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## CORRESPONDENCE

## Re: "Strategy for the practice of digestive and oncologic surgery in COVID-19 epidemic situation". As regards the detection of coronavirus in peritoneal fluid



The SARS-CoV-2 pandemic has been responsible for numerous cases of contamination within medical staff. The most exposed specialties are supposedly those involving close contact with infected patients, and in a majority of cases, transmission has reportedly occurred via the respiratory tract. That said, the presence of the coronavirus in peritoneal fluid, which would induce a risk of contamination in digestive surgery, is currently under debate. Given the risk of contamination by aerosolisation, Tuech et al. have recommended that in case of doubt or insufficient experience in laparoscopic surgery, an approach by laparotomy is to be favoured [1]. It bears mentioning that application of a laparoscopic technique is premised on the avoidance by all means (suction system, balloon trocar) of pneumoperitoneal leakage in the operating theatre. If laparoscopy cannot be performed under optimal safety conditions, postponement of surgery (rather than application of the laparotomic approach) can be considered as an option for pathologies, such as uncomplicated acute appendicitis, acute cholecystitis or hernia surgery.

As regards the presence of the coronavirus in peritoneal fluid, the literature provides some answers and perspectives. Ngaserin et al. reported the case of a 21-year-old male patient with a COVID-19 infection (positive nasopharyngeal PCR) having undergone laparoscopic appendectomy [2]. PCR of the perioperatively extracted peritoneal fluid was negative. On the contrary, two other publications have found SARS-CoV-2 to be detectable in peritoneal liquid. Coccolini et al. reported on the case of a 78-year-old male patient having tested positive for SARS-CoV-2 with respiratory nasal swab and who was operated by laparotomy for intestinal occlusion due to a small bowel volvulus [3]. In this case, peritoneal fluid was positive for SARS-CoV-2, with a viral load 10 times greater than the viral load found in the nasal swabs. However, the validity of this result may be contestable insofar as the virus was found in the patient's stools even though, as the authors point out, there was no digestive contamination. The 3rd case reported in the literature is that of a 73-year-old female patient with a COVID-19 infection (positive nasal swab and serology), who underwent surgery for a strangled hernia with incarcerated and necrotic but non-perforated jejunal loops [4]. Peritoneal fluid sampling was likewise positive for COVID-19. However, necrosis of the

strangled jejunal loops raises the question of translocation and biases the positivity of the positive result.

We are reporting here on the case of a 47-year-old male patient, with history of metastatic pleural pulmonary adenocarcinoma (3rd-line chemotherapy) and CHILD B7 cirrhosis; he also presented with COVID-19 infection, which was confirmed by nasopharyngeal PCR. Fifteen days later, he was hospitalised due to a clinical picture of intense abdominal pain with generalised contracture, but without marked inflammatory syndrome. CT-scan revealed an aspect of perforated appendicitis with a pneumoperitoneum bubble in the place of the appendix, and intraperitoneal effusion. However, laparoscopic exploration revealed nothing other than clear intraperitoneal effusion...and a healthy appendix; no additional abnormality could account for the peculiar clinical picture. A month after the operation, the patient died of respiratory distress. Three weeks after the nasopharyngeal swab, PCR testing for COVID-19 at the site of intraperitoneal effusion yielded negative results.

These different data raise a number of questions, the first of which concerns the kinetics of SARS-CoV-2 elimination in various organs. Does a negative nasopharyngeal swab signify that the virus is not detectable in peritoneal fluid? Should a positive swab lead to renunciation of treatment by laparoscopic approach? Our patient's case seems to imply that three weeks after respiratory infection linked to the new coronavirus, the latter was no longer detectable in peritoneal fluid. At a time when tests are being carried out on a massive scale, nasopharyngeal swab could be proposed as a matter of priority to all patients slated to undergo surgery. In that case, positive results should impose renunciation of all deferrable surgery. Another test could be carried out three weeks later; in the event of negative results, a satisfactorily safe laparoscopic procedure would appear possible. In the event of an illness requiring emergency treatment (delay would be limited to 12 hours), testing could take place. A positive result could impose renunciation of surgery and choice of an alternative treatment or, if possible, therapeutic abstention, which would be thinkable in cases of uncomplicated appendicitis, acute cholecystitis or manual reduction of an abdominal hernia. In the final analysis, only patients presenting with a non-deferrable emergency should be operated without having undergone testing. Only if surgery is unavoidable (perforated ulcer, appendicular peritonitis...) should it be laparoscopic, and it shall have to be undertaken with the abundance of precautions cited by Tuech et al.

Constitution of a prospective nationwide cohort, in which sampling of peritoneal fluid would be carried out systematically and (if possible) confronted with the results of

preoperative nasopharyngeal PCR, could pave the way to a clear response to the question at hand and to the designing of a treatment algorithm.

#### Disclosure of interest

The authors declare that they have no competing interest.

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