mellitus. Thyroid follicular damage, subacute thyroiditis leading to primary hypothyroidism, transient pituitary lesions and damage to hypothalamo-pituitary-adrenal axis leading to hypocortisolism and secondary hypothyroidism have been reported in patients recovering from SARS-CoV-2.
- The most frequently reported long-term neurological sequelae of COVID-19 infection are anosmia, ageusia and cerebrovascular accidents.
- Fatigue and muscle weakness are the most common post-COVID-19 symptoms. Significant physical deconditioning, critical illness myopathy, residual neuromuscular weakness and increased frailty may be seen in patients recovering from severe COVID-19 and must be considered while assessing the perioperative risk.
- Psychiatric symptoms, including post-traumatic stress disorder, worsening of depression and anxiety, have been observed in COVID-19-recovered patients.
- Gastrointestinal and liver dysfunction with symptoms such as loss of appetite, nausea, acid reflux, diarrhoea, abdominal distension, belching, abdominal pain and bloody stools can persist up to six months post-COVID-19. Abnormal aspartate aminotransferase and alanine aminotransferase levels, low albumin and elevated lactate dehydrogenase levels are often observed.
- Cutaneous manifestations in COVID-19 patients may vary from urticarial, vesicular or maculopapular rash to various immune mediated inflammatory reactions.
- The full scope of the long-term effects of COVID-19 and their clinical implications have not yet been fully understood. Similar to acute COVID-19, there is considerable variability in the presentation and severity of its sequelae. Knowledge of COVID-19-induced systemic effects is essential for an anaesthesiologist for better perioperative management of post-COVID-19 patients.

Perioperative management of post-COVID-19 patients scheduled for elective surgery

Timing of elective surgery

The optimal timing of elective surgery after recovery from COVID-19 must be decided after taking into account the magnitude and duration of COVID symptoms, the disease severity, the presence of post-COVID-19 multiorgan dysfunction and drugs used for COVID-19 management that can affect perioperative outcomes.

The American Society of Anesthesiologists (ASA) and the Anaesthesia Patient Safety Foundation (APSF) have advised that COVID-19 patients wait a few weeks after recovery for non-urgent or elective surgeries; four weeks for those who recovered from mild, non-respiratory symptoms; six weeks for symptomatic (including cough and

shortness of breath) patients who did not require hospitalisation; 8–10 weeks for symptomatic patients who are diabetic, immunocompromised or hospitalised with COVID-19; and a minimum 12 weeks for patients who were admitted in an intensive care unit (ICU) with COVID-19.

Reverse transcription-polymerase chain reaction (RT-PCR) tests can remain positive even after recovery. As per the Centres for Disease Control and Prevention (CDC), re-testing is not recommended within 90 days of onset of COVID symptoms. In case a patient presents for surgery after 90 days of onset of COVID symptoms, a nasopharyngeal RT-PCR test is recommended ≤ 3 days prior to the date of scheduled surgical procedure.

Pre-anaesthetic evaluation

In addition to the usual goals, pre-anaesthetic evaluation in a post-COVID-19 patient should primarily be aimed at assessment of the functional status of the patient, the assessment of sequelae of SARS-CoV-2 infection on various organ systems for optimisation and to find out if the patient is on any medications, which could influence peri-anaesthetic events.

Evaluation should include proper history and physical examination, including functional assessment and mandated investigations, along with meticulous documentation. Estimation of effort tolerance, breath-holding time, an ambulatory oxygen saturation measurement and a 6-min walk test (6MWT) should be performed in all patients before considering any further investigations. Objective tests that evaluate the cardio-pulmonary and nutritional status, renal and liver functions, coagulation system and inflammatory markers may be performed. The tests can be chosen based on the degree of index illness, ASA physical status of the patient and the nature of the planned surgical procedure .

Conclusion:

The challenges are overcome by the dedicated surgical team, and many patients are saved in spite of their deadly COVID-19 and its complications.

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