

Impact of the Pandemic COVID-19 on Digestive Endoscopic Activity: Experience of a Moroccan Service

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ABSTRACT

OBJECTIVES: In Morocco, in order to prepare health facilities for the upcoming influx of COVID-19 patients, it was necessary to minimize non-COVID-19 related activities, which led to a significant reduction of non-urgent procedures. The aim of the study was to describe the impact of the COVID-19 pandemic on the digestive endoscopic activity in our department by comparing it to the previous year. Study design: This was a retrospective study.

METHODS: We performed a retrospective study, comparing endoscopic procedures performed (excluding emergencies) in both 2019 and 2020, especially the periods from March 20 to June 30 (lockdown period). Statistical analysis was performed by SPSS 21.0 software.

RESULTS: 5018 endoscopy procedures were performed in 2019 and 2020, but only 1869 performed in 2020. For the lockdown period,

a large decrease in the number of patients undergoing endoscopy was seen in 2020 compared with 2019 (179 vs 863). Gastroscopy, colonoscopy, and rectosigmoidoscopy volumes experienced a 59%, 53%, and 67% reduction, respectively. A reduction of 50% in the number of echo-endoscopy was also seen, especially during the lockdown period 11 versus 21 in 2019 ($p = 0.006$), whereas the number of ERCPs remained relatively unchanged, with 22 during the lockdown period versus 29 in 2019 ($p < 0.001$). We also compared the different endoscopy procedures performed during the post-lockdown period compared to the same period in 2019.

CONCLUSION: The COVID-19 pandemic had a significant impact on endoscopy services, its staff and especially on patients following the reduction and limitation of endoscopy indications and procedures.

Key words: COVID-19 pandemic; Endoscopy activity; Lockdown

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INTRODUCTION

In Morocco, the first confirmed case of COVID-19 was reported on March 2, 2020, followed by the implementation of measures to contain the spread of the epidemic, and on March 19 the Ministry of Interior declared a state of health emergency and restricted movement in Morocco from Friday, March 20, at 6:00 p.m. until further notice. This led to a large-scale initiative to prepare all health facilities for the upcoming influx of COVID-19 patients and to minimize non-COVID-19 related activities by limiting hospital activities except for certain services. Which led, by the end of March, to a significant reduction of non-urgent procedures.

The aim of the study was to describe the impact of the COVID-19 pandemic on the digestive endoscopic activity in our department by comparing it to the previous year.

METHODS

We performed a retrospective study in the Gastroenterology II department of the Military Hospital of Instruction Mohamed V in Rabat. The study was based on the data of digestive and interventional endoscopy collected in the department's records, where the patient's characteristics, indications, and results of the different endoscopic procedures are reported.

The primary outcome of this study was the number of procedures performed. Other outcomes relied on the type of indication and whether there was a statistically significant difference between the different periods of 2020 and 2019.

To investigate the effect of the pandemic, we have compared the specific period from March 20 to June 30 in 2019 and 2020 to assess the effect of the partial lifting of the lockdown measures. We have also studied the post-lockdown period from July 1 to December 31 2020 as well as the pre-lockdown period from January 1 to March 19 2020. The procedures concerned were esophageal fibroscopy, colonoscopy, rectosigmoidoscopy and their diagnostic and therapeutic indication [esophageal variceal ligation, polypectomy or mucosectomy, dilatation or argon plasma coagulation (APC)] as well as echo-endoscopy and endoscopic retrograde cholangiopancreatography (ERCP).

The procedures performed in the emergency department by the on-call teams that were not collected in the department's registry were excluded from the study. The IBM SPSS statistics version 21 software was used for statistical analysis.

Categorical variables were reported as headcount (%) with 95% confidence intervals (CI). A p value of < 0.05 was considered statistically significant.

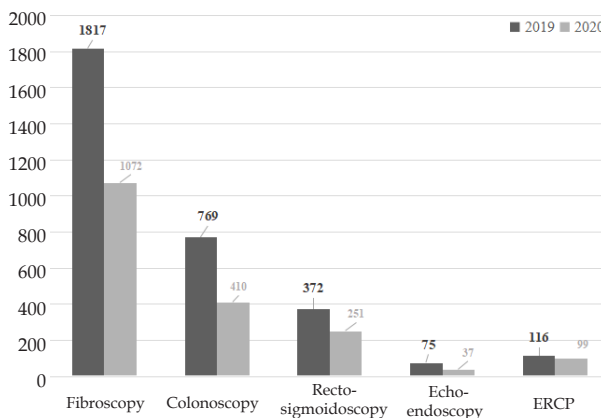


Figure 1 Comparison of the total number of endoscopy procedures performed between the years 2019 and 2020.

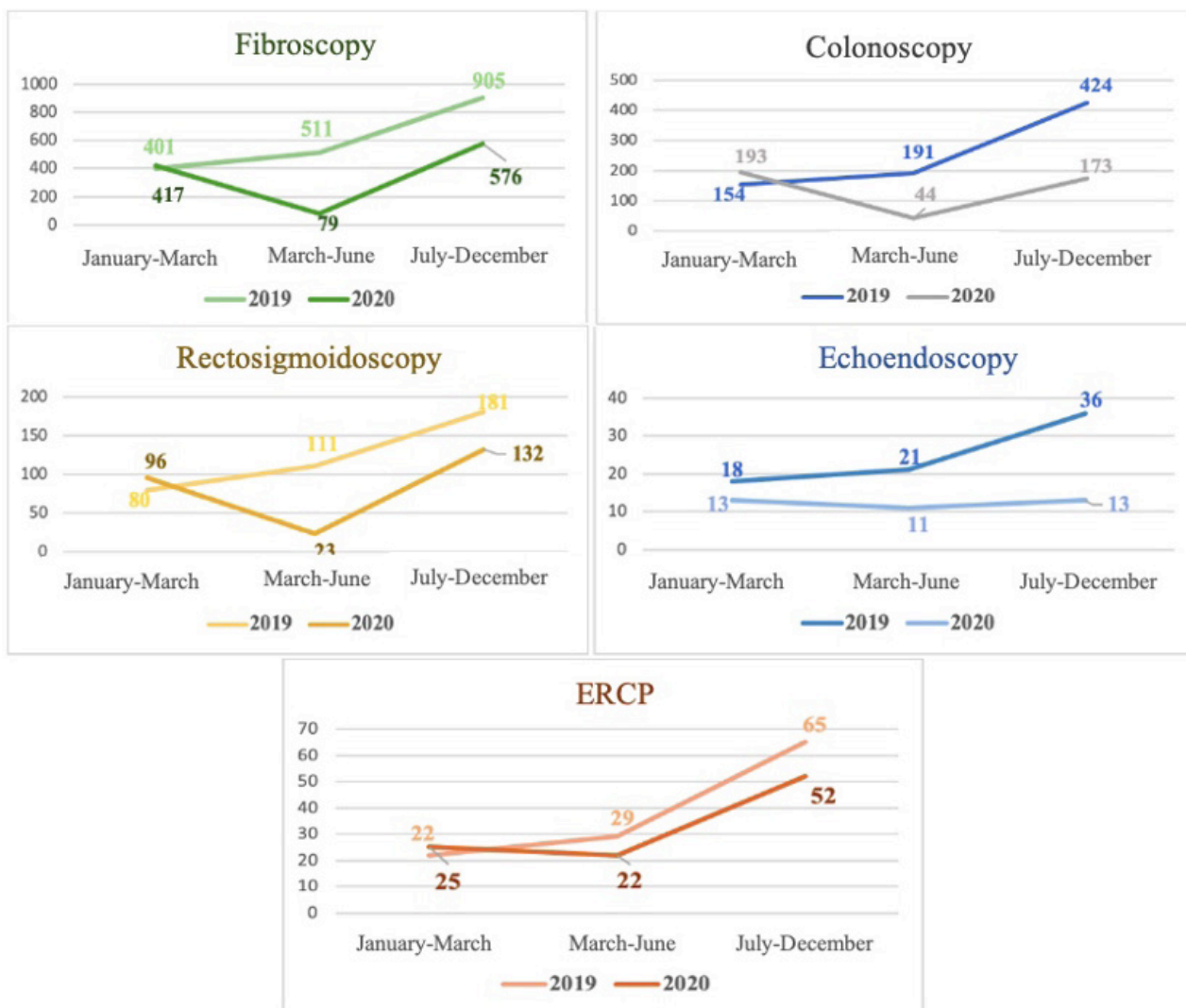


Figure 2 Number of different endoscopy procedures during 2020 and 2019.

RESULTS

5018 endoscopy procedures were performed in 2019 and 2020, but only 1869 performed in 2020 (Figure 1).

For the period from March 20 to 30 June, a large decrease in the number of patients undergoing endoscopy was seen in 2020 compared with 2019 (179 vs 863).

Gastroscopy, colonoscopy, and rectosigmoidoscopy volumes experienced a 59% (from 1817 to 1072), 53% (from 769 to 410), and 67% (from 372 to 251) reduction, respectively (Figure 2).

Indeed among 1072 gastroscopy interventions in 2020 only 79 were performed between March and June compared to 511 during the same period in 2019 ($p = 0.001$). Only 28 were performed for therapeutic purposes (12 esophageal varices ligation, 8 esophageal dilatations, 6 APC of gastroduodenal angiodysplasias and 2 polypectomy) ($p = 0.15$) compared to 33 in 2019 (6 esophageal varicose vein ligations, 14 esophageal dilatations, 5 APC of gastroduodenal angiodysplasias and 6 polypectomy) ($p = 0.15$).

410 colonoscopy procedures were performed in 2020, of which 42 were for therapeutic purposes (33 polypectomy/mucosectomy and 10 APC of colonic angiodysplasias) compared to 92 in 2019 (72 polypectomies/mucosectomies and 22 argon plasma coagulation of colonic angiodysplasias) ($p = 0.37$).

A reduction of 50% in the number of echo-endoscopy was also seen, especially during the lockdown period 11 versus 21 in 2019 ($p = 0.006$), whereas the number of ERCPs remained relatively unchanged (from 116 in 2019 to 99 in 2020), with 22 during the lockdown period versus 29 in 2019 ($p < 0.001$) (Figure 2).

We have also compared the different endoscopy procedures performed during the post-lockdown period of 2020 compared to the same period of 2019 (Table 1).

DISCUSSION

The COVID-19 pandemic has had a disruptive effect on workflow and safety in GI endoscopy units worldwide. Most digestive endoscopy units in Morocco have had to manage the situation with staffing shortages, substantial reductions in the volume of screening endoscopy procedures, tremendous pressure on the prioritization of endoscopic procedures, and postponement of many procedures without knowing exactly when patients will be rescheduled. It is also important to note that the majority of our procedures are performed in the presence of anesthetists (sedation or general anesthesia), since they have also been less available, this has also contributed to the reduction of our activity.

In France, Belle *et al.* measured the impact of the COVID-19 pandemic on gastrointestinal endoscopy activity^[1]. Endoscopy departments experienced a disruption in their activity. On the one hand, one third of endoscopists were involved in the management of COVID-19 patients outside the endoscopy department, while on the other hand, only a few endoscopy departments benefited from a specific circuit for COVID-19 patients, but also difficulties for some practitioners to obtain all the personal protective equipment. Indeed, 12.8% of gastroenterologists reported having symptoms compatible with COVID-19 infection^[1].

Following the health situation and its impact on the different endoscopy services, the European society of gastro-intestinal endoscopy (ESGE) has set out certain rules and recommendations concerning both the management of the risk before, during, and after the performance of the endoscopy procedure. Moreover, the planning of endoscopy procedures according to the indication and the temporary postponement of elective and non-urgent endoscopy

Table 1 Comparison of endoscopic procedures performed during the post-lockdown period July-December in 2020 and 2019.

	Post-lockdown period 2019 (N=1611)	Post-lockdown period 2020 (N=986)	P
Gastroscopy#	905 (56.2)	576 (63.3)	<0.001
Colonoscopy#	424 (26.3)	173 (19)	<0.001
Rectosigmoidoscopy #	181 (11.2)	132 (14.5)	0.017
Echoendoscopy#	36 (2.2)	13 (1.4)	0.159
ERCP#	65 (4)	52 (5.7)	0.05

#expressed in numbers (percentage).

procedures, have depended on the availability of local human resources and local policies that may be impacted by regional/national pandemic rules/regulations^[2].

Two European studies examined the volume, indication, and outcomes of endoscopic procedures during the COVID-19 lockdown period between March and May 2020 compared with the same period in 2019. A study of 15 centers in the Netherlands^[3] and a study of 5 centers in Northern Italy^[4], these found a major reduction of approximately 50% in the volume of endoscopy procedures, a reduction comparable to our results. This observation is not new. In fact, a variable decrease has been reported in several studies - up to 75% and 100% at the height of the pandemic last spring^[5].

In the Dutch study there was a significant reduction in endoscopic procedures during the lockdown period from March to May 2020, in particular gastroscopy and colonoscopy^[3]. This result is consistent with observations in our department but also in other countries^[6].

In our study, in contrast to fibroscopy and colonoscopy, the volume of ERCP remained relatively unchanged, which could be explained by the fact that most indications for ERCP are emergencies and therefore delays are not recommended for these patients.

After the post-lockdown period, a marked increase in endoscopic procedures was observed. However, these remain lower than the number of procedures performed during the same period of the previous year (Table 1), despite the presence of waiting lists due to postponed procedures, this did not lead to a resumption of activity, this is explained in particular by a gradual and not total resumption of endoscopy days without having fully reached our activity before the lockdown. As also observed in a survey of North American endoscopists^[7], a persistent lack of personal protective equipment and other resources may have prevented a further increase in endoscopy volumes to compensate for the delay of elective procedures.

CONCLUSION

The COVID-19 pandemic had a significant impact on endoscopy services, its staff and especially on patients following the reduction and limitation of endoscopy indications and procedures. Therefore, it was necessary to select patients to be prioritized for urgent procedures while waiting the return of endoscopic activities to normal.

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