Review Article:

Acute Care Surgery Preparedness for COVID-19 Pandemic: An Experience from Qatar

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Abstract:

Most cases of COVID-19 pandemic are now being reported outside Wuhan, China where the first case was detected. It is highly contagious and has engulfed the world in a short span of time. The burden on healthcare resources to care for the public has mounted multifold due to its fast transmission. Non-operative management of COVID-19 positive or the clinical suspicious cases is preferred. Personal protective equipment (PPE) should be utilized to protect the healthcare professionals' safety. The Ministry of Public Health, Qatar has launched a series of virtual health care facilities to manage patient appointments, medical consultation, sick leave and drug distribution to avoid hospitalization and to minimize the spread of COVID-19 infection to non-emergency patients by dialing hotline number to provide appropriate services. We would like to share and disseminate the experiences at the Acute Care Surgery (ACS) section, Hamad Medical Corporation (HMC). Ethical considerations, social distancing and optimum utilization of the available resources are essential to overcome the pandemic situation.

Keywords: COVID-19, emergency surgery, SARS-Cov-2.

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Introduction

On February 29, 2020, our country announced the recording of its first COVID-19 case[1], since then the number of confirmed cases has risen to 117,226 cases after running 594,215 tests, at the time of this written article. As part of the response to the pandemic, a protocol was devised by our team at Hamad Medical Corporation (HMC), Doha, Qatar.

The disease causes a respiratory illness with symptoms such as cough, fever, and difficulty in breathing. It spreads mainly through contact with the diseased person when he/she coughs or sneeze and can be prevented taking precautions like washing hands frequently, avoiding touching the face and avoiding close contact with people suffering from it[2]. The novel coronavirus (SARS-CoV-2) also shows evidence of causing gastrointestinal symptoms such as diarrhea, nausea, vomiting, and abdominal discomfort and has the potential to be transmitted by the fecal-oral route. The SARS coronavirus showed up in the stool specimens, after the patients have been discharged from the hospital[3].

We would like to share our experience in the Acute Care Surgery Section in dealing with the surgical services during COVID-19 as an example of a Middle-Eastern experience, in managing this pandemic. Our strategy is anticipatory and preemptive. In addition to the general strategies implemented during this pandemic crisis, we undertook additional strategies, with the aim of limiting cross contamination between COVID-19 positive and negative cases, utilizing a well-established protocol and pathway for managing surgical emergencies during this crisis.

The Acute Care Surgery division at Hamad Medical Corporation provides emergency tertiary general surgical services. To ensure the safety of the staff and to allow for continual care for patients we have reduced the number of staff to try and mitigate the risk of exposure. We have restructured the manpower and staggered the staff into four teams (On-call, Post-call, Pre-call and Standby

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teams). This reduces the number of staff who are present in the hospital simultaneously. Each team is composed of the attending consultants, fellows and residents carrying out the day to day patient care activities. This structure allows a backup coverage in case of illness or exposure to COVID-19 to the onboard team and restricts the non-essential personnel from the operating rooms and the emergency department. Furthermore, the minimum number of medical personnel are allowed at the bedside during the ward rounds and in the operating rooms.

We supported physical distancing practices by allowing physicians and team members with no direct contact with the patients to work from home, where they carried out administrative duties and virtual clinics. Regular staff meetings were all cancelled and were converted into virtual meetings. Morbidity, mortality and business meetings have been reduced to four attending physicians, to ensure patient safety and continuity of safe surgical practice of these vital meetings.

Vital to the success of these major changes were continued education of staff, patients, and visitors. These included education on physical distancing, self-isolation in case of mild symptoms, and protective measures ranging from hand washing to mask wearing. We have revised the recommendations of best practices during the pandemic issued by the major surgical societies, namely, the American College of Surgeons, SAGES, and the Intercollegiate Royal College of Surgeons[4-6]. Our consultants, fellows and residents discussed the emerging guidelines to make sure we continue to update our protocols and practices to conform with the global surgical community.

Four days a week, our patients are followed up in our tele-clinic. The patients are contacted by phone, all clinical issues are addressed over the phone wherever possible. The patient is only brought to the clinic if a physical examination is considered to be crucial. Refill medications are also ordered for the patient to be picked up from the nearest pharmacy.

COVID-19 positive patients who require admission for emergency surgical care are referred to the general hospital which has been designated as the COVID-19 positive base. Dedicated wards as well as operating theatres were established for these patients. This further decreases the probability of transmission to other emergency patients. Our full pathway and protocol are shown in Figure 1 and Figure 2.

The interventions undertaken by our section specifically and the hospital as a whole was carried out even before the outset of an outbreak. By limiting staff numbers to the bare minimum required, carrying out day-to-day patient care remotely where possible, isolating surgical COVID-19 positive patients to one specific site, and implementing a protocol based on the experiences of our Chinese colleagues, we have managed to limit and decelerate COVID-19's spread across our surgical floors and units. Therefore, we recommend our colleagues in an emergency surgical setting to modify their local guidelines early and put in place early protocol pathways to prevent further spread of COVID-19.

Conclusion

COVID-19 is a highly transmissible disease. Guidelines on the management of emergency surgical patients is the need of the hour. Each institution should put together their set of guidelines and institute changes that are in line with the international recommendations and local regulations.

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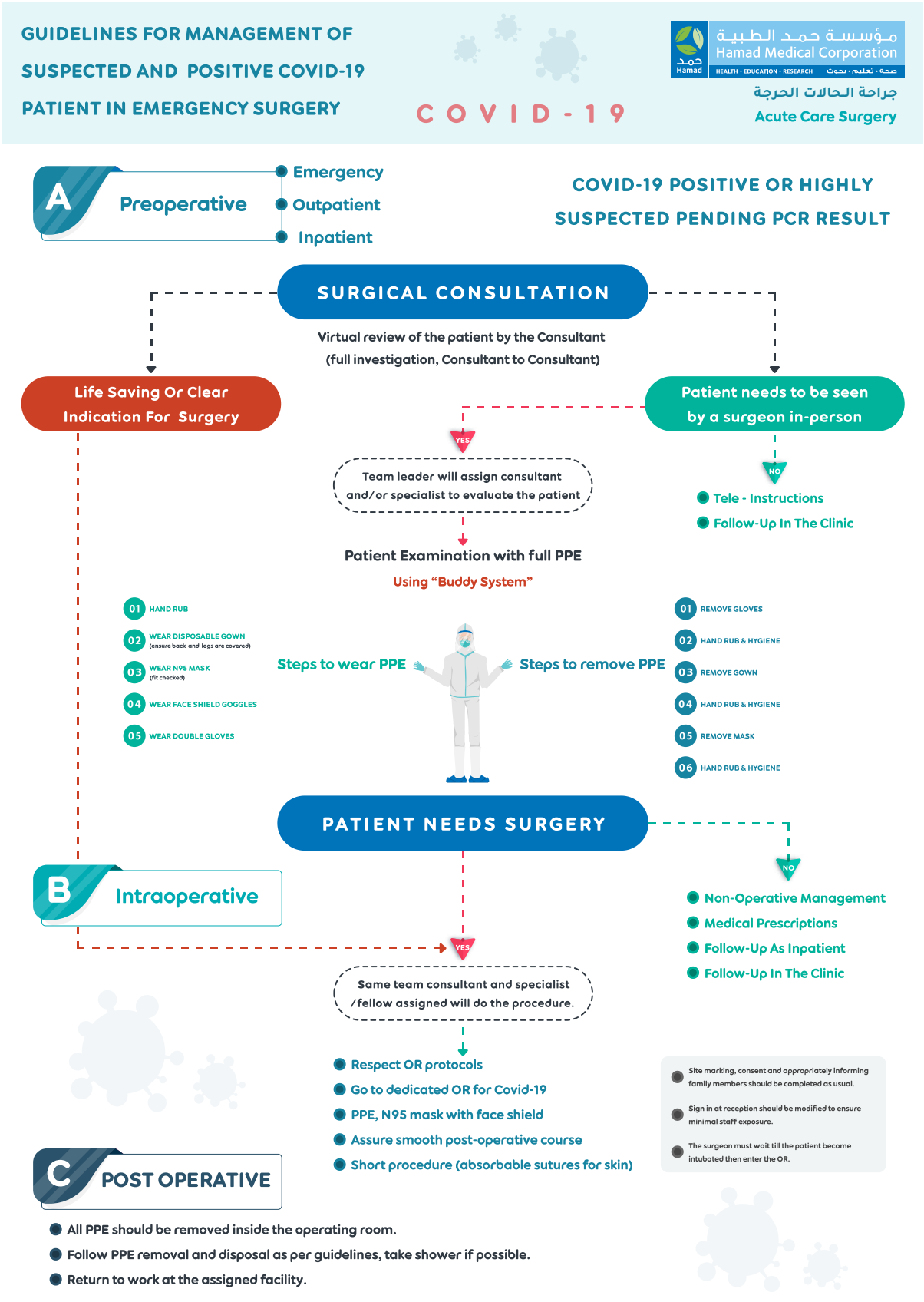

Figure 1: Algorithmic guideline for management of suspected and positive COVID-19 patients in emergency surgery.

Figure 2: Narrative details of the algorithmic guideline for management of suspected and positive COVID-19 patients in emergency surgery

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