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The Managements of Surgical Emergencies of Suspected and High-Risk Patients of COVID-19

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Abstract **Original Research Article**

Objective: In this study our main goal is to evaluate the managements of surgical emergencies of suspected and high-risk patients of COVID-19. ***Method:*** This observational study was conducted at Tertiary medical college and hospital from May 2020 to March 2021. Where 80 COVID-19 suspected patients of both genders with different ages (15- 65) who was admitted to OPD for surgical emergencies. ***Results:*** During the study, majority belong to 56-65years age group, 35% and most of them were male, 65%. According to distribution of patients according their emergency conditions, 35% cases were burst appendix, 30% cases perforation gas containing hollow viscus, 25% were Intestinal obstructions. Mean duration of hospital was 6.5±1.2 days and intussusception seen in 5 cases after surgery. ***Conclusions:*** In conclusion, the number of emergency surgeries decreased during the pandemic. Perhaps a new algorithm is required for emergencies in these unusual situations.

Keywords: surgical emergencies, Covid-19, infectious respiratory disease.

INTRODUCTION

Coronavirus disease 2019 (COVID-19) is an infectious respiratory disease caused by the new virus, severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). Since its appearance in December 2019, the COVID-19 infection has spread globally and has been declared a pandemic by the World Health Organization on March 11, 2020 [1]. SARS-CoV-2 is characterized by respiratory symptoms such as fever, dry cough, shortness of breath and infiltration in chest X-ray [2].

Despite the mild or moderate prognosis in most COVID-19 patients, up to 5–10% can follow a severe, potentially life-threatening course.

In addition to the risk of death, due to the rapid spread of the pandemic, easy transmission from person to person and high mortality rate, it brought unbearable psychological pressures and concerns [3, 4].

In this context, there may have been a decrease in patients' application to hospitals even in emergencies. There is a reported 38% reduction in US cardiac catheterization laboratory ST-Elevation Myocardial Infarction (STEMI) which occurred in the early stage of the COVID-19 pan-demic. Similar results were reported in Spain with a 40% reduction [5].

In Bangladesh, although individual centres and specialties rapidly identified the impact of COVID-19 on surgical services, there remains a lack of information on its effect on emergency surgery at a nationwide level during lockdown.

In this study our main goal is to evaluate the managements of surgical emergencies of suspected and high-risk patients of COVID-19.

Objective

- To evaluate the managements of surgical emergencies of suspected and high risk patients of COVID-19.

METHODOLOGY

Type of study: This was an observational study.

Place of the study: This study was conducted at Tertiary medical college and hospital from May 2020 to March 2021.

Study Population: This study was conducted on 80 COVID-19 suspected patients of both genders with different ages (15- 65) who was admitted to OPD for surgical emergencies.

Data Analysis

All collected data were coding and input in SPSS-25 for further analysis. Both descriptive and inferential statistics done. Descriptive statistics included frequency distribution, percent, mean, standard deviation; graph, tables, figures and inferential statistics.

RESULTS

In table-1 shows age distribution of the patients where majority belong to 56-65years age group. The following table is given below in detail:

Table-1: Age distribution of the patients

Age group	%
<15->25years	5%
25-35 years	15%
36-45 years	20%
46-55 years	25%
56-65 years	35%

In Figure-1 shows gender distribution of the patients where most of the 65% were male. The following figure is given below in detail:

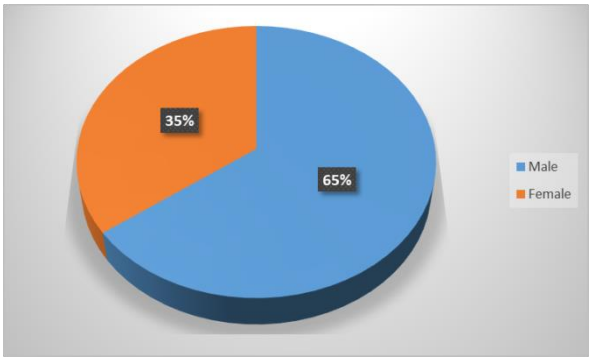

Figure-1: Gender distribution of the patients

In Table-2 shows distribution of patients according their emergency conditions where 35% cases were burst appendix, 30% cases perforation gas containing hollow viscus, 25% were Intestinal obstructions. The following table is given below in detail:

Table-2: Distribution of patients according their emergency conditions

Emergency conditions	%
Burst appendix	35%
Perforation gas containing hollow viscus	30%
Intestinal obstructions	25%
Abdominal trauma	15%

In table-3 shows distribution of the patients according to post-operative complications and durations of hospital stay where mean duration of hospital was 6.5±1.2 days and intussusception seen in 5 cases after surgery. The following table is given below in detail:

Table-3: Distribution of the patients according to post-operative complications

Duration of hospital	Mean duration
	6.5±1.2 days
Post-operative complications	**n**
Volvulus	3
intussusception	5
Recurrent Intestinal obstructions	4

DISCUSSION

The COVID-19 pandemic has spread to more than 218 countries. Individual healthcare systems throughout the world had to reorganize their services swiftly to fight this crisis. The sudden onset and rapid transmission needed some drastic changes in the way the health system needed to function. However, there are some positive signs as some vaccines (Pfizer, Moderna, Oxford, etc) have been approved and the mass vaccination already started [6].

Redeployment of the surgeons to other local specialties such as intensive therapy unit or acute medicine should not harm the team ability to provide timely care for emergency surgical patients. A proportion of patients with acute emergencies will require surgical care and some of those will need an urgent operation. Perioperative management of these patients has become challenging as relative immunocompromise after major surgical intervention worsens the prognosis of those who either contract COVID-19 perioperatively or have been asymptomatic carriers prior to intervention [7]. Despite hospitals instituting strategies to cohort patients with proven COVID-19 infection, the virus can spread to other patients. Patients may also be asymptomatic with infection acquired in community.

Emergency surgical patients can be distinguished into COVID-19-positive confirmed cases and COVID-19 suspected cases. Either group should be handled as positive until proved otherwise for the safety of all healthcare workers. Swabs and CT scans are requested as appropriate at admission but obtaining results should not delay definitive surgical management.

In our study 80 patients were COVID-19 suspected patients and majority were belonging to 55-65years age group which was quite similar to other studies [8, 9].

Besides that, male was more prone to develop diseases because they may b went outside home or their immune system somewhat weak to female. Similar results also documented to other study. [10] even one study reported that, male patients have almost three times the odds of requiring intensive treatment unit (ITU) admission (OR = 2.84; 95% CI = 2.06, 3.92) and higher odds of death (OR = 1.39; 95% CI = 1.31, 1.47) compared to females. With few exceptions, the sex bias observed in COVID-19 is a worldwide phenomenon. [11] According to report expression of angiotensin converting enzyme 2 (ACE2) receptors – which facilitate SARS-CoV-2 viral entry and human to human transmission is different between the sexes. Oestradiol may influence ACE2 expression, and the gene for ACE2 is located in the X chromosome, which may render it susceptible to escaping X-inactivation in women [12].

In one study it was observed that, in the Pandemic Group, there was a 73% reduction in the number of patients who underwent surgery for acute appendicitis. Admissions for uncomplicated appendicitis decreased by 81.3%, and admissions for complicated appendicitis decreased by 38%. However, the rate of patient who underwent surgery for complicated appendicitis was statistically higher in the Pandemic Group. While the total postoperative complications and reoperations were similar between the two groups, the rate of mortality was statistically higher in the Pandemic Group [13, 14].

Whereas, in our study we found that, 28% cases were burst appendix, 23% cases perforation gas containing hollow viscus, 20% were Intestinal obstructions. Also mean duration of hospital was 6.5±1.2 days and intussusception seen in 5 cases after surgery. Where as in other study it was reported that among whom, 63.3% were discharged, 29.1% of them left against medical advice (LAMA), with a 7.6% death rate during the hospital stay. Mean hospital stay was 2.10 ± 3.52 days [15]. Which was quite similar to other study [16].

CONCLUSION

In conclusion, the number of emergency surgeries decreased during the pandemic. Perhaps a new algorithm is required for emergencies in these unusual situations.

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