

Retrospective analysis of the first 50 emergency/elective surgical cases in terms of mortality and morbidity in CoVid-19 Pandemic Hospital in Istanbul



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2019-nCoV currently named SARS-CoV-2 is a highly pathogenic Coronavirus identified in Wuhan China in December 2019. Turkey declared the first case relatively late compared to Asian and European countries on March 11, as the first SARS-CoV-2 infection in Turkey. In this study, we aimed to determine patients' outcomes in 50 surgeries done in the incubation period of SARS-CoV-2 in our hospital.

METHODS: We retrospectively analyzed the clinical data of 50 patients who underwent surgeries during the incubation period of CoVid-19 at Istinie University Gaziosmanpasa Medical Park Hospital in Istanbul, from March 2 to April 11, 2020.

RESULTS: The age of 50 patients range was 21 to 73, and the median age was 43.32 (64%) patients were women. The median length of hospital stay is 2.6 days (1-21). Operations at various difficulty levels were also performed on patients with co-morbidities. No complication or mortality was observed except for 1 patient, and the ICU requirement of that patient was also due to high energy trauma.

CONCLUSION: Although contrary claims have been made in various studies; it is the primary duty of us surgeons to operate CoVid-19 positive/suspicious patients safely and without any contamination, and on the other hand, to continue their operations without victimizing negative patients. In this pilot study, we would like to emphasize with necessary and adequate measures these can be achieved.

KEY WORDS: CoVid-19, SARS-CoV-2, Surgery

Introduction

Until the outbreak of severe acute respiratory syndrome (SARS) in 2002 which emerged in Guangdong China and the Middle East respiratory syndrome (MERS) in

2012 that struck Middle Eastern countries, Coronaviruses were not considered to be severely pathogenic to the human body¹⁻³. 2019-nCoV currently named SARS-CoV-2 is another highly pathogenic Coronavirus identified in Wuhan China in December 2019. According to the World Health Organization (WHO), as of 10 AM CEST 6 May 2020, 23.588.773 people were infected while 247,503 people have died so far⁴. Turkey declared the first case relatively late compared to Asian and European countries. On March 11, the first SARS-CoV-2 infection in Turkey was detected in a resident who

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had contracted the virus while traveling in Europe, exact on the same day as the WHO announced the disease as a pandemic ⁵. The Ministry of Health has issued a circular informing all doctors to cease every intervention other than emergency and cancer surgeries on 17.03.2020 ⁶. Given that the incubation period can last up to 14 days for SARS-CoV-2, all medical services including benign elective surgical procedures were done without any precise precaution for 14 days until that circular. In this study, we aimed to determine patients' outcomes in 50 surgeries done in the incubation period of SARS-CoV-2 in our hospital.

Material and Method

We retrospectively analyzed the clinical data of 50 patients who underwent surgeries during the incubation period of CoVid-19 at Istinie University Gaziosmanpasa Medical Park Hospital in Istanbul, from March 2 to April 11, 2020, after ethical approval was taken from the both local ethics committee and the Ministry of Health (2/2020.K-031). Laboratory confirmation of CoVid-19 was applied by quantitative PCR on samples from the respiratory tract. Inform consent was obtained from the patients. Moreover, additional consent was obtained from patients that their operations would be performed in a pandemic hospital. The clinical outcomes of these patients were monitored up to May 25, 2020, as the final date of follow-up after discharge.

The patients underwent various surgical procedures which were categorized into the levels according to the Health Practice Communiqué regulated within the framework of the Social Security Institution Law No. 5502, Law No. 5510, and the provisions of the "General Health Insurance Transactions Regulation". In this system, operations were grouped into five levels based on the degree of technical difficulty, complexity, and risk. To summarize, Level E operations low risk with simple procedures, Level D operations low technical difficulty with low risk, Level C operations with moderate risks and moderate complexity difficulty, low technical difficulty, Level B operations with moderate risk, moderate complexity, high technical complexity, Level A operations with high risk, high complexity and high technical difficulty. (Table I) Epidemiologic, clinical, underlying co-morbidities, laboratory, and radiological findings and outcomes data were analyzed.

Results

The age of 50 patients range was 21 to 73, and the median age was 43. Sex of patients; 32 (64%) of them were women and 18 (36%) of them were men. The median length of hospital stay is 2,6 days 1-21. 19 of operations (38%) were applied as laparoscopically. 45 of

TABLE I - Operation list according to the levels

	Level (A-E)	Number of Patients (n=50)
Laparoscopic Sleeve Gastrectomy	A	4
Very Low Anterior Resection	A	1
HIPEC + Righ Hemicolectomy	A	1
Laparoscopic Cholecystectomy	B	7
Breast-conserving surgery + Centinel Lymph Node Biopsy	B	8
Right Hemicolectomy	B	2
Herniorrhaphy	B	2
Modified Radical Mastectomy	B	2
Primer repair for Gastric perforation	B	1
Septorhinoplasty	B	1
Liposuction	B	1
Mandible implant	B	1
Appendectomy	C	7
Fistulectomy	C	2
Breast implant	C	2
Pilonidal cyst excision	D	2
Resection of cyst/benign tumor from the breast	D	2
Diagnostic Laparotomy	D	1
Scar ExcisionLipoma excision	EE	12
		50

TABLE II - Co-morbidities of 50 patients

Co-morbidities	n
Hypertension	11
Obesity	6
Cardiovascular	5
Diabetes	5
Hypothyroidism	4

TABLE III-Laboratory finding of 50 patients

Laboratory Findings	Median
WBC x109/L	8,5 (4,34-17,39)
NEU x109/L	5,7 (1,51-14,46)
LYM x109/L	2,1 (0,37-5,2)
PLT x109/L	252,204 (125-462)

operations were applied under general anesthesia. Emergent/Elective operations ratio is 11/39. 26 patients (52%) had one or more co-morbidities like hypertension, obesity, hypothyroid, cardiac, and diabetes can be listed (Table II).

In this study, 25 (50%) of patients underwent Level B type surgery. Respectively, Level A was 6, Level C was 11, Level D was 5, and Level E was 3. (Tab. 1) Only one patient admitted to the ICU due to previous pelvic stabilization after the car accident, who underwent diagnostic laparotomy due to the suspicion of perforation. As clinical symptom fever, fatigue, dry cough, dyspnea,

and myalgia were checked for all the patients. However, none of these symptoms mentioned above could be detected until the hospitalization, discharge, or even 14 days after discharge.

In laboratory testings, white blood cells, neutrophils, lymphocytes, platelets were examined for all patients at the first admission (Table III).

Radiologically, while all 50 patients had normal PA Chest radiography, Computerized Tomography (CT) was performed only for 14 patients with suspected contact. 4 of these patients had abnormal CT findings with unilateral/bilateral distribution of patchy shadows (Fig. 1). However, their PCR testings were negative like the others. Only one ex was happened due to the ARDS, ICU-patient as described above.

Discussion

This retrospective study describes the clinical characteristics and outcomes of operative patients during the pandemic of CoVid-19. Many studies suggested that surgery may accelerate and exacerbate CoVid-19 progression⁷. However, it is not easy to say every CoVid-19 positive patient has a high-risk in terms of morbidity and mortality. Selection of patients is a very important step during the CoVid-19 pandemic. There is no bias about the surgery for an emergency. However, malignancy and other elective surgeries have been the subject of debate among healthcare professionals. Akyol et al.⁶ reviewed factors to consider in the treatment planning for colorectal cancer disease. This model should be adjusted for all surgical divisions.

1. Identifying Patients at Risk
2. Clinical Presentation
3. Tumor Characteristic for the cancer
4. Surgical Risk Factors
5. The Conditions Of the Health Care System

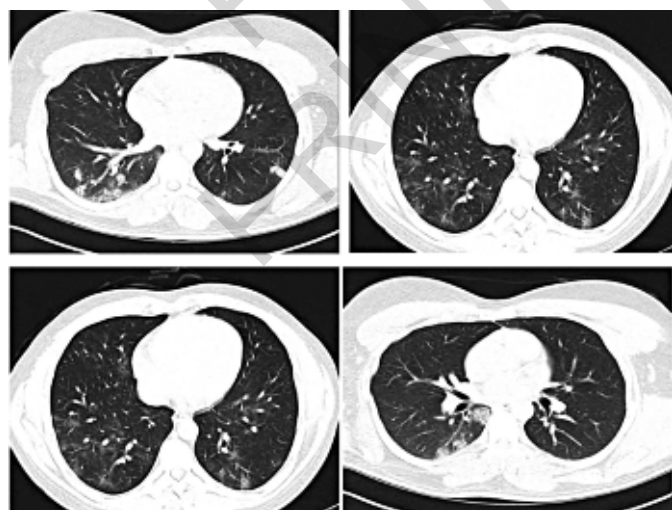


Fig. 1: Abnormal CT findings.

Major risk factors in terms of mortality during the COVID-19 outbreak are in the group of over 60 years of age, and particularly in those with co-morbid diseases. Obesity is an important risk factor for SARS-CoV-2 severity⁸. In the current study, the age of 50 patients range was 21 to 73, and the median age was 43. In terms of co-morbidities 11 patients have hypertension, 6 have obesity, 5 have cardiovascular disease, 5 have diabetes, and 4 have hypothyroidism. In our study, we realized that 50 patients who underwent surgeries range from A to E level, also have positive CT findings, no case worsened and no complication developed except one ICU-patient, who has non-CoVid-19 mortal causes like high energy trauma. Furthermore, it is noticeable that the cases were discharged without any problem despite the high co-morbidity rates.

Considering that this process will be prolonged; the necessary and sufficient measures should be taken to continue performing both elective and surgical surgeries and the disability of other patients should be reduced, and this 50-case study is an indication that this can be achieved. Patients can be operated and discharged with-



Fig. 2: Preparation before surgery.



Fig. 3: At operation.

out any problem, even if there is a pandemic hospital by following various protocols strictly.

In terms of surgeon and healthcare staff, the most important problem is the risks posed by the operation itself to the surgeon. As stated by Colakoglu et al.⁹ in their review; especially the operations of cancer are relatively long, and the surgeon is in direct contact with the patient's body fluids during this period. Also, it is not yet clear whether the COVID-19 virus is transported by fumes from the electrocautery used, or by gases leaking from the patient in minimally invasive surgery. For that reason, the personal protection of the surgery is important in general measures. Personal protective equipment must be provided for all personnel to take droplet and contact isolation measures. Self-contamination should be taken into consideration when wearing and removing these types of equipment. All operating room personnel should be trained to wear personal protective equipment. Patients with CoVid-19 positive or suspicious should come to the operating room with a surgical mask after all preparations are completed. The pictures below show the pictures of the operating room team with the equipment pre-operation and peri-operation (Figs. 2, 3).

In terms of emergency cases, a dedicated operating room (OR) should be available for confirmed or suspected COVID-19 patients. All patients must be treated as presumed COVID-19 positive if they have symptoms/exposure history that warrants testing or are unable to provide information such as unconscious trauma patients¹⁰. In our study, 17 patients have undergone operation because of an emergency such as acute appendicitis, incarcerated inguinal hernia, gastric perforation, etc.

All operations can be performed both laparoscopically and conventionally, as seen in our study. While the contact with the liquid and tissues is high in the conven-

tional operation; in laparoscopy, there is a risk of gas contamination or viral contamination with surgical smoke. Therefore, constant pressure insufflators or central aspirator systems should be used¹¹. In the treatment of Covid-19 positive or suspicious patients, like anesthesiologists surgeries are also at great risk, so optimum protection conditions that can be achieved pre-operation, peri-operation, and post-operation intervention should be established.

Our study has several limitations: The sample size of the study was small because most patients did not want to have elective surgery in this period. The presence of CoVid-19 findings in CT images in PCR test negative patients raises a question mark about the kits.

We should not forget that; as surgeons, we have to do surgery for our patients. Although contrary claims have been made in various studies; it is the primary duty of us, surgeons, to operate CoVid-19 positive/suspicious patients safely and without any contamination, and on the other hand, to continue their operations without victimizing negative patients. In this pilot study, we would like to emphasize with necessary and adequate measures these can be achieved.

As a result, operations should be performed safely in pandemic hospitals with separate services, separate operating rooms, and separate staff entrance and exit opportunities.

Riassunto

Il 2019-nCoV, attualmente denominato SARS-CoV-2, è un Coronavirus altamente patogeno identificato a Wuhan in Cina a dicembre 2019. L'11 marzo è stato dichiarato il primo caso di infezione SARS-CoV-2 in Turchia, relativamente tardi rispetto ai paesi asiatici ed europei. In questo studio, abbiamo rilevato i risultati dei pazienti in 50 interventi chirurgici eseguiti nel periodo di incubazione di SARS-CoV-2 nel nostro ospedale.

Sono stati analizzati retrospettivamente i dati clinici di 50 pazienti sottoposti a interventi chirurgici durante il periodo di incubazione di CoVid-19 presso l'ospedale Istinye Gaziosmanpasa Medical Park di Istanbul, dal 2 marzo all'11 aprile 2020.

L'età dei 50 pazienti variava dai 21 ai 73 anni e l'età media era di 43 anni. 32 (64%) pazienti erano donne. La durata media della degenza ospedaliera è stata di 2,6 giorni (1-21). Sono state inoltre eseguite operazioni a vari livelli di difficoltà su pazienti che presentavano comorbidità. Nessuna complicazione o mortalità è stata riscontrata ad eccezione di 1 paziente e la necessità di ricorrere alla terapia intensiva di tale paziente era dovuto anche dall'aver riportato un trauma ad alta energia. In conclusione, sebbene affermazioni contrarie siano state fatte in vari studi; è dovere primario di noi chirurghi operare pazienti CoVid-19 positivi e/o sospetti, ma in modo sicuro e senza alcuna contaminazione. D'altra parte

bisogna continuare con gli interventi senza vittimizzare i pazienti negativi. In questo studio pilota, vorremmo sottolineare le misure necessarie e adeguate che possono essere raggiunte.

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