

The Digestive Surgery Department's Activity Report during the COVID-19 Pandemic "Quarantine Period"

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Abstract: In this very particular moment through which we are living, it seems interesting to expose our own experience in taking digestive surgery patients. Emergency, oncological surgeries remained a priority. Functional surgery was deferred. On March 19, 2020, the Interior Ministry declares a state of health emergency and restricted traffic in Morocco from Friday (March 20.2020) until further notice, and declares this as the only inevitable way to keep the coronavirus under control. Therefore, The Covid-19 pandemic is changing the organization of healthcare and has a direct impact on digestive surgery. Healthcare priorities and circuits are being modified. The Mohamed the VI university Hospital consists of 4 hospitals and two centers; during this period, Ibn Tofail Hospital was dedicated to surgical management (all specialties combined). In addition to public Hospitals and some Mohamed the VI University Hospitals were involved in the Covid patients care. This last had two poles of digestive surgery (two different hospitals), the first one was dedicated to Covid-19 patients, and latter one for non-Covid patients, the advantage of this second pole: different specialties with a surgical resuscitation and emergency intensive care unit. The precautions, taken, were given the large number of healthy carriers; it must be emphasized that protective measures must be used in the care of all personnel and patients. Surgical treatment of 625 patients (From 20 March to 10 June) was carried out in collaboration with the resuscitation department, radiology, gastroenterology, oncology, biological laboratory, anatomopathology, paramedical staff and mainly in responsibility sense of the university hospital direction and the ministry of health engagement. We detail the results below. The report purpose: there is probably an added risk due to the pandemic that must be balanced against the risk incurred by deferring surgery. Not only the Covid-19 caused death during this pandemic, also we must work hard to treat other pathologies which can be fatal.

Key words: Digestive surgery during Covid-19 pandemic, Lockdown, Emergency § oncologic surgery

1. Background

On 11 March 2020 the World Health Organization declared that the epidemic of Covid-19 had become a pandemic. The whole world, public authorities are recommending strengthened preventive measures that call on the public's civic responsibility. The Health care is putting to the test which was responsible of the modification: health priorities, care circuit and the care organization. Our Priorities "Emergency and Oncologic surgeries", the functional surgery was delayed.

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2. Methods

Ibn Tofail Hospital is an annex among other hospitals that are part of the Mohamed the VI hospital university center; Ibn Tofail hospital was dedicated for the surgical management of patients during the COVID period. The other University hospital's annexes were dedicated for Covid patients caring. Patients' files were reviewed on admission and after discharge. Data retrieved included surgical report during the containment period, post operative's management and evidence of complicated disease at presentation, length of hospital stay and mortality rate.

3. Outcomes

Ibn Tofail Hospital drains the neighboring Marrakech regions and the south of Morocco. Cases: A total of 625 patients (Figure. 1). They were admitted at our department of digestive surgery, in Ibn Tofail Hospital, during the Covid-19 quarantine period. Our study covers the period from March 20 to June 10 2020. We subdivided it into: **First phase:** from March 20 to April 20 (124 patients: Figure 2), **second phase:** from April 20 to May 20 (340 patients: Figure 3) and **the third one:** from May 20 to June 10 (161 patients: Figure 4). Surgical treatment of 625 patients was carried out in collaboration with the resuscitation department, radiology, gastroenterology, oncology, biological laboratory, anatomopathology departments, paramedical staff and mainly in responsibility sense of the university hospital.

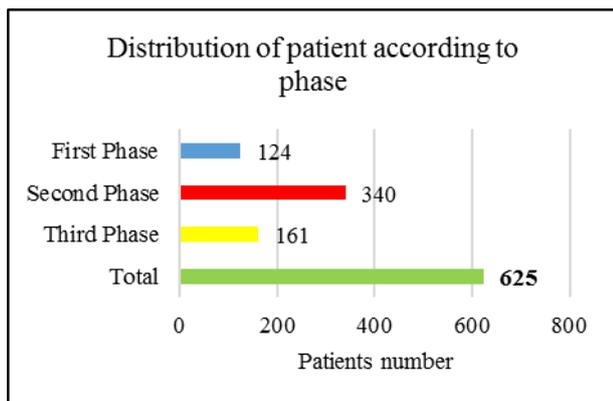
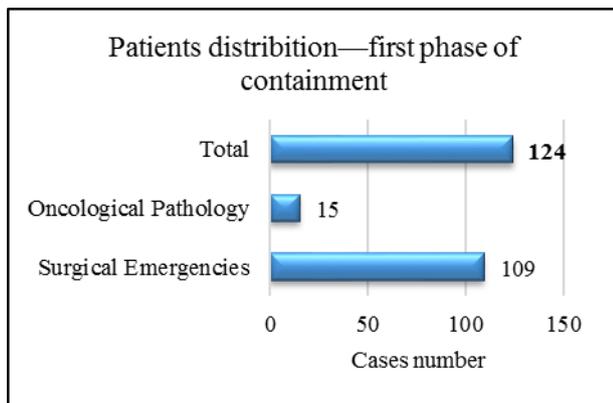
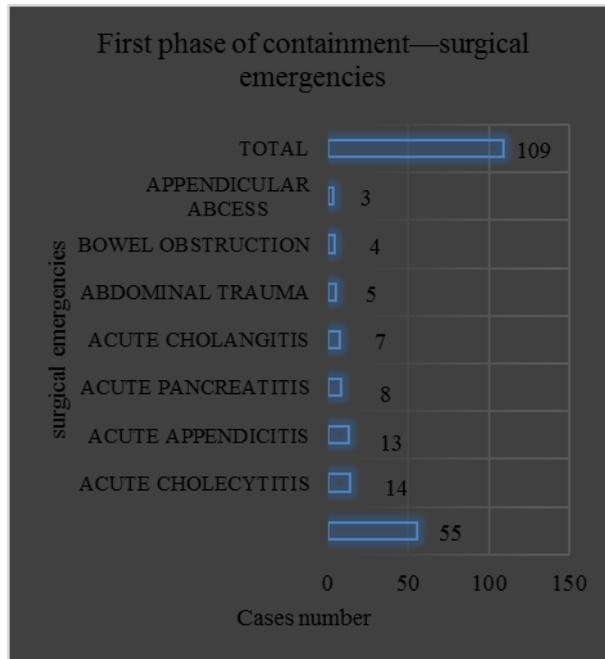


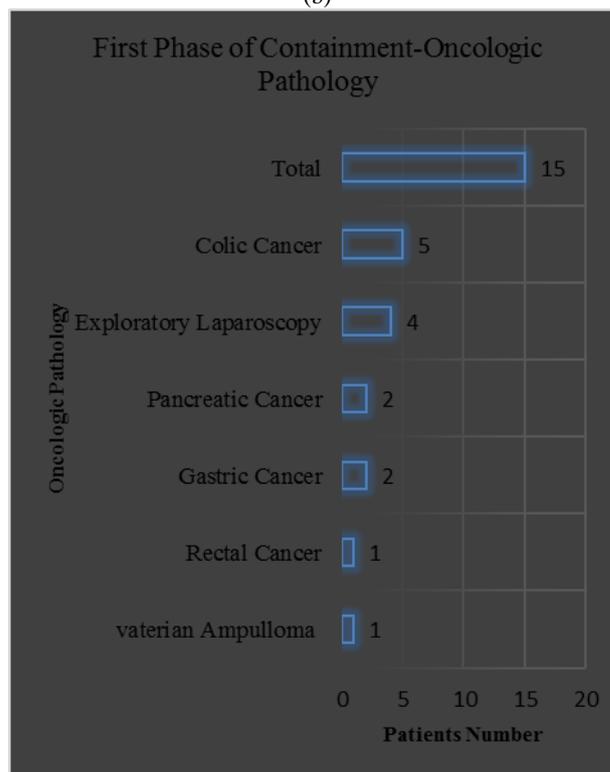
Fig. 1 Distribution of patient according to phase.



(a)



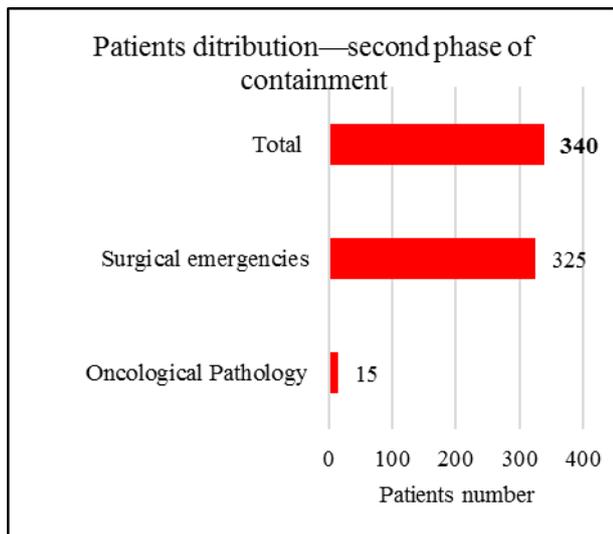
(b)



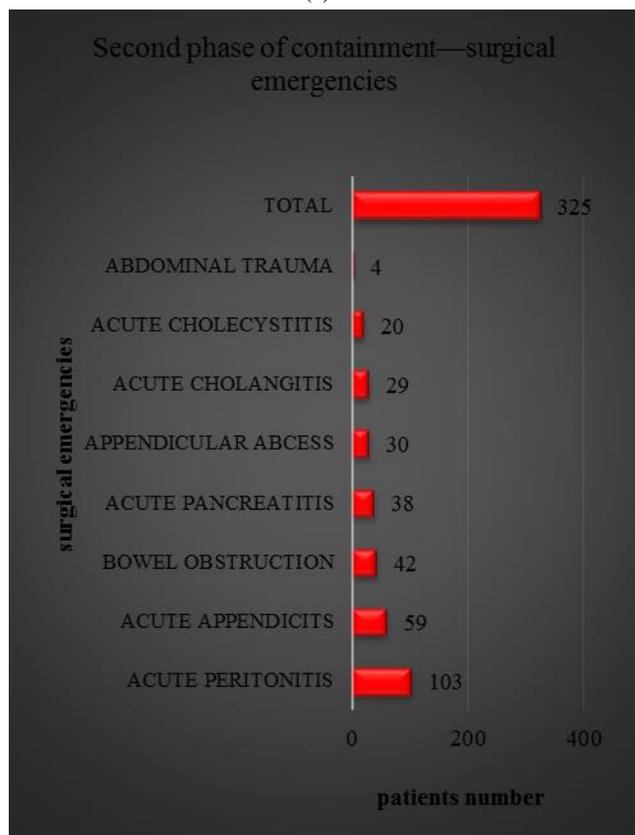
(c)

Fig. 2 (a) First phase of containment—patients distribution, (b) surgical emergencies, (c) oncologic Surgery.

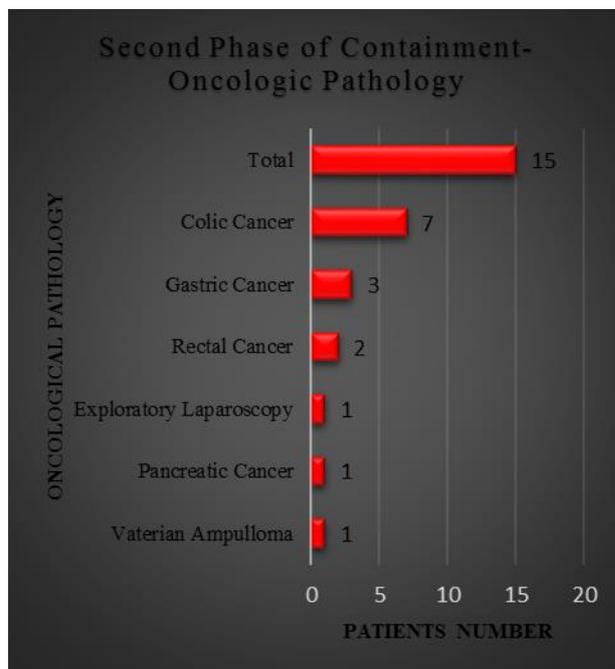
direction and the ministry of health engagement. The hospital Organisation aimed to provide two Covid & non Covid Circuits within the different departments for any suspect patient. We detail the results below of each period, animated by intraoperative images of some cases (Pictures 1-9).



(a)



(b)

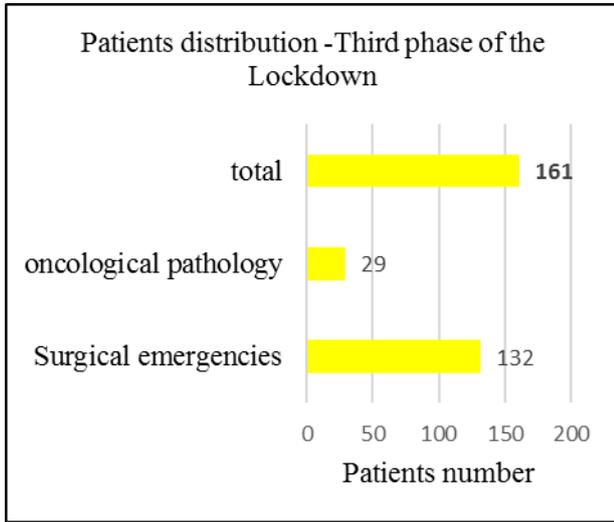


(c)

Fig. 3 (a) Second phase—patient distribution, (b) surgical emergencies, (c) oncologic surgery.

The Lockdown was burdened with difficulties reside in the delay in care (interregional separation, travel restriction, transport means, financial lack mean, fear of hospitals). The ministry of health strategy was the management of emergencies and cancers. The result was that patients presented to emergencies with late stages (complications) of their diseases: occlusion, peritonitis, cholangitis, hemorrhagic shock, anemic syndrome or metastatic cancer, and pancreatitis. The key of our conduct success was inter-specialty coordination (Resuscitation, Gastro-enterology, Radiology, Oncology, Anatomopathology etc.). The recommendation: Emergency Department, Surgical Unit 24 hours a day to expand the possibility of hospitalization 7 days a week; The technical staff, platform, administration available, protected staff, protected patients (any patient is considered Covid positive); Laparoscopic surgery (cholecystectomy, appendectomy, exploration laparoscopy): strict rules to avoid exposing professionals to an increased risk of contamination (tightness of the

pneumoperitoneum insufflation system from the start to the end of the procedure);



(a)

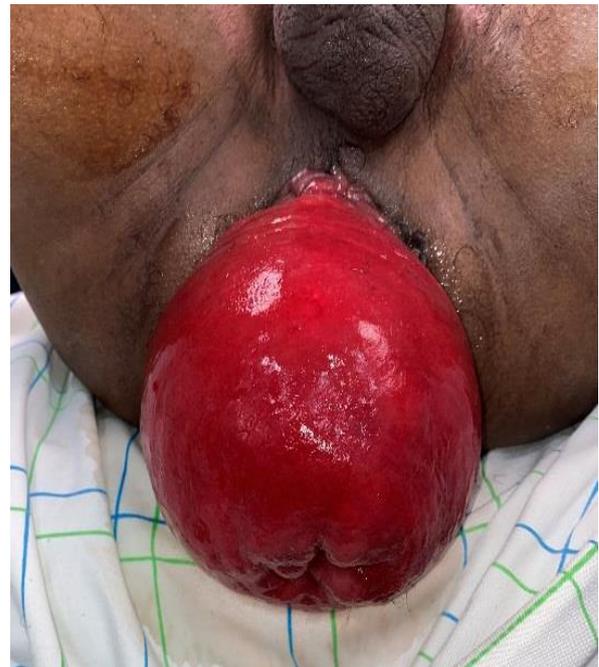
Surgical emergencies	Cases number
Acute Peritonitis	32
Acute Pancreatitis	25
Bowel Obstruction	17
Acute Appendicitis	15
Acute Cholecystitis	13
Strangulated Hernia	11
Appendicular Abscess	9
Gastric Outlet Obstruction (Pyloric Obstruction)	3
Abdominal Trauma	3
Liver Abscess	2
Megaesophagus(Achalasia)	1
Strangulated Rectal Prolapse	1
Total	132

(b)

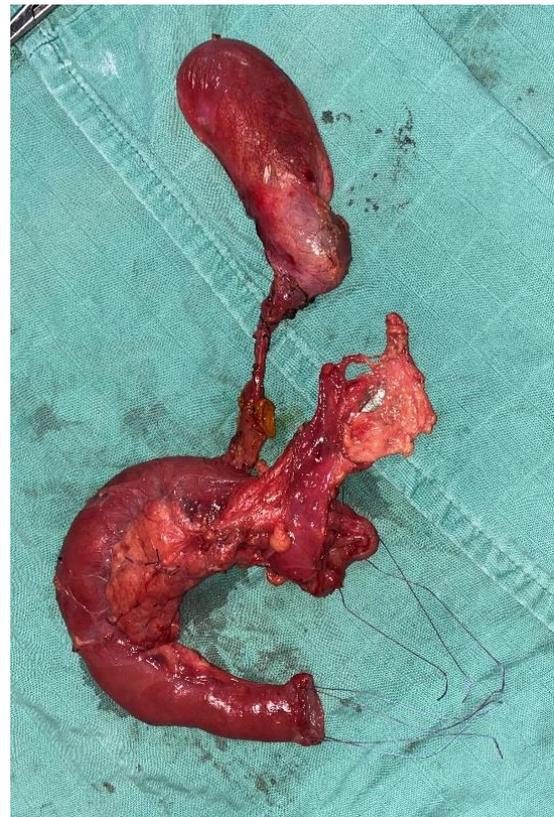
Oncologic pathology	Cases number
Colic Cancer	11
Gastric Cancer	4
Pancreatic Cancer	4
Small bowel Tumor	3
Rectal Cancer	2
Duodenal Carcinoma	1
Vater's Ampulloma	1
Abdominal Mass	1
Esophageal Cancer	1
Spleen Tumor	1
Total	29

(c)

Fig. 4 Third phase—patients distribution, (b) surgery emergencies, (c) oncologic surgery.



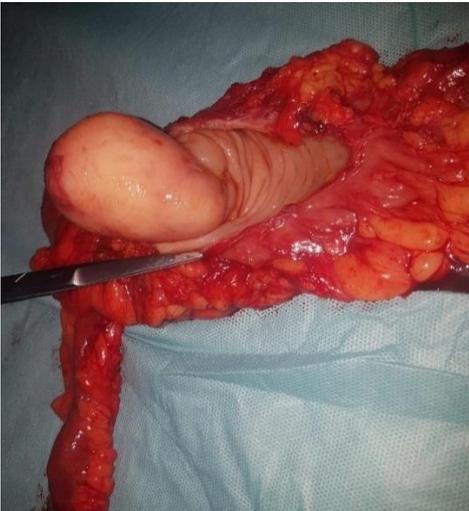
Picture 1 Strangulated Rectal prolapse (Perineal approach: Delorme procedure)



Picture 2 Cephalic Duodenopancreatectomy CPD (vater's ampulloma).



Picture 3 Enterotomy-lithiasis extraction(gallstone ileus).



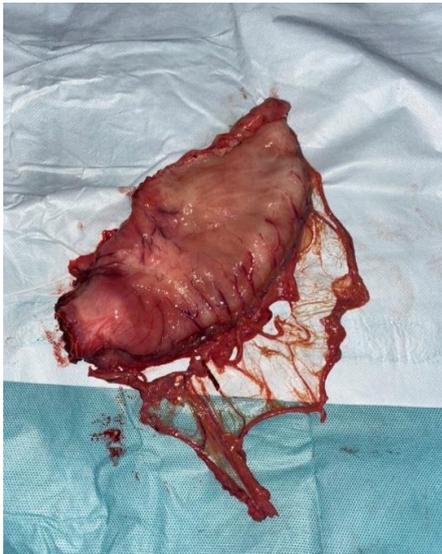
Picture 6 Right hemicolectomy (colic lipoma) [1].



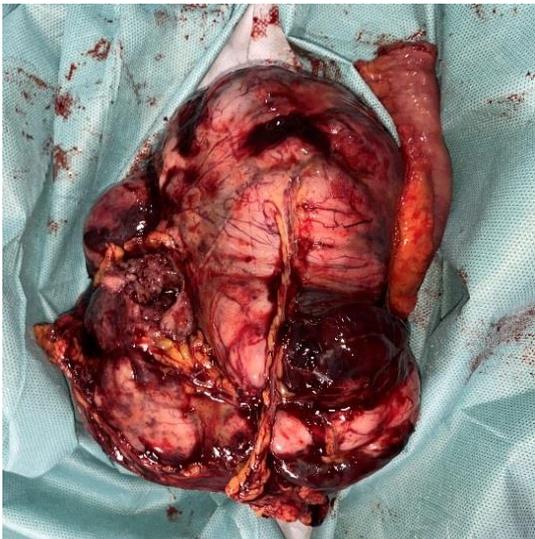
Picture 4 Total gastrectomy (gastric fundus carcinoma).



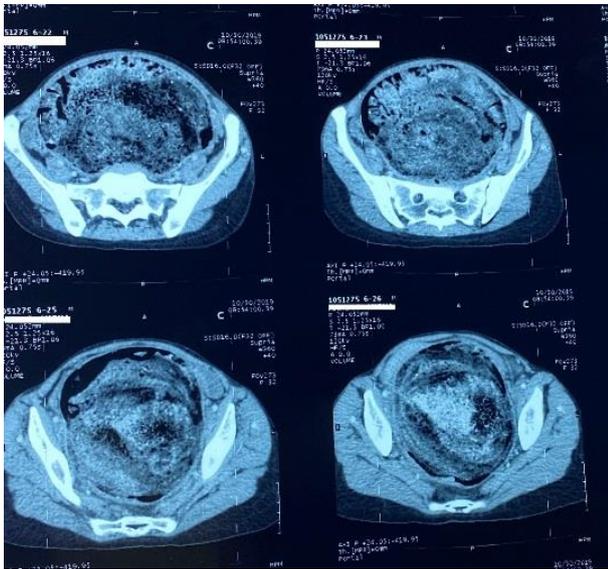
Picture 7 Enucleation of a pancreatic's cystic tumor.



Picture 5 Distal subtotal gastrectomy for antral carcinoma.



Picture 8 Segmental duodenectomy (duodenal adenocarcinoma § sever anemia).



Picture 9 Giant fecaloma (hirschprung disease).

Multi-daily disinfection of the entire hospital (departments, emergencies, surgical units, resuscitation); Restricted visit for one hour (one accompanying person per patient); Communication by telephone with the family of patients who have difficulty moving around so that they are informed of the state of health of their relatives; Restricted control (D10 postoperative).

In addition to the usual emergency surgery management (surgical or conservative treatment of abdominal trauma, laparoscopic or conventional appendectomy; laparoscopic or conventional cholecystectomy; Biliary decompression and drainage by Kehr or biliodigestive anastomosis; Colectomy; discharge colostomy, debridement etc... Despite the difficulties encountered during this pandemic, with a good commitment, coordination and multidisciplinary collaboration we have been able to achieve successful oncological surgeries (Curative segmental colonic resection, Cephalic pancreatoduodenectomy CPD; Gastrectomy, Exploratory laparoscopy/laparotomy, Anterior rectal resection one case of abdomino perineal resection, Small Bowel Resection, Splenectomy duodenal resection in one case, Heller Myotomy and fundoplicature on achalasia dysphagia, Delmore perineal procedure of strangulated rectal

prolapse, total colectomy for colitis etc...). Postoperative hospitalization in the intensive care unit has been dedicated for all surgeries that require and oncological surgery with an average duration of 78 hours. The Mortality rate was 0,8% [4 cases of sepsis with neglected peritonitis (3 cases) and Occlusion (One case)].

4. Discussion

The Covid-19 pandemic is changing the organization of healthcare and has a direct impact on digestive surgery; health disorders that cannot be deferred for longer than one month must also be dealt with, if possible, by laparoscopy to minimize postoperative impact on respiratory function. In all cases, patients must be considered as possibly infected, and so cross-infection must be prevented [2].

It is recommended not to carry out elective surgery for benign disorders, because such surgery can be performed without jeopardizing the result once the epidemic has subsided. It is important to inform patients and their families of the medical reasons for deferring surgery, namely collective welfare (freeing both ordinary and recovery and resuscitation hospital beds, relieving the HCPs) and individual precaution (preventing a more serious respiratory infection after surgery). It is also useful to inform patients that the intervention they need will probably be deferred until well after the epidemic has abated, because there will be many other patients awaiting treatment, whose numbers will depend on how long the epidemic lasts. Collateral effects of the epidemic and confinement; owing to prolonged confinement, some patients are presenting late to emergency services ("so as not to take up their time) [3]. In this way, an initially uncomplicated case of appendicitis can turn into localized appendicular peritonitis. Some patients with COVID-19 also complain of gastro-intestinal symptoms such as diarrhea, vomiting and abdominal pain [4]. Patients have accordingly presented to emergency services with digestive symptoms, been

sent on for COVID-19 testing, found to be uninfected, and only then been referred for surgery, after several hours delay. There are several recommendations to defer non-urgent surgery (acute appendicitis non-complicated with antibiotics [5] as well as acute cholecystitis non-complicated [6]) and oncological surgery depending on tumor stages, such as and first-line surgery for an occlusive colonic tumour, stenting or defer surgery. The simplest solution would be to transfer the patients to hospitals (public or private) that are not under pressure from COVID-19. It might be judicious to have separate COVID-19 and non-COVID-19 medical teams. It would also be appropriate to deliver a clear message to the general public that urgent surgery will not be neglected, and that confinement will not impede emergency consultations. It is essential that we do not degrade the quality of our surgical practice because of the COVID-19 emergency. Urgent surgery is still urgent and demands diligent care. If provided in safe conditions, such surgery can be performed in an out-patient care or enhanced recovery programme. If no operating room or post-operative recovery room is available, non-surgical treatment must be considered only in cases where it is justified by strong evidences [7].

5. Conclusion

"IT TAKES MANY TO SAVE ONE": The gold key of our care success is the coordination and the

organization into a COVID Hospital and not Covid Hospital and Covid 19 Circuits. There is probably an added risk due to the pandemic; Not only the COVID 19 caused death but we must also work hard to treat other pathologies which can be fatal.

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