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Is the use of laparoscopy in a COVID-19 epidemic free of risk?

Editor

Among the problems raised by the COVID-19 pandemic, there is the increased risk of exposure of healthcare workers to the virus¹.

The choice between laparotomy or laparoscopy is subject to debate among surgeons. The Society of American Gastrointestinal and Endoscopic Surgeons (SAGES)² mentions the possibility of viral contamination during laparoscopy via possible release of virus in the form of an aerosol with CO₂.

With current knowledge, the virus has been identified in respiratory tract samples, in faeces, blood, serum, saliva and lymph, as detailed in the seventh update of the European Centre for Disease Prevention and Control³.

Studies have suggested that SARS-CoV-2 can be transmitted through the air via aerosols formed during medical procedures. A chimney effect can cause a jet of air to be blown through the trocars. Consequently, operating theatre staff can be exposed to a high concentration of cells, burns, infectious particles and, in particular, virus⁴.

Common routes of transmission for new coronaviruses include direct

transmission (coughing, sneezing and inhalation of droplets) and contact transmission (contact with oral, nasal and ocular mucous membranes)⁵.

Risk of transmission of COVID-19 during laparoscopy remains theoretical but cannot be excluded completely, with regards to oral, nasal and ocular exposure.

Laparoscopy has the advantage of reducing the negative impact of surgery on respiratory function. However, as mentioned above, aerosol released into the operating theatre during or at the end of the intervention can contaminate healthcare workers. If the laparoscopic approach is indicated, it is recommended: to check all instruments and the proper functioning of the suction system, which must be used systematically; to use balloon trocars and create suitable holes for the introduction of leak-free trocars; not to create a leak in the presence of smoke obstructing the surgical field, but to extract this smoke using the vacuum suction device; and to aspirate the entire pneumoperitoneum before making an auxiliary incision and at the end of the procedure before removing the trocars.

Laparoscopy should be proposed by an experienced surgeon. In case of doubt or lack of experience in laparoscopy, a laparotomy should be favoured.

At this time, risk of viral contamination of the pneumoperitoneum is not validated. In line with SAGES recommendations², we could state that there is a theoretical risk that should be weighed against the benefit of laparoscopy. It seems important to remind surgeons of the safety measures they must apply during laparoscopy.

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- 2 Pryor A. *SAGES and EAES recommendations regarding surgical response to COVID-19 crisis*; 2020. <https://www.sages.org/recommendations-surgical-response-covid-19/> [accessed 23 April 2020].
- 3 European Centre for prevention and Disease Control (ECDC). *Rapid risk assessment: Outbreak of novel coronavirus disease 2019 (COVID-19): increased transmission globally – fifth update 2020* [Available from: 10.1200/EDBK_200141. Accessed 24 April 2020].
- 4 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].
- 5 Lu CW, Liu XF, Jia ZF. 2019-nCoV transmission through the ocular surface must not be ignored. *Lancet* 2020; **395**: e39.