

## **Recommendation on the Role of Laparoscopy in Urgent COVID-19 Patients**

### **INTRODUCTION**

The Society of American Gastrointestinal and Endoscopic Surgeons (SAGES) recently released a statement questioning the safety of laparoscopy in COVID-19 patients resulting in some hospitals eliminating laparoscopic approaches in all patients. Since that time, CAGS, ACS, CanSAGE and AAGL have released their own position statements on this subject. No organization has recommended eliminating laparoscopy.

The Peter Lougheed Centre MIS group from General Surgery and Gynecology, in collaboration with surgical leaders, decided to evaluate this topic critically. A thorough review of the literature and the statements from the above societies was undertaken. Much of the literature focuses on transmission of other viruses including Hepatitis B, HIV, and HPV during aerosol generating procedures (AGPs) or particles found in surgical smoke. There is very little information specific to SARS-Coronavirus-2, and the data is at times questionable in clinical relevance. According to the provided product information, the smoke filtration systems available in Calgary are at least as effective as the N95 respirators in eliminating aerosolized material.

Currently, there is no concrete evidence that there is risk of COVID-19 virus transmission through laparoscopic surgery, and studies examining viral load in different human tissues suggest there is unlikely to be significant virus within blood or serum. Appropriate steps can be taken to limit even theoretical exposures, protect our staff, and provide optimal care. Splatter, surgical smoke, and inadvertent contamination are also very likely to occur during an open (laparotomy) procedure. The negative impact to the patient with regards to increased analgesia use, longer length of stay, and potential increased difficulty in extubation should be considered. Therefore, the following practical approach is proposed:

### **GENERAL GUIDELINES**

- 1) All suspected and confirmed COVID-19 cases should follow the AHS and site-specific COVID-19 OR guidelines.
- 2) Only urgent cases will proceed to surgical intervention. Expectant management, antibiotics, and interventional radiology should be considered prior to surgery as indicated clinically.
- 3) Liberal use of assistance from colleagues and laparoscopic specialists, especially for obese patients, can mitigate intraoperative difficulties. Consideration should be given to balancing additional exposure of healthcare staff with the benefits of a shorter case.
- 4) Only essential staff should be present in the OR and should wear appropriate PPE, including an N95 respirator. Members of the team may choose to use a regular

surgical mask (with ties) if the risk of an unanticipated AGMP is low. All members of the operative team should be familiar with proper donning/doffing procedures.

- 5) During surgical time out, the operative team leader should outline precisely the required equipment and review the flow of procedure to minimize traffic in and out of the room.

## **INTRAOPERATIVE GUIDELINES**

- 1) When using the open Hasson technique, caution should be exercised to obtain a tight seal and avoid ongoing air leak. Pneumoperitoneum creation through a Veress needle +/- optical viewing trocar can be considered as an alternative especially in obese patients. Maintain the lowest intra-abdominal pressure necessary to safely complete the procedure and avoid steep Trendelenberg if possible.
- 2) Disposable cuffed/balloon ports or threaded ports can be considered adjuncts to prevent inadvertent leak of pneumoperitoneum and potential particulate matter during the surgery.
- 3) Ensure side valves are in the closed position during insertion. The same when gas tubing is attached or exchanged.
- 4) Smoke evacuators with appropriate filters should be used to evacuate smoke during the procedure. Prior to the removal of trocars or specimen extraction, complete desufflation of the abdomen should be undertaken by activating the smoke evacuation generator. If the passive evacuator is used, gentle pressure on the abdomen can be applied until complete evacuation of smoke under direct vision. A straight suction device should not be used for CO<sub>2</sub> evacuation as this eventually vents to the room and does not have a filtration system.
- 5) Use of electrocautery and ultrasonic devices should be kept to a minimum. Consideration ought to be given to endoloops/clips or staples (e.g. appendectomy, salpingectomy) to avoid diathermy when possible.
- 6) When using a 5mm camera through a 5mm port, the smoke evacuator should be connected to a different port.

Based on the available evidence and with the above safeguards in place, a laparoscopic approach, when feasible, is still a safe and patient-centered option for patients with COVID-19. Ultimately, no guidelines can replace a surgeon's clinical judgement based on the needs of each unique individual patient. These recommendations will be adjusted as new evidence becomes available.

*Note: This guideline is modified from that developed by the Division of General Surgery at the Peter Lougheed Center.*