

Surgical practice recommendations for minimal access surgeons during COVID 19 pandemic – Indian inter-society directives

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Abstract

These are inter-society guidelines for performance of laparoscopic surgery during COVID-19 pandemic that has affected the way of surgical practice. The safety of healthcare workers and patients is being challenged. It is prudent that our surgical practice should adapt to this rapidly changing health environment. The guidance issued is based on global practices and national governmental directives. The Inter-Society Group urges you to be updated with the developing situation and evolving changes.

Keywords: Consent, COVID, minimal access surgery, pandemic, personal protective equipment, practice, recommendations, safety

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Submitted: 09-May-2020, **Accepted in Revised Form:** 10-May-2020, **Published:** 05-Jun-2020

INTRODUCTION

In the current pandemic COVID 19 scenario, there is urgent need for guidelines for performing various surgical procedures. The utmost priority remains the safety of the patients and health care workers.^[1,2] Current recommendations are mostly based on expert opinion and knowledge of other pathogens with similar characteristics. These recommendations are time sensitive. These are bound to change as evidence-based data emerge.

GENERAL RECOMMENDATIONS

- We should provide timely surgical care to patients presenting with urgent and emergent surgical conditions while optimising patient care resources (e.g. hospital and intensive care unit beds, personal protective equipment and ventilators) and preserving the health of caregivers
- All elective surgical and endoscopic cases should be postponed at the current time.^[1]

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How to cite this article: Srivastava A, Nasta AM, Pathania BS, Sundaram E, Jani KV, Manickavasagam K, *et al.* Surgical practice recommendations for minimal access surgeons during COVID 19 pandemic – Indian inter-society directives. *J Min Access Surg* 2020;16:195–200.

Access this article online	
Quick Response Code:	Website: www.journalofmas.com
	DOI: 10.4103/jmas.JMAS_93_20

- Non-operative management should be considered where ever possible^[2] (such as for early appendicitis and acute cholecystitis)
- All non-urgent in-person clinic/office visits should be cancelled or postponed, unless needed to triage active symptoms or manage wound care
- All non-essential hospital or office staff should be allowed to stay home and telework
- Multidisciplinary team^[1,3] meetings should be sought after in any surgical decision and should be held virtually as possible. This team includes the surgeon, intensivist, radiologist, infectious disease specialist and nurse managers (subject to availability and requirements)
- In case the treating hospital is not a COVID 19 designated centre, patients with high risk and diagnosed cases should be referred to appropriate designated COVID 19 centre.

SURGICAL CONSULTATION RECOMMENDATION

- Avoid physical consultation for non-emergency cases^[4]
- Use the telemedicine platform or provider’s help and consult your patients online for normal surgical problems and follow-up. Please follow the regulations issued by the MOHFW. <https://www.mohfw.gov.in/pdf/Telemedicine.pdf>
- 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
- The entry and exit pathway should be according to statutory regulations
- It is desirable, all preoperative patients be tested for COVID 19 status a day prior to surgery
- In referral or transfer from other health-care facility – 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 [Figure 1].

SURGICAL TRIAGE

Definitions

- Emergency life-threatening conditions - these are those conditions in which immediate surgical intervention is required^[5] and there is not enough time available to do and get the results of COVID 19 testing. For example – life-threatening traumatic haemoperitoneum with haemodynamic instability, bowel gangrene
- Emergency procedures - These are those procedures that require immediate surgical intervention but provide a window of few hours to get COVID 19

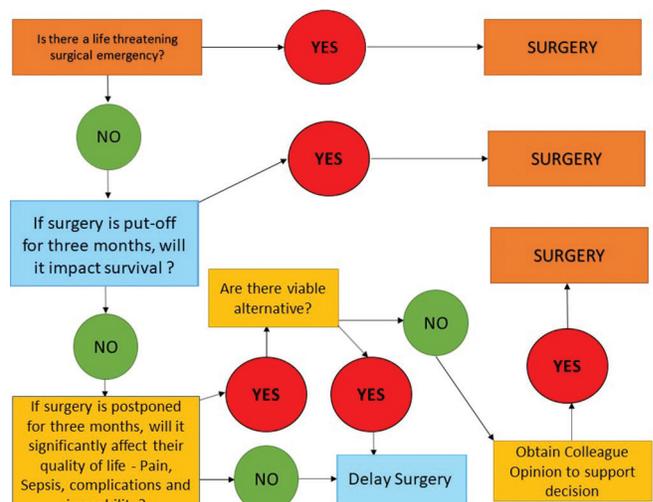


Figure 1: Surgical triage

testing. Interim non-surgical intervention could also be an option. For example – Bowel obstruction, perforation of hollow viscus. Emergency procedures are undertaken in life-threatening conditions and have no alternatives, for example, bowel perforation, gangrene and unresolved obstruction, complicated appendicitis, complicated cholecystitis, obstructed/strangulated hernia which need immediate surgery

- Semi-emergent procedures - These includes condition where the procedure can be deferred for a few weeks or months but not more than 3 months due to worsening of symptoms or progression of stage of disease affecting final outcome. For example – Major malignancies^[5]
- Elective Procedures - These include those procedures which can be postponed by 3 months or more with mutual consent between patient and surgeon with no untoward effect on final outcome. For example – Uncomplicated groin hernia.

Preoperative phase

- All patients in addition to surgical evaluation should be tested for COVID 19 RT PCR where possible
- In emergency situations, the patient should have an X-ray Chest. CT Chest is done if there is a need for CT abdomen
- Non-surgical percutaneous interventions are prudent if it can defer surgery for the time being and minimise hospital stay and requirement for a longer institutionalised health care
- Where possible, the role of alternate non-surgical approaches to GI cancer^[1] such as neoadjuvant therapy and radiation therapy are to be considered.^[5] A virtual multidisciplinary approach is advised.

Consent directives

- During COVID 19, an improvised consent form

with additional information about COVID 19 and its associated risks have to be obtained [Figure 2].

PERSONAL PROTECTION EQUIPMENT

- The personnel in OT should don adequate Personal Protective Equipment.^[4,6] PPE GUIDELINES From the MOHFW are available at www.mohfw.gov.in
- Donning of PPE shall be done in procedure room/ OT room and doffing shall be done in the designated wash area.

OPERATING ROOM DIRECTIVES

1. Negative pressure room^[1,4] is desirable where possible
2. Minimum no of personnel to be inside operating room
3. Limit the size of surgical team as much as possible
4. Avoid the operating room personnel stepping out of OT during the procedure
5. Minimum 1-h time gap to be given between two procedures/surgeries

CONSENT FORM FOR SURGERY DURING COVID 19 PANDEMIC

I/We _____ knowingly and willingly consent to have treatment / surgery / investigation completed during the COVID-19 pandemic.

I/We have been informed that I am opting for treatment / surgery / investigation in the midst of community outbreak of COVID19 pandemic.

I/We have been explained about the risks and side effects of COVID 19 infection and precautions being taken by the hospital to prevent transmission of infection in patients and staff.

I/We understand and acknowledge that although all precautions as prescribed by the Government of India have been duly implemented by the hospital, as the disease is new and its kinetics, symptoms and treatment are still being studied, no assurances or guarantees can be offered regarding disease transmission to the patient or clinical outcome in case of disease transmission to the patient.

I/We understand the implications and give our consent for the continuation of treatment / surgery / investigation.

I have been tested for COVID 19 to found be negative and I have been told that I may become positive in the post operative period, if I am in the carrier stage of the disease.

I have not been tested and I agree to continue with the surgical procedure. If found positive later, i would not attribute the same to the surgical procedure conducted and the surgeon and doctor concerned.

I have been explained that there is evidence that surgery in infected but asymptomatic patients is associated with a more severe disease manifestation in the post-operative period and an increased mortality.

Patient's Name: _____ Signature _____ Date _____ Time _____

Doctor's Name: _____ Signature _____ Date _____ Time _____

Witness's Name: _____ Signature _____ Date _____ Time _____

Contact No. of witness _____ Address _____

Attendant's Consent: If patient is unable to give consent, reason (Minor/unconscious/under sedation/ mental incapacity/ disoriented, other please specify)

Attendant's Name: _____ Relationship _____

Signature of the Attendant: _____ Date _____ Time _____

Statement of Interpreter (where applicable):

I have comprehensively explained the information above along with the discussion/explanations provided by the doctors, to the patient and /or his/her attendant and in a way which I believe he/she/they can understand and the patient and /or his/her attendant have informed me that they have understood the aforesaid information completely.

Interpreter's Name _____ Signature _____ Contact No _____

Date _____ Time _____

Figure 2: Consent form

6. Minimise duration of surgery
 - a. No surgical or nursing training during this period
 - b. Avoid multiple and complex procedures
7. Reusable accessories are cleaned and disinfected with appropriate solutions as soon as the procedure is over
8. 1% Sodium hypochlorite solution cleaning is recommended for OT Tables and trolleys as soon as the patient is shifted [Figure 3].^[1]

- Laminar flow^[4]/air conditioners at the OT is to be started after induction of anaesthesia
- Stop laminar airflow/air conditioners 20 min before extubation.
- Post-surgery all anaesthesia equipment to be cleaned with 1% sodium hypochlorite solution.

INTRAOPERATIVE RECOMMENDATIONS FOR LAPAROSCOPIC SURGERY

Pneumoperitoneum and aerosol protection

Currently, the best practice for mitigating possible infectious transmission during open, laparoscopic and endoscopic intervention is to use a multi-faceted approach,^[1] which includes:

1. Proper room filtration and ventilation
2. Appropriate PPE^[6]
3. Smoke evacuation devices with a suction and filtration system.

ANESTHESIOLOGISTS DIRECTIVES

The regulations for the anaesthesiologists are issued by the Indian Society of Anaesthesiologists. Salient outcomes are as follows:

- Regional anaesthesia is preferred
- GA with ET intubation is high aerosol producing event.
- The surgical team is advised to enter OT minimum 15 min after the patient has been anaesthetised

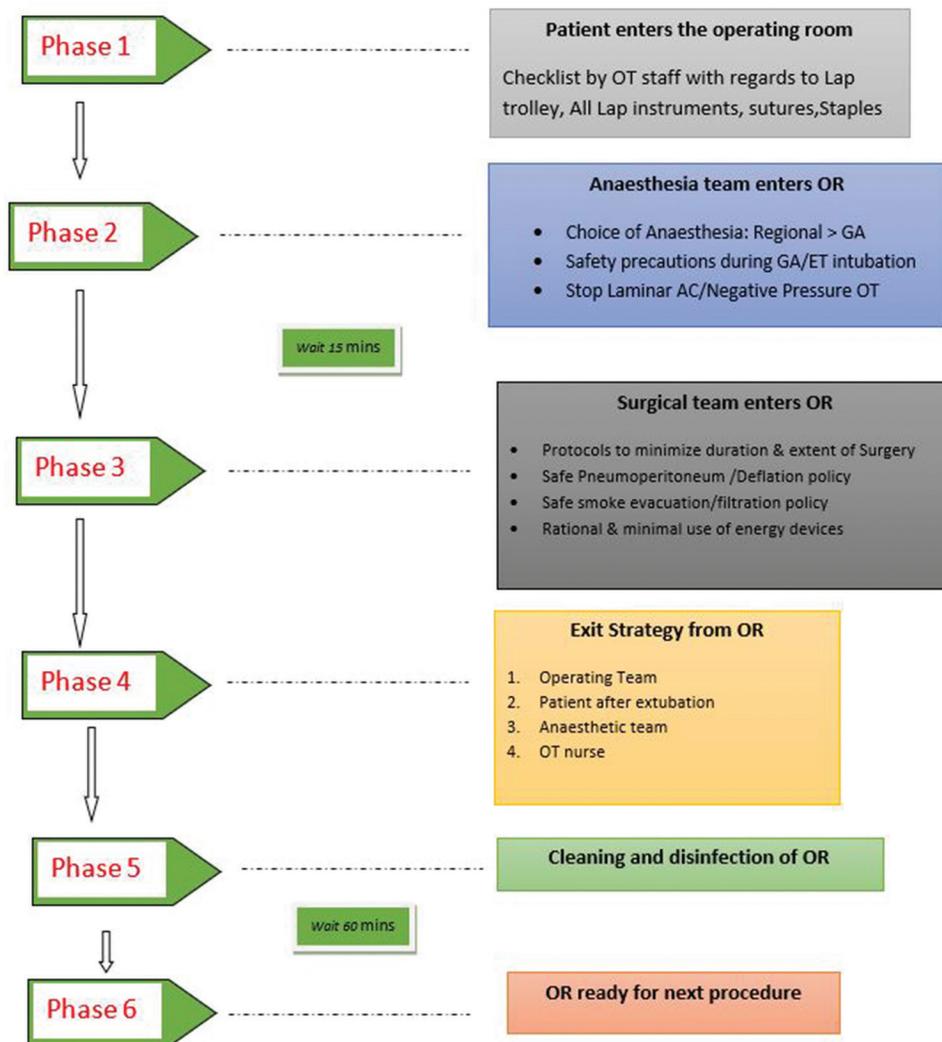


Figure 3: Flow chart COVID infection prevention and control policy in operating room

- Once placed, ports should not be used to evacuate smoke or desufflation during the procedure without adequate precautions^[7]
- 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^[8]
- 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 intra-abdominal pressure is higher than the pressure within the insufflator
- The patient should be flat and the least dependent port should be utilised for desufflation
- Specimens should be removed once all the CO₂ gas and smoke are evacuated
- Surgical drains should be utilised 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
 - The leakage around cannulas need to be minimised
 - Suction devices are a potential source of infection. The use of appropriate filter is advised
 - For routine evacuation of smoke and fumes, a member of the operating team should be designated for this and he/she should use the side channel for controlled evacuation. Standardised smoke evacuation devices can be used.
- All pneumoperitoneum should be safely evacuated from the port attached to the filtration device before closure, trocar removal, specimen extraction or conversion to open.

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 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.^[8]

- Use of energy devices is a potential risk
- Minimal use and short burst usage are advised^[9]
- Judicious use of energy devices and smoke evacuation is advised
- Cold haemostasis is the choice method advised^[9]
- The energy sources should be used at the lowest power setting and charring of tissues should be avoided to minimise the creation of smoke.

FLEXIBLE ENDOSCOPY

Surgical colleagues perform various flexible endoscopic procedures. It is pertinent to follow safe endoscopy practice directives issued by the respective society.

- We should stop all elective endoscopy work. Flexible endoscopy and therapeutic procedures are indicated only for clearly defined emergency and urgent cases
- All staffs in the unit should wear N 95 mask and good quality PPE during any endoscopic procedure
- Every emergency or urgent endoscopy patient should be presumed as COVID positive and managed accordingly taking all strict safety precautions
- Comprehensive well written informed consent form comprising of all necessary details relevant to COVID pandemic should be signed by the patient and relative prior to undergoing any endoscopic procedure
- All emergency and urgent endoscopic procedures should preferably be done under GA with careful endotracheal intubation
- Endoscopy requires high level disinfection while endoscopic accessories should be either disposable or need sterilisation.

CONCLUSION

Our surgical health-care system should adapt to this rapidly changing health environment due to COVID 19 pandemic. Next few months are going to be critical in mitigating the spread of infection.^[10-12] Surgical interventions are considered only for clearly defined emergency and urgent cases.^[12] We should understand our vital role in protecting our staffs while treating our surgical patients. We should

ensure best surgical care by having clear management strategy and compassionate approach.

Financial support and sponsorship

Nil.

Conflicts of interest

There are no conflicts of interest.

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Editor's comment

Since this paper related to COVID-19 is of topical interest, we have fast tracked it through the publication process. The knowledge in this field is evolving rapidly and continually. Some of the aspects mentioned in these guidelines may have become outdated and newer understanding may have emerged. The readers are therefore urged to refer to the most recent versions of the resources related to this topic.