



IAGES COVID SURGERY RECOMMENDATIONS

11 04 2020

These recommendations are for surgeons in practice, based on the published literature as of 10th April 2020. You are requested to exercise caution in following these directives as you are aware of dynamic updates which are happening by the minute across the world. IAGES urges you to custom make your approach with the resources at your place, without compromising safety of your team and patients.

General:

- **All elective surgical and endoscopic cases should be postponed at the current time.**
- **All non-essential hospital or office staff should be allowed to stay home and telework.**
- **All non-urgent in-person clinic/office visits should be cancelled or postponed, unless needed to triage active symptoms or manage wound care.**
- **Multidisciplinary team (MDT) meetings are sought after in any surgical decision and should be held virtually as possible. This team include the surgeon, intensivist, radiologist, infectious disease specialist and nurse managers.**

Consultation:

- Please avoid physical consultation for non-emergency cases.
- Use the telemedicine platform or provider's help and consult your patients online for normal surgical problems and follow-up.
- Please follow the statutory policies of respiratory triaging in receiving surgical emergencies.
- The social distancing, restricting the attendants to not more than one, patient/attendant masking and hand hygiene measures should be adhered to.
- "Closing the Back Door" recommendations in the fight against COVID-19 is to be followed as per the state regulations. It is evident that there is a need to control the spread of the virus originating from the assumed "clean areas" within the hospital. While in an ideal situation all patients coming to a hospital be tested for Covid-19, testing and statutory limitations are a challenge at this moment.
- In referral or transfer from other centres - Please discuss with the referring Physician in detail about the contact details, overseas travel history of the patient or family members and presence of respiratory symptoms.

Surgical Emergency Patient Stratification

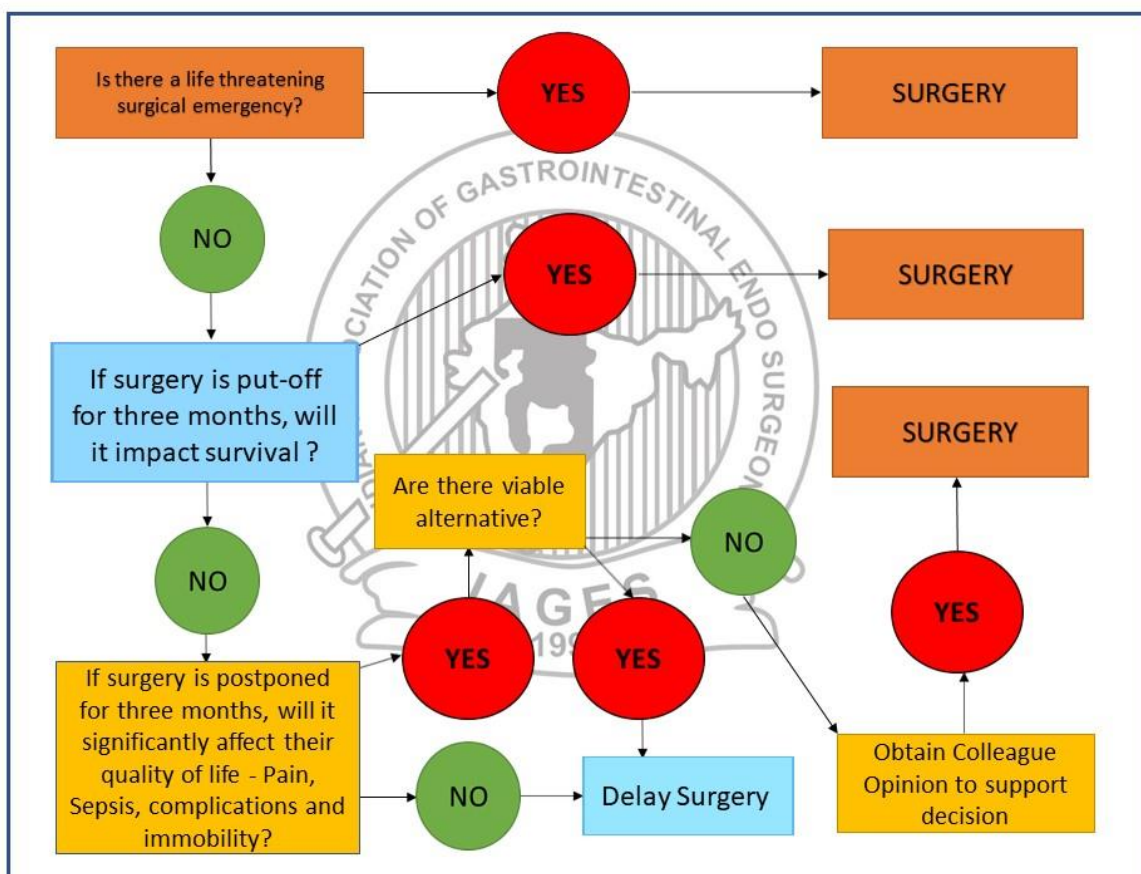
1. All Serology positive patients
2. Serology Negative with suspicious respiratory symptom cases
3. Serology Negative no respiratory symptom cases
4. Untested patients with suspicious respiratory symptoms
5. Untested patients without respiratory symptoms

You are expected to refer the Category 1, 2 and 4 patients to a COVID 19 designated treatment centre.

Evaluation:

- All patients in addition to surgical evaluation should have a Xray Chest and preferably CT of the Chest as a routine to identify potential COVID 19 cases.

Surgical Decision Making:



Preop Safety Measures:

- COVID-19 testing should be promptly performed* and the patient moved to a PUI (patients under investigation) unit if symptoms suggestive of infection are identified.

- It is the responsibility of the designated medical/surgical team leader to ensure that all patients are evaluated daily for symptoms suggestive of potential COVID-19 infection.
- All suspected COVID-19 infection related precautions should be implemented by all members of the medical/surgical and nursing team.
- In pre-operative setting - Patients scheduled to undergo any type of surgical intervention should be re-evaluated for COVID-19 within 24 hours of the scheduled intervention.
- The latest serology results are to be communicated to the surgical team and to the patient and family once it is available.
- An informed consent with COVID 19 consideration(s) is mandatory.

*Subject to statutory policy

Intra-op Safety Measures:

- The surgical procedure in a COVID 19 positive patient is to be taken up in the designated centre alone.
- If in case you come to know the patient operated is COVID 19 serology positive at a later date, please inform the appropriate authority, please self-isolate yourself and your team, close the OT for appropriate period of time.
- In case you need to operate a COVID 19 positive patient in a designated centre, a multidisciplinary discussion to re-evaluate surgical indication, appropriate treatment and ICU availability is desirable.

In Operation Theatre - Pneumoperitoneum and Aerosol Protection:

The potential of aerosolization as a mode of transmission during surgery is the focus of this section.

Currently, the best practice for mitigating possible infectious transmission during open, laparoscopic and endoscopic intervention is to use a multi-faceted approach, which includes:

1. Proper room filtration and ventilation
2. Appropriate PPE
3. Smoke evacuation devices with a suction and filtration system

Along with the nasopharynx, the upper respiratory tract and lower respiratory tract, the virus has been found in the entire gastrointestinal tract from the mouth to the rectum.

SARS-CoV-2, is the RNA virus has a size range of 0.06 to 0.14 microns. Masks such as N95 respirators are designed to filter out 95% of particles that are 0.3 microns and larger. Additional adequate safety measures are advised for intubation, extubation, bronchoscopy, endoscopy, and possibly tracheostomy.

Though early reports advised against any laparoscopic procedure, evolving data has shown equivalent risk with open procedures. However, laparoscopy should only be undertaken with practical measures mentioned below.

- All pneumoperitoneum should be safely evacuated from the port attached to the filtration device before closure, trocar removal, specimen extraction or conversion to open.
- Once placed, ports should not be used to evacuate smoke or de-sufflation during the procedure where possible.

- If movement of the insufflating port is required, the port should be closed prior to disconnecting the tubing and the new port should be closed until the insufflator tubing is connected. The insufflator should be “on” before the new port valve is opened to prevent gas from back-flowing into the insufflator.
- During desufflation, all escaping CO2 gas and smoke should be captured with an ultra-filtration system and desufflation mode should be used on your insufflator if available.
- If the insufflator being used does not have a desufflation feature, be sure to close the valve on the working port that is being used for insufflation before the flow of CO2 on the insufflator is turned off. Without taking this precaution contaminated intra-abdominal CO2 can be pushed into the insufflator when the intraabdominal pressure is higher than the pressure within the insufflator.
- The patient should be flat and the least dependent port should be utilized for desufflation.
- Specimens should be removed once all the CO2 gas and smoke is evacuated.
- Surgical drains should be utilized only if absolutely necessary.
- Suture closure devices that allow for leakage of insufflation should be avoided. The fascia should be closed after desufflation.
- Hand-assisted surgery should be avoided as it can lead to significant leakage.
- Wound protection devices used for specimen retrieval should only be placed after desufflation.

Equipment Standards and Safety:

- **Current disinfection and sterilisation standards are appropriate.**
- **Additional safety mechanism inclusive of N95 Masks and PPE are to be in place to ensure safety of the personnel in cleaning and sterilisation zones.**
- **Potential aerosolization at the cleaning zones and drying zones are to be avoided or protected with appropriate automated closed systems.**
- **Appropriate logistics of surgical equipment and disposables are to be maintained.**
- **Availability of the PPE prior / during instrument reprocessing and postoperative care is to be ensured.**

Energy Devices:

“Aerosolization” of viral and bacterial RNA/DNA may occur during the use of energy devices in general surgery - both open and laparoscopic - although there is limited evidence that viable infective particles are dispersed. The mechanism is different - rather than gas moving over fluid it results from pyrolysis of tissues, an inherently destructive process.

The various energy sources lead to varying particle sizes with electrocautery and laser having the smallest, hottest particles and ultrasonic devices larger, cooler particles.

During both open and laparoscopic surgery, the particle concentration tends to increase over time of use of energy sources.

Aerosol Size with various gadgets:

Instrument	Size(μm)
Electrocautery	0.007–0.42
Laser	0.1–0.8
Ultrasonic scalpel	0.35–6.5

- **Use of energy devices is a potential risk.**
- **Minimal use and short burst usage are advised.**
- **Judicious use of energy devices and smoke evacuation is advised.**
- **Cold haemostasis is the choice method advised.**

FILTERS:

- Filtration is an advised means of protection from the release of the virus during minimally invasive surgery (MIS) and endoscopy.
- Intraoperatively, filters are recommended to remove smoke and particulate matter including viruses.
- The filtration steps include managing exposure to droplets, bodily fluids, surgical smoke and aerosols.
- Currently, there is no research or data on the transmission of the COVID-19 virus via surgical smoke; however, other viruses are known to transmit through surgical smoke.
- Currently, two filters namely ULPA (Ultra-Low Particle Arrester) and HEPA (High Efficiency Particle Arrester) are capable of clearing the viral particles. However, validation is still awaited.
- However it is advised that there is a potential threat from any filter, as multiple external connections are involved in the insufflation / desufflation process.
- The surgical procedure and at crisis situations of bleed may expose the team to a dangerous level of atmospheric spill of high risk aerosols when involving multiple exchange of instruments and during handling gas mixed abdominal fluids. It is advised to use appropriate smoke evacuation systems in the hour of crisis.
- It is suggested that the current best practice for mitigating an infection transmission during a laparoscopic procedure is to use a multi-layered approach, which includes proper ventilation, appropriate PPE and smoke evacuation devices with a suction and filtration system (among other standard safety precautions)

Personal Protection Equipment:

- Disposable items are to be disposed according to standard guidelines.
- Re-sterilisation of PPE is an ongoing challenge.

Summary:

- Emergency procedures are undertaken in life threatening conditions and have no alternatives, e.g. bowel perforation, gangrene and unresolved obstruction which need immediate surgery.
- Non-surgical percutaneous interventions are prudent if it can defer surgery for the time being and minimize hospital stay and requirement for a longer institutionalized health care.
- Procedures that do not resolve a threat to life like cholecystectomy for biliary colic, complications of gall stones, appendectomy procedures and for conditions wherein conservative management can effectively buy time may be deferred till the situation settles.
- Where possible, the role of alternate non surgical approaches to GI cancer such as NACT or RT are to be considered. A virtual multidisciplinary approach is advised.

In Conclusion:

- Appropriate usage of PPE and Optimal equipment utilisation and sterilisation methods are advised.
- An intentional delay or a planned postponement is advocated in all surgical conditions except in life saving emergencies.
- The directives are focused to reduce the intensity of procedure.
- If a procedure is done, steps are to be taken towards an ultra short hospital stay.
- Patient, Personnel, Procedural safety should be the utmost priority.

Caution:

- **Please be aware none of the available desufflation manoeuvre is complete and thus any laparoscopic procedure is a potential exposure threat.**
- **Current statutory guidelines allow limited testing in asymptomatic patients. Additionally, time taken for the reporting of serology may vary based on kit availability and time of the day. In these situations – treat them as seropositive patients and follow higher safety measures.**
- **All precautions are to be taken in all patients as if you are managing a seropositive patient.**
- **We recommend, that unproven local innovations or “JUGAAD” are best avoided.**
- **These recommendations are for General & Laparoscopic Surgeons. Sub-specialities should in addition look at specific measures/ guidelines issued by their own societies**

This directive is compiled and reviewed by the scientific committee of IAGES

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