



New surgical practice during COVID-19.

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ABSTRACT... A sequence of pneumonia-causing diseases from the Novel coronavirus (COVID-19) appeared in Wuhan, Hubei, China in December 2019. The outbreak of COVID-19 spread quite rapidly. Just as we write this report, almost two and a half million verified cases were reported globally, and almost 180,000 people died.¹ Experience from China reveals that COVID-19 outbreaks can be brought under control within 3 months, with highly efficient touch tracking and case isolation.² Healthcare staff are at the forefront of treatment for COVID-19 cases and have a very large chance of exposure to the infection.³ Cuts in disposable gear and COVID-19 awareness are triggering infections in healthcare workers.⁴ As of February 11, 2020, China has contaminated more than 1,700 health-care workers. In Italy, 2026 (9 percent) of the COVID-19 incidents happened in healthcare professionals (as of March 15).⁵ But, 31 medical teams containing more than 42,000 nurses and doctors sent by the Hubei from other provinces did not have a reported infection. It indicates that sufficient information about the transmission of disease and the use of protective equipment and procedures to manage infections is necessary to avoid the spread of infection among health care staff.

Key words: COVID-19, Elective Lists, Outbreak, Pandemic, Surgery.

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Whereas surgeons are at the forefront of health staff, many series of infections have appeared from China's operating theatres.⁵ This article aims to include suggestions to surgeons and other perioperative health professionals to enhance staffing and patient protection as well as the selection of patients to operate during this pandemic. Some of the main goals for countries in which the spread of the virus is a major concern at this point is to avoid the spread from patient to patient and healthcare staff.

Outdoor Services

As part of the COVID-19 control policy, surgical units must postpone or decrease non-urgent outpatient appointments. Urgent or immediate appointments and operations will be granted priority by the surgeons. Admissions will be rescheduled electively and non-urgently. Patients who risk life-threatening effects if care is postponed should be taken into consideration by a surgical team leader for hospital appointments,

phone calls, or remote consultation. From China's knowledge, it is best to set up a different triage area or fever unit to check every surgical patient for respiratory problems. Until they leave the house, patients with respiratory problems will phone, and workers will be trained to take care of them as they come. Any individual suffering from respiratory problems and flu-like problems can attend the fever clinic beforehand. Single rooms with locked doors should be allocated to patients with alleged or verified COVID-19 and surgical face masks or face masks without the exhaling slowly valve should be given. Social isolation between clinics and hospitals is important. Even during exams, doctors and patients will remain 6 ft apart; to reduce the possibility of infection, all but the most important elements of the physical test that need to be omitted.

In addition to gathering daily details relevant to illness, workers will have a thorough overview of the epidemiology. Related issues include the history

of travel (patient and family) and background of interaction with people from epidemic regions. Also, the workers with symptoms such as fatigue, dry cough, and shortness of breath will have test for COVID-19. Blood checks for COVID-19 and chest CT scans will be used as standard exams for patients seeking admission, according to the Chinese national guidelines. Also in many nations, COVID-19 checking for all patients hospitalized for the procedure is beneficial. Whether there is a background of unusual signs or exposure, the individual will be treated according to the specific standards of infection prevention in an approved COVID-19 facility. This is important to note that certain patients may be extremely contagious even though they have minimal to no symptoms. Once a strongly suspicious or suspected case has been detected, the patient will be isolated and promptly referred to the infection control department.

Levels of prevention in admitted patients

Surgical patients can be categorized into three COVID-19 risk types: verified and suspected patients, patients at higher risk, and patients at low risk. They are classified as follows:

Verified and suspected patients

COVID-19 is verified when the test results were positive in real-time reverse transcriptase (RT)-PCR diagnostic panels or serological (IgM and IgG). Defining unusual incidents falls into two groups. The first group would have a background of exposure and may follow all two of the clinical signs (fever and respiratory symptoms) of the standard COVID-19 results in a chest CT scan. During the preliminary stage of the illness, the overall percentage of white blood cells is regular or decreased, and lymphocyte production is increased. The second type has no specific epidemiological background yet displays three of the clinical signs (fever and/or respiratory problems, with normal results in chest CT. The blood count should be as mentioned above.⁶

High-risk cases

Cases who have traveled to high-risk regions or interacted patients with COVID-19 reported or suspected (who have experienced fever and/

or acute pulmonary disorder problems within 14 days.

Low-risk cases

Cases without a history of direct interaction with reported and suspected COVID-19 patients without fever or breathing signs and COVID-19 CT during 14 days.

Confirmed and confirmed cases are at elevated risk of catastrophic outcomes that could include admission to the ICU, respiratory assistance, and death.⁷ Elective procedures should be booked for such cases and should be checked regularly. Surgeons will understand both therapeutic and practical requirements for patients at high risk. Elective procedures will not be stopped for low-risk cases when there are insufficient health services. New management methods to postpone operation may be suggested for cancer patients who have to miss operation, such as neoadjuvant chemotherapy or supplementary chemotherapy.⁶

The hazard level in all inpatients will be measured before admissions to the hospital, or shortly after. The individual's risk level will be assessed regularly by the treatment staff. High-risk, confirmed, and suspicious patients must be contained in a single room, and all appropriate precautions for disinfection and isolation should be provided. Emergency isolation wards in all hospitals must be built to handle newly admitted high-risk, confirmed, and suspicious patients.

Personal protection by staff

Considering the small availability of personal protective equipment (PPE) in certain hospitals, the risk level of each individual will be calculated for their usage by healthcare staff. Healthcare staff must take proactive steps solely in keeping with the degree of disease evaluation. The surgeons are at high risk of contamination from the reports of certain hospitals in Wuhan.⁸

Solutions to the PPEs can need to be addressed in periods of serious shortages.

1: Primary safety (disposable surgical hat, surgical mask, work suit and disposable latex gloves, or/

and disposable insulation clothing if necessary) is needed while joining the ward of low-risk or high-risk patients for everyday tasks and rounds.

2: Secondary safety (available surgical cap, N95 mask, work suit, portable professional protective vest, portable latex gloves, and goggles) can be included while doing daily tasks and visits of verified and alleged patient wings.

3: Tertiary Safety:

In different surgical procedures such as the processing of airway samples, tracheal intubation, airway treatment and sputum suction, tertiary safety measures (available surgical cap, N95 cover, professional function, disposable medical protective equipment, disposable latex gloves, full-face respiratory protective equipment or electric air-purifying respirator) should be enforced as aerosol or spray necessary occur throughout the airborne.

Healthcare staff shall obey specifically the protocols for placing personal protective equipment on and off, and carrying PPEs are banned as you exit the polluted region. As per the localized zoning control framework and patient disease registration, hygiene and disinfection must be enforced, and separate PPE will be carried according to the place of operation.

Emergency surgery protocol

Surgeons, anesthesiologists, and nurses will be qualified to use PPE. Surgeons will plan the procedure depending on the extent of the danger to the life and safety of the individual. The requirement for exploratory surgical procedures during the outbreak will be treated as a necessity for entry.

Until treatment, all suspicious patients requiring immediate surgery must undergo COVID-19 blood checks and chest CT scans; examination of the pharyngeal swab should be performed until operation. Patients will be put in the field of change while awaiting the tests. All activities will be conducted quickly and efficiently. Specific guidelines should be implemented upon entry, dependent on patient danger level COVID-19.

- 1: In verified and suspected cases, surgeons will submit before the operation to the hospital's disease response department (if any), infection prevention department, and operating theatre, and then switch through a route to the negative pressure operating room. Anesthesia and surgical interventions need tertiary security interventions. Patients are then moved to the recovery region during the process.
- 2: Anesthesiologist, nurse, and physician will adopt tertiary safety protocols for anesthesia and surgical operations in high-risk patients until the preoperative planning has been done. During the treatment, the patients are transferred according to the initial transfer path to the initial isolation unit.

The general safety mechanisms are important for anesthesia and surgical operations for low-risk patients. Patients are moved to the main ward after the procedure according to the initial path of shift.

Elective Surgical Protocols

The triage procedures for cancer surgery are difficult. From the Society of Surgical Oncology's guidelines, assessments will be taken on a case-by-case basis, taking into consideration of cancer's pathology, potential care choices and waiting period for rescheduled operation. At the onset of the COVID-19 pandemic, the American College of Surgeons (ACS) urges to delay nonurgent operations.

They also divided surgery into various groups based on the severity of the procedure. They suggest postponement of operation after Tier 2b (most elective operations, such as hernia). For Tier 3a and 3b, in which most tumor operations tend to go, ACS currently does not suggest postponement even if it may change(9). Sensible follow-up advice should be provided to those performing elective surgery, so if COVID-19 is detected, the patient should be transferred to the high care hospital, so monitoring should be requested.

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those performing elective surgery, so if COVID-19 is detected, the patient should be transferred to the high care hospital, so monitoring should be requested. Both high-risk patients undertaking elective surgery (both symptomatic contacts of laboratory-verified cases and asymptomatic clear and high-risk contacts with a reported case should be screened once between day 5 and day 14 with their contact) will undergo COVID-19 PCR monitoring before treatment.

1: Where the RT PCR check of the patient is twice negative depending on the current disease level of the region, surgeons may continue with surgical procedures.

2: If the RT PCR check is positive for the patient, the patient will be moved to the isolation ward for completion of the preoperative planning. The elective operation has to be delayed until the patient heals. If we decide to operate on these patients on an emergency basis for some cause, all the safeguards listed earlier for COVID-19-positive cases as an emergency must be observed closely. Through anesthesia and operation, the tertiary safety steps must be taken. Patients are transferred to the isolation room until the procedure is done.

Management during surgery

Any materials that come into contact with victims including blood, secretions, and excreta may be deemed highly infected during surgery.¹⁰ In particular, medical staff can prevent access to the particulates produced when using electrosurgical devices in the operating theatre. There are several cases of viruses living in the surgical mist that electrosurgical devices produce. Although it is not known that coronavirus may be spread through surgical smoke, prevention could be worth taking before we have to prove that it does not. To need the risks, suction systems can eliminate surgical smoke and usage of electrosurgical devices at the minimum output. In suspicious situations, laparoscopy can be stopped because high-pressure pneumoperitoneum trocar breaches raise the possibility of an aerosol release to the operating theater personnel. Surgeons and nurses must prevent accidents such as knife

wounds and cuts by needle sticks. The PPE is required only within the isolated region, so entering the isolated area when carrying PPE is prohibited.¹¹

Any airborne spread occurred in Wuhan as the healthcare staff had little early awareness about the infection. Airborne transmitting stopped by utilizing the stringent security procedures for working theatre.

A chest CT scan and RT PCR check will be done for high-risk patients who experience fevered cough following surgery. Appropriate oxygen treatment and nebulization should be provided during operation for suspected or verified patients. Surgeons will pay heed to post-operative patients' medical care and organ welfare. There is indeed a greater chance of disorders, such as deep vein thrombosis (DVT) and secondary respiratory infections in patients with suspected or reported COVID-19.

For established COVID-19 cases, until the temperatures return to usual after more than 3 days, the pulmonary symptoms are greatly relaxed and the inflammation is completely reversed, the isolation can be triggered when the RT PCR and the antibody check is negative on two successive instances (sampling period 24 hours). Doctors will then pass these for care or release to the general hospital.

CONCLUSION






With the growing amount of cases of COVID-19 globally, there is a continued need for protection and management of infections. Such values are important in terms of both patient treatment and workforce health. In this report, we discuss a strategy in the sense of the COVID-19 pandemic for the treatment of surgical patients. Information is desperately required to better define risk factors for dissemination before, during, and after surgery and to evaluate the optimum timing of operation in these cases. Given the geographic background, accessible services, and the ongoing operation of COVID-19, the basic concepts described in this study would need to be addressed.

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3	Hamna Khan	Reference writing and final proof reading of article.	
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