

Comment on: "Safe management of surgical smoke in the age of COVID-19"

Editor

I read with great interest the paper by Mowbray and colleagues on safe management of surgical smoke in the age of COVID-19¹. The authors found that a theoretical risk of virus transmission via surgical smoke exists, albeit not enough evidence is available to quantify it. The author would like to contribute to this discussion by highlighting two important points.


First, an important factor to be considered in the evaluation of the risk of COVID-19 transmission through surgical smoke during laparoscopy is the whether or not the Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2) is actually present in the smoke or peritoneal fluid/ abdominal tissues. Currently, there exists no evidence of the presence of SARS-CoV-2 in surgical smoke in literature. Further, there is conflicting information regarding the presence of the virus in peritoneal fluid/abdominal tissues. Whereas some studies have successfully detected SARS-CoV-2 ribonucleic acid (RNA) and other viral proteins in peritoneal fluid², peritoneal dialysate³, ascitic fluid⁴, and bowel wall⁵, others have reported negative findings^{6,7}. It is noteworthy that these observations are based on case reports and case series. As such, there is an urgent need for high-quality studies that are adequately powered to address this controversy. One such study (The LAP-TRANSCOV study; ClinicalTrials.gov Identifier: NCT04361396) is currently


ongoing⁸, and may shed more light on this issue.

Second, the determination of the presence or absence of SARS-CoV-2 in peritoneal fluid/abdominal tissues in the abovementioned reports was based on the detection of viral RNA using reverse transcriptase-polymerase chain reaction (RT-PCR) tests. It however is known that this test cannot distinguish between infectious and non-infectious viruses⁹. Thus, detection of SARS-CoV-2 RNA in the peritoneal fluid/ abdominal tissues may not necessarily imply the potential for viral infectivity and transmission. More convincing evidence of potential infectivity may be obtained through culture and isolation of the live SARS-CoV-2 virus.

Funding

The author(s) received no financial support for the research, authorship, and/ or publication of this article.

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DOI: 10.1002/bjs.11876

- 1 Mowbray NG, Ansell J, Horwood J, Cornish J, Rizkallah P, Parker A *et al*. Safe management of surgical smoke in the age of COVID-19. *Br J Surg* 2020; <https://doi.org/10.1002/bjs.11679> [Epub ahead of print].
- 2 Coccolini F, Tartaglia D, Puglisi A, Giordano C, Pistello M, Lodato M *et al*. SARS-CoV-2 is present in peritoneal fluid in COVID-19 patients.

<https://journals.lww.com/annalsofsurgery/Documents/SARS-CoV-2%20is%20present%20in%20peritoneal%20fluid%20in%20COVID-19%20patients.pdf>.

- 3 Gisella V, Giuseppe G. SARS-CoV2 in the peritoneal waste in a patient treated with peritoneal dialysis. *Kidney Int* 2020; **98**: 237–238.
- 4 Culver A, Arbelot C, Bechis C, Cassir N, Leone M. First description of SARS-CoV-2 in ascites. *IDCases* 2020; <https://doi.org/10.1016/j.idcr.2020.e00836> [Epub ahead of print].
- 5 Xiao F, Tang M, Zheng X, Liu Y, Li X, Shan H. Evidence for gastrointestinal infection of SARS-CoV-2. *Gastroenterology* 2020; **158**: 1831–1833.
- 6 Ngaserin SH, Koh FH, Ong BC, Chew MH. COVID-19 not detected in peritoneal fluid: a case of laparoscopic appendectomy for acute appendicitis in a COVID-19-infected patient. *Langenbeck's Archives of Surgery* 2020; <https://doi.org/10.1007/s00423-020-01891-2> [Epub ahead of print].
- 7 Safari S, Keyvani H, Alamdari NM, Dehghanian A, Hashemi MR, Honar BN, Aminian A. Abdominal Surgery in Patients with COVID-19: Detection of SARS-CoV-2 in Abdominal and Adipose Tissues. *Ann Surg* 2020; <https://doi.org/10.1097/sla.0000000000004165> [Epub ahead of print].
- 8 ClinicalTrials.gov Assessment of the Presence of the SARS-COV-2 Virus in the Peritoneum of COVID-19 Patients (LAPTRANSCOV). <https://clinicaltrials.gov/ct2/show/NCT04361396>
- 9 Atkinson B, Petersen E. SARS-CoV-2 shedding and infectivity. *The Lancet* 2020; **395**: 1339–1340.