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Article type : Correspondence

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**COVID-19 health crisis: less colorectal resections and yet no more peritonitis or bowel obstruction as a collateral effect?**

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**Words count:** 490 words

This article has been accepted for publication and undergone full peer review but has not been through the copyediting, typesetting, pagination and proofreading process, which may lead to differences between this version and the [Version of Record](#). Please cite this article as [doi: 10.1111/codi.15199](https://doi.org/10.1111/codi.15199)

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**Conflict of interest:** None

**Funding:** None

Dear Editor,

Because of the rapid worldwide propagation of COVID-19 (coronavirus disease 2019), each health care system had to urgently adapt with all efforts aimed to maximize the capacity of treatment for infected patients. With this in mind, the President of the French Republic declared on March 12, 2020: “Non-essential hospital care will be postponed, i.e. surgical procedures that are not urgent.” But, in spite of the effort deployed by each hospital to provide a sufficient capacity of treatment for patients requiring a surgical procedure as an emergency, we have observed that the management of these patients have been largely affected, not because of a lack of resources but because of a surprising lack of patients. Consequently we analyzed the surgical activity from 12/03/2020 to 29/04/2020 in 16 adult gastrointestinal surgery departments within 14 French public university hospitals located in Paris or its close suburbs. The first day of this period corresponded to the date of the President's request to postpone planned surgery. The surgical procedures performed during this period were compared to those performed in 2019 over the equivalent period (14/03/2019-01/05/2019) and in the same surgical departments.

In 2019, 4,678 surgical procedures were carried out vs. 1,847 procedures in 2020 indicating an overall reduction of 61%. Planned surgical activity was reduced, as expected, from 3,013 procedures to 987 procedures (67%) with a diminution of 53% for the planned colorectal surgery (**table 1**). A major reduction was observed for procedures involving restoration of bowel integrity (61%). More surprisingly, emergency surgical procedures decreased by 48% (1,665 procedures vs. 860). Major surgical emergencies such as those patients presenting with peritonitis/intra-abdominal abscess or bowel obstruction, ischemia or perforation also showed an unexpected decline from 56% to 46%.

The observed 61% reduction in scheduled surgery is very close to recent worldwide estimations predicting a 72% decrease in planned surgery which represents 28,404,603 operations. [1] But in parallel with this expected finding, emergency surgery was globally reduced by half during the COVID-19 health crisis in 14 French university hospitals. There are several possible causes which might explain this observation, for example the transfer of surgical emergencies to other care centers in particular to the private system, a decrease in road accidents resulting in fewer polytrauma patients requiring surgery or the adoption of non-surgical treatments of some surgical emergencies such as antibiotic therapy alone to treat uncomplicated acute appendicitis. [2] All these possible causes are, *a priori*, of no consequences for the patients but the observed decrease of surgical emergencies does not seem to be fully explained by these causes and it is highly

probable that the fear of patients to enter hospital has played a role.[3] This observation, which has also been reported in other serious emergencies, such as myocardial infarction [4] or stroke[5], will have to be considered in the event of a future health crisis in order to prevent avoidable mortality. The impact of the crisis for colorectal cancer prognosis is still unknown and further studies with longer follow-up are mandatory.

### **Acknowledgements**

- Sophie Kerambellec and Mélodie Bernaux from the Transformation Management Direction, Assistance Publique-Hôpitaux de Paris (AP-HP).

### **Collaborators of the APHP / Universities / Inserm COVID-19 research collaboration:**

- Pr Frédérique Peschaux, Hôpital Ambroise Paré, AP-HP
- Pr Philippe Wind, Hôpital Avicenne, AP-HP
- Pr Christophe Tresallet, Hôpital Avicenne, AP-HP
- Pr Olivier Soubrane, Hôpital Beaujon, AP-HP
- Pr Yves Panis, Hôpital Beaujon, AP-HP
- Pr Ibrahim Dagher, Hôpital Antoine Béchère, AP-HP
- Pr Christophe Penna, Hôpital Bicêtre, AP-HP
- Pr Simon Msika, Hôpital Bichat, AP-HP
- Pr Bertrand Dousset, Hôpital Cochin, AP-HP
- Pr Marc Pocard, Hôpital Lariboisière, AP-HP
- Pr Frédéric Breagnol, Hôpital Louis Mourier, AP-HP
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- Pr René Adam, Hôpital Paul Brousse, AP-HP
- Pr Jean-Christophe Vaillant, Hôpital Pitié-Salpêtrière, AP-HP
- Pr Fabrice Ménégaux, Hôpital Pitié-Salpêtrière, AP-HP
- Pr Yann Parc, Hôpital Saint-Antoine, AP-HP
- Pr Pierre Cattan, Hôpital Saint-Louis, AP-HP

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**Table 1.** Variation in the number of the major planned and emergency surgical procedures between 2019 and 2020 periods.

<b>Subgroup of surgery</b>	<b>2019 period (Number of procedures)</b>	<b>2020 period (Number of procedures)</b>	<b>Percentage variation</b>
<i>Major planned procedures</i>			
Colorectal surgery	681	322	<b>-53%</b>
<i>Segmental colectomy</i>	183	117	<b>-36%</b>
<i>Low anterior rectal resection</i>	78	56	<b>-28%</b>
<i>Total colectomy or coloproctectomy</i>	14	15	<b>+7%</b>
<i>Colostomy/ileostomy closure, reversal of     Hartmann's procedure</i>	160	63	<b>-61%</b>
<i>Proctology</i>	170	28	<b>-84%</b>
<i>Others</i>	76	43	<b>-43%</b>
Parietal surgery	567	44	<b>-92%</b>
Hepato-bilio-pancreatic surgery (cholecystectomy excluded)	271	164	<b>-39%</b>
Bariatric surgery	199	8	<b>-96%</b>
Oesogastric surgery excluding bariatric surgery	110	53	<b>-52%</b>
<i>Common emergencies procedures</i>			
Appendectomy on emergency	335	163	<b>-51%</b>
Proctology	226	64	<b>-72%</b>
Cholecystectomy on emergency	159	82	<b>-48%</b>
Peritonitis or intra-abdominal abscess	149	65	<b>-56%</b>
Small or large bowel surgery	114	61	<b>-46%</b>
Parietal surgery	93	45	<b>-52%</b>
Liver transplantation	54	39	<b>-28%</b>
Cutaneous or subcutaneous abscess	75	32	<b>-57%</b>

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