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Original article

Retrospective comparative study on change in the spectrum of emergencies and their surgical outcome during COVID 19 pandemic.

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ABSTRACT:

A total of 1030 cases were studied in a duration of 6 months at Goa Medical College, Bambolim. They were divided into 2 groups (I) Emergency admissions Pre Covid and (II) admissions during peak Covid. Emergencies consisted of laparotomies, amputations, septic emergencies, trauma, rectum and anal canal related and bowel ischemia and gangrene. Parameters studied and compared were demographic profile, indications for emergency operation, post operative ICU stay requiring ventilatory support and perioperative mortality between two periods. The comparison revealed significant results highlighting the differences between the two time periods. There is an overall decrease in the number of cases of emergency surgeries.

Keywords : COVID 19 pandemic, spectrum of emergencies

INTRODUCTION:

The novel coronavirus was declared a public health emergency of international interest by the World Health Organisation on January 30, 2020 and had caused huge disruptions in functioning of health care systems worldwide.The Indian Government announced a country wide lockdown in March 2020 to control the spread of the virus. It had a huge impact on emergency surgical services with a significant decrease in patient admissions all over the world. The COVID-19 pandemic has negatively affected the healthcare systems around the world to the point of collapse in some countries.[4] In the forewarned countries of western world, patients initially avoided hospitals due to fear of COVID-19 and it's devastating effect.[1]

SARS-Cov-2 represents a particular challenge in the operating theatre environment. The virus has been shown to be present in the peritoneal fluid of a patient with known COVID19 undergoing laparotomy. [2] Most of the elective surgeries were postponed or stopped, while emergency surgeries were performed irrespective of Covid positive state.[3] Surgical emergencies include general trauma, amputations,laparotomies, septic emergencies. Knowing the changing spectrum of the surgical emergencies in the pandemic situation makes us prepared for any such circumstances in the future.

In this study, we have compared the indications for surgery, morbidity and mortality patterns between the precovid period and during peak covid in our hospital. The purpose of this study is to determine the impacts Covid 19 pandemic had on emergency urgeries performed in Goa Medical College, Bambolim.

METHODOLOGY:

Study design - A Hospital Record based Retrospective Comparative Study

Sample size - 1030

Duration of study - 6 months

Patients were divided into 2 groups -

Emergency Admissions during Pre COVID period (July to December 2019)

Emergency Admissions during Peak COVID period (July to December 2020)

Parameters studied and compared:

1. Demographic profile
2. Indications for Emergency operation
3. Post-operative ICU stay requiring ventilatory support
4. Perioperative mortality

RESULTS:

Patient profile:

	Before COVID	**During COVID**
Total EOT cases	772	258 (33.41%)
Age (Average)	52	64
Male %	82	78
Female %	18	22

Surgical outcomes:

	Laparotomy	**Amputation**	**Septic emergencies**	**Trauma**	**Abscess**	**Rectum and anal canal related**	**Ischemic (bowel gangrene)**
Before COVID	163	149	175	23	225	13	5
During COVID	70	45	62	1	66	7	2
Reduction (%)	42.94	30.20	35.43	4.35	29.33	53.85	40.00

Incidence of Amputations:

	Pre-covid	**During Covid**
Major amputations	61	26
Minor amputations	88	19

Resection Anastomosis Rate:

	Pre-covid	**During Covid**
Intestinal obstruction	25	28
Resection anastomosis	3	10
% Of R&A done	12%	35

Anastomotic leak Rate:

	Pre-covid	**During Covid**
Resection anastomosis	10	13
Anastomotic leak	2	8

Average length of hospital stay:

	Pre-covid	**During Covid**
Hospital stay (days)	5	8

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Post operative complications:

	Pre-covid	**During Covid**
Total EOT cases	772	258
SSI	12	48
Icu admissions	6	15
Anastomotic leak	2	8

DISCUSSION:

Our study groups included 772 surgeries performed in precovid period(July to December 2019) as compared to 258 surgeries during covid (July to December 2020) with an absolute decrease of - 33.41% during covid. The mean age seen in Pre Covid period was 52 years while during Covid was seen to be 64.There was a male preponderance of 82%in 2019 and 78% in 2020. There is no significant Statistical Difference in the AGE of patients during the Pre Covid Time as compared to the During Peak COVID time period with a p value of 0.846 which is not statistically significant.

We observed a decrease in overall emergency surgical procedures with individual reduction rate for following being- -42.94% in laparotomies, -30.20% in amputations, -35.43% in septic emergencies, -4.35% in trauma cases, -29.33% in abscesses, -53.85rectum and anal canal related surgeries, -40.00% in ischemic (bowel gangrene). There was a decrease in both major and minor amputation with reduction rates being % and % respectively.There is Significant Statistical Difference in the type of amputations performed during the Pre Covid Time as compared to the During Peak COVID time period with a chi square value of 3.9618 and a p value of 0.046 which is statistically significant.

The average length of hospital stay was seen to increase from 5 days in 2019 to 8 days in 2020. Hospital stay was longer in COVID patients by an average of 3 days which was statistically significant (p value= 0.03). There was increase in number of resection and anastomosis 10 cases in precovid period as compared to 13 during Covid and 2 cases of anastomotic leak as compared to 8 during the Covid period.There is Significant Statistical Difference in the number of patients who underwent Resection and Anastomosis during the Pre Covid Time as compared to the During Peak COVID time period with a chi square value of 4.0123 and a p value of 0.04517 which is statistically significant.

There is Significant Statistical Difference in the number of patients who had an anastomotic leak during the Pre Covid Time as compared to the During Peak COVID time period with a chi square value of 3.9 and a p value of 0.046 which is statistically significant.

CONCLUSION

During the first wave of COVID 19, as compared with pre covid period we found

1.Poor surgical outcomes with respect to ICU stay and anastomotic leak.

2.Significant decrease in trauma related surgical emergencies explained by restricted population mobility.

3.Significant increase in Resection & Anastomosis rate and Anastomotic leak Rate

4.Significant increase in hospital stay

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