

The Prevalence of Emergency Surgical Conditions among Covid-19 Patients in Kirkuk Province, Iraq

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ABSTRACT

Surgeries have suffered a worldwide threat due to the Coronavirus disease 2019 (COVID-19) pandemic. The same as the rest of the health care systems in the world. Especially in hospitals that have been designated for patients with this pandemic. The aim of the study is to evaluate patients who are undergoing emergency surgery in the hospital through the pandemic COVID-19. A cross-sectional study of emergency surgeries (retrospective) that was performed between June 1 and December 31, 2020, was conducted in the General Surgery Wards of Kirkuk General Hospital in the State of Iraq, which was designated for the admission of pandemic patients. 76 patients were listed as a total, 69 among them left the hospital without any event, while 7 of them died during the postoperative period. The patients discharged from the hospital did not have any positive for COVID-19 at follow-up. As for the general surgery cases, there were 36 cases, 29 of them males and 7 females. As well as there were 7 cases that underwent exploratory abdominal surgeries. As for the outcome of 30 patients with Covid-19 who required major surgery, it was as follows: 25 cases recovered, 5 patients died during the postoperative period, and some of them had complications as follows: 10 wound infection, 4 incisional hernia, and 3 septicemia. We concluded that emergency surgeries for the infected patients with the COVID-19 virus and who were present in the hospital were performed with high success rates, due to the full commitment to isolation and prevention measures.

Keywords: Emergency surgery, pandemic, infection.

INTRODUCTION

COVID-19 affects the respiratory system, causing highly progressive pneumonia and may cause multi-organ failure and death in critically ill patients¹⁻³. The first case of the infection was in an old and infirm person with symptoms on December 1, 2019. On February 24, 2020, the first confirmed case of COVID-19 was detected in Najaf Governorate in Iraq, for an Iranian student. Followed by 4 cases from one family in the city of Kirkuk on February 25 of the same year, and it was found that they also had a travel history to Iran⁴⁻⁷. With the growth of disease infection rates in Iraq, and patient's number who diagnosed with or suspected of being infected with the COVID-19 virus, the Health Directorate of Kirkuk Governorate (located in northern Iraq) decided to allocate Kirkuk General Hospital to receive COVID-19 patients who need to enter the hospital from all regions of Kirkuk Governorate. In our hospital, all routine elective surgery has been postponed as much as possible, in response to this global health crisis. The reduction in the use of health care resources for non-emergency activities showed a significant increase in the death rate in patients who underwent surgery during the outbreak of this infection⁸. COVID-19 is a particular challenge in the operating room environment⁹. The smoke from electric cautery devices during laparoscopic surgery may cause the Corona virus to aerosols, which increases the risk of it being transmitted to health care workers⁽¹⁰⁾. In addition, it has been proven that the virus is present in the peritoneal fluid of a patient with COVID-19 virus who undergoes laparotomy. Health care professionals are also exposed to an increased risk of exposure to COVID-19 through their participation in the treatment of this disease⁽¹¹⁾. This increases fears of a dwindling healthcare

workforce to combat the COVID-19 pandemic. Therefore, hospitals are required to provide services to individuals diagnosed with or suspected of being infected with the COVID-19 virus, side by side with treating patients of emergency surgery. Delaying emergency surgical procedures is not permissible, and therefore these surgeries must be performed with the utmost precautions taken to prevent the spread of infection^{12,13}. Since then, the conduct of emergency surgeries in our hospital has been continuous, and in a controlled manner in terms of use of personal protective equipment (PPE), choice of conservative management, choice of open surgeries rather than laparoscopic surgery wherever possible. The aim of this research is to evaluate the prevalence and follow-up the patients of COVID-19 who had experienced surgical emergencies, or those who developed such complaints while they are hospitalized as being treated for COVID-19 infection.

METHODS

The present study included a cross-sectional assessment of contingency surgical cases (without elective and semi-elective surgeries) that were conducted in the general surgery wards of the Kirkuk City General Hospital, which is designated for the admission of pandemic patients during the period from June 1, 2020 until December 31, 2020. The criteria covered were data on the gender and age of patients, surgeries, and mortality and recovery rates after surgery. Further, an evaluation was performed to all patients whether there was any diagnosis or suspicion of being infection by COVID-19 virus before admission and after discharge from the hospital. Statistical descriptive was performed using SPSS version 26 software.

RESULTS

A total of 76 adult patients required various emergency surgical procedures during the study period, of whom 7 died during the postoperative period, as shown in table 1. Regarding the procedures performed by the general surgeons during this period, there were 36 cases; 29 of them are males and 7 are females. Table 3 summarizes the various indicators of the nine cases that underwent

exploratory abdominal surgeries. The toll from 30 Covid-19 patients who required major surgery was as follows: 25 recovered cases, while 5 patients died during the postoperative period. Most of those who survived had a good course after surgery. On the other hand, some of them had complications as follows: in terms of wound infection (10), incisional hernia (4), and septicemia in 3 patients as shown in table 4 .

Table 1 :Number and type of surgeries and their outcomes

procedures	Number of cases	Survived	Died
Caesarean Section (CS)	36	35	1
Appendectomy	19	17	2
Explorative Laparotomy	9	6	3
Chest Tube	6	5	1
Neurosurgery	3	3	0
Ear, nose and throat surgeries (ENT)	1	1	0
Obstructed Inguinal Hernia Repair	2	2	0
Total	76	69	7

Table 2: Number of general surgeries, gender of the patients, and their mean age .

Procedure	Number of cases	Males	Females	Mean age in years
Appendectomy	19	15	4	38.4
Laparotomy	9	7	2	44.6
Chest tube	6	5	1	48.5
Hernia repair	2	2	0	53

Table 3: Intraoperative findings in exploratory laparotomy

Intraoperative finding	Number of surgical operations
Acute bowel obstruction	4
Peritonitis due to a perforated viscus	2
Abdominal trauma	1
Hernia stricture / revision	1
Haemoperitoneum due to ruptured ovarian cyst	1

Table 4: Major surgeries performed on Covid-19 patients and their outcomes

Procedure	Total cases	Wound infection	Incisional hernia	Septicemia	Dead
Appendectomy	19	4	1	1	2
Laparotomy	9	5	3	2	3
Hernia repair	2	1	0	0	0
Total	30	10	4	3	5

DISSCUSION

Although a large proportion of COVID-19 patients do not have symptoms, it is a contagious disease. Therefore, the surgical patients of the pandemic hospital have been considered brave guerrillas from the early days. We have proven that we can perform the necessary surgeries in our hospital designated for COVID-19 patients while taking the required measures and precautions, despite the medical and strategic practices related to dealing with patients infected by COVID-19 virus, and the related implications for public health. The surgical treatment algorithms on individuals suspected of having or diagnosed with COVID-19 were considered of secondary importance. Anesthesiologists have had a prominent role in this stage as they published different recommendations of protection means and equipment that necessary to protect them during intubation. Next, recommended methods of

surgery for diagnosed or suspected patients with COVID-19 were suggested^{14,15}.

Because the virus is transmitted mainly by droplets, so it remains for hours or even days on the contact surfaces, and it is an infection source during contact transmission. This poses a danger to health care workers, who are likely contact with these polluted surfaces, and so transfer the infection to themselves or others⁽¹⁶⁻²⁰⁾. However, efforts have been made to leave the largest possible time among the two processes, and all surfaces were decontaminated. Both of the surgical team and the anesthesia care team attempted to have a minimal members of staff in the room while anesthesia induction. Although there are recommendations for a COVID-19 test for all patients who need surgery²¹, these tests have not been requested in our nearest cases, because the test results will not be very fast, so the decision of surgery will not be affected in any case. With regard to the cases that had previously undergone surgery

in our hospital and were admitted to the surgery, all necessary precautions were taken and they were considered at risk due to their contact with visitors and health care workers. The laparoscopy uses in emergency surgery for suspected patients of having COVID-19 is a concern to the lack of explicit information in this regard yet. It has been shown that surgeries of laparoscopic can be done for colon cancer patients with COVID-19, with the need for good endoscopic gas management^{22,23}.

Also, a laparoscopic approach has been used in some gynecological cases, and the developing risk of COVID-19 has not been proven so far²⁴. Given that laparoscopy use is decreasing the hospital stay length, we derive that it's preferred to use in emergency surgery with experienced surgeons performance. As for cases of uncomplicated acute appendicitis, there are some researches that recommended the use of antibiotics while staying at home, by phone contact or other means that may not be an adequate means of access and communication in an epidemic area, with the existing weakness of access to health care facilities²⁵.

Because all diagnostic endoscopy procedures and elective surgeries have been postponed due to the continuing the pandemic period, there is growing concern about the increased frequency of providing emergency services with a clinical photo of ileus due to emergency cases that need immediate surgical intervention such as some tumors.

CONCLUSIONS

The data we obtained were the results of emergency surgeries for patients, who had contracted the COVID-19 virus, and dealt heavily with the pandemic in the hospital. In this research, cases demonstrated that both patients in an emergency situation were operated on and the infected patients by COVID-19 were successfully treated, without affecting some of them. Some by implementing isolation procedures, despite being administered in the hospital itself. Additionally, these positive results were monitored for a period of two weeks after discharge from the hospital.

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