

Modifying Surgical Practice in the Times of Current COVID-19 Pandemic

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ABSTRACT

In the times of current coronavirus disease 2019 (COVID-19) pandemic, the surgical practice is suffering. The present report summarises the impact of this pandemic on our surgical services and the changes that have been promulgated for the resumption of services with the purpose of providing valuable information for our surgical colleagues worldwide. Almost six months have passed since this pandemic started, and the total number of confirmed cases has exceeded 7 million; and over 400 thousand lives have been claimed till now. We need to find ways to continue providing essential medical services to patients, while fighting with this pandemic since it might take longer than expected to end.

Key Words: COVID-19, Pandemic, Surgery, Personal protective equipment, N95 masks.

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The novel coronavirus disease 2019 (COVID-19), a pandemic that became a global crisis after it started in Wuhan, China in December 2019, continues to spread worldwide. It is an infectious disease caused by newly emerging severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2).¹ It was recognised as a pandemic by World Health Organization (WHO) on 11th March 2020.² It mainly involves the respiratory tract and has demonstrated a propensity to spread at an exceptional rate with a high person-to-person transmission rate. Its mortality rate is around 3.4% as estimated by WHO as of March 3rd, 2020; though, we do not yet know the true COVID-19 mortality rate. As of this writing, 213 countries and territories around the world including two international conveyances have been affected by COVID-19. The total number of confirmed cases have exceeded 7 million and over 400 thousand lives have been claimed. On 26th February, Pakistan confirmed its first two cases of COVID-19 and till now there have been more than 100 thousand confirmed cases and 2,255 patients have succumbed to this disease.

Since the beginning of this pandemic, hospitals have become a hot zone for transmission of COVID-19. Surgical services have been severely disrupted worldwide and will continue to be so for some time more.

Surgical service is a major part of the foundation of any health-care system and contributes significantly to the health of the population. Little is known about the management of surgical patients during this pandemic. The present report summarises the impact of this pandemic on our surgical services and the changes that have been promulgated for the resumption of services with the purpose of providing valuable information for our surgical colleagues worldwide.

Surgical staff is usually quite familiar with the use of personal protective equipment (PPE) and is able to deal with high risk infectious cases such as acquired immunodeficiency syndrome (AIDS) and hepatitis C. Despite this, operation theatres can be a major source of transmission for COVID-19 since its mode of transmission is through respiratory droplets and contact routes. Multiple staff members are involved in surgical process and there are high-risk transmission procedures such as airway management and spillage of body fluids. Hence, additional recommendations were incorporated based on best available evidence and expert opinion from global surgical community while the routine practices for infection control and prevention were continued.

Initially, all the surgical services were restricted to those patients whose needs were imminently life-threatening to plan for corona outbreak and minimise risk to both patients and healthcare team. A plan was chalked out to cater to those patients who were already planned for surgical services and whose surgeries could not be avoided, e.g., cancer patients specially the ones who were post-chemotherapy, having rapidly increasing tumor size which would become advanced stage if delayed or with active symptoms that require urgent

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care, patients with risk of potential bowel obstruction due to benign or malignant causes, trauma and life-threatening conditions.

International healthcare systems and well recognised societies like American College of Surgeons (ACS) and National Health Services (NHS) were then used for guidance to plan for reopening of services.^{3,4} Considering all patients as potentially positive, laboratory services were expanded to do urgent preoperative testing for surgical patients in semi-elective surgical settings to ascertain safest scenario.

PPE was arranged while following guidelines of The Centers for Disease Control and Prevention (CDC) and NHS.⁵ The major issue was the availability of N95 masks, which were available in a very limited quantity; hence, KN95 masks were used. In addition, proper rationing was done to limit usage of N95 masks as well as surgical masks. Provisions were made to sterilise soiled N95 masks. N95 masks assigned to people were asked to keep it using for 7 days while keeping it safe in a paper bag, for each person this was issued to. Moreover, duty rosters were made in a way that people were asked to cover the service for a week at least to prevent over usage of PPEs especially where these could be reused like N95. Limiting the surgeries to emergent cases only, also minimised utilisation of necessary resources including PPE's. Staff working in the operating room was trained for proper donning and doffing of PPE since it is critically important and carries high risk for self-contamination.

Since, intensive care units (ICU) and high dependency units (HDU) might be used for corona patients requiring ventilator support, plans were made while reserving some beds for surgery patients. At the same time, it was discussed that anesthesia machines could potentially be used as ventilators and; hence, provision was made to ensure this was taken on board in deciding the number of operating rooms that should be open and ensuring that adequate anesthesia machines and backups were available. Having anesthesia consultants covering ICU as intensivist and their availability for surgical services was also kept in mind. Only anesthesia consultants were asked to intubate patients as per relevant guidelines.^{6,7}

Surgical outdoor clinics were closed and our services were shifted to tele-medicine. Patients were called and remote consultations were being done by their personal physicians. Special arrangements were made for patients where it was absolutely necessary to see them in person.

Prioritisation protocols were made for patients who were called for surgery. There are different levels of urgency related to patient needs, and judgment is required to astute between them (Table 1).⁸ Comorbidities and associated cardiac and pulmonary diseases were considered while scheduling the patients so as to minimise cancellations and avoid calling such patients who were likely to fail the anesthesia clearance. Relevant investigations, pre-operative evaluations and examinations were planned in a way so that these were all done in a day. Day case procedures were planned

where possible so as to minimise patient stay in the hospital. Aerosol generating medical procedures, endoscopic and laparoscopic surgeries were avoided as much as possible.^{9,10} Delivery of safe high quality care was ensured in pre-operative, intra-operative, post-operative and post-discharge phases.

Table 1: Classification of patients requiring surgery in COVID-19 crisis.⁸

Priority level 1a (emergency)	Operation needed within 24 hours
Priority level 1b (urgent)	Operation needed within 72 hours
Priority level 2	Surgery can be deferred up to 4 weeks
Priority level 3	Surgery can be delayed up to 3 months
Priority level 4	Surgery can be delayed for more than 3 months

Stress and anxiety are normal responses to a crisis; it is cardinal to provide psychological support to those overburdened with providing care in this situation. The mental health of healthcare staff is of immense importance if they are to be able to continue to provide the highest quality care possible. Sessions were arranged for both patients and staff who needed psychological support.

The new twist in this pandemic is the recovered patients testing positive again - a development that suggests the disease may have a longer shelf-life than expected, which poses more challenges. Through this prism, the above changes were made to our surgical services with the aim to minimise the risk to both patients and healthcare team.

CONFLICT OF INTEREST:

The authors declared no conflict of interest.

AUTHORS' CONTRIBUTION:

RNK: Conception and writing of commentary.

AIK: Revision of commentary.

AL: Final approval.

MAP: Revision and additional changes.

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