

# COVID-19 aerosolisation during laparoscopic surgery

## Risks and recommendations for clinicians

In recent weeks, concerns have been raised regarding the use of laparoscopic surgery during the COVID-19 crisis.

This increased risk of aerosolisation and concerns that full personal protective equipment (PPE) may not always be available have heightened concerns about the safety of laparoscopic surgery given its nature as an aerosol generating procedure (AGP).

As a result, the Royal College of Surgeons and the Society of American Gastrointestinal and Endoscopic Surgeons (SAGES) have both released statements cautioning against laparoscopic procedures at this time. However, there is currently no data demonstrating an aerosol presence of the COVID-19 virus being released during laparoscopic abdominal surgery. This has now also been acknowledged in the latest modified advice from SAGES.

In assessing the risk of laparoscopic procedures, the benefits of this approach to the patient must also be weighed, including a shorter hospital length of stay with laparoscopic procedures over open procedures. Additionally, the skill set of the surgeon must be considered. For example some surgeons may have little experience in open procedures such as for cholecystectomy. Additionally, it is important not to delay emergency surgery which is clearly required.

The following screening questions should be asked of all patients prior to surgery:

1. Whether they have a past history of COVID-19 testing or illness (now recovered)
2. Whether patients has self-isolated for two weeks prior to their semi-elective surgery
3. Have they travelled in the past 14 days
4. Have they had contact with a known COVID-19 positive case in the past 14 days
5. Whether they have current symptoms consistent with COVID-19

## Recommendations

1. Where possible, consider whether non-operative treatment may be suitable for a particular patient. Examples would be antibiotics or percutaneous cholecystostomy for acute cholecystitis, antibiotic management for appendicitis where it may be appropriate.
2. An open procedure may be considered, where this does not disadvantage the patient, compared to a laparoscopic approach.
3. Where there is a clear need for a patient to undergo urgent surgery via a laparoscopic approach, care needs to be taken not to vent the intra-abdominal gas. A smoke evacuator and filters should be used to create a closed circuit. At the completion of the procedure, intra-abdominal gas should be removed via the smoke evacuator prior to specimen retrieval and closing.
4. Port removal should occur after all gas and smoke has been evacuated and the use of a surgical drape under which the port is removed should be considered.
5. Confirmed positive COVID-19 patients who must urgently undergo a laparoscopic surgical intervention+ should have the procedure performed by a consultant surgeon.
6. All staff in the operating theatre should use standard precautions and additional PPE appropriate for AGPs (i.e. Contact, Droplet and Airborne precautions) as per CEC current guidelines. This includes eye protection.
7. All AGPs should be carried out in either negative pressure rooms or neutral pressure rooms with the doors closed.
8. Only essential staff are to be in the operating theatre.
9. Staff outside of the specific operating room should continue to use routine risk assessed PPE (e.g. surgical masks).
10. Appropriate cleaning of the operating theatre should be carried out following completion of cases for Covid-19 positive or suspected positive patients.
11. As the evidence base is evolving, decisions regarding individual patients will be the responsibility of the treating surgeon.

**At present there is insufficient evidence to recommend a 'blanket ban' on all laparoscopic procedures.**

## References

[Detecting hepatitis B virus in surgical smoke emitted during laparoscopic surgery](#)

[Surgical smoke and infection control](#)

[Contamination resulting from aerosolized fluid during laparoscopic surgery](#)

[Several suggestion of operation for colorectal cancer under the outbreak of Corona Virus Disease 19 in China](#)

[COVID-19 Pandemic: perspectives on an unfolding crisis](#)

[Minimally invasive surgery and the novel coronavirus outbreak: lessons learned in China and Italy](#)

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