Additional Recommendations in Minimally Invasive Surgery/ Endoscopy and COVID-19

J. Reinier Narvaez, MD, MPH

While we are aware that existing data show that the main method of transmission is through respiratory droplets, there have been reports of other modes, with detection in blood and stool specimens. There are also reports of viral viability in aerosols[1]. These modes of transmission pose hazards for perioperative personal in particular, as these routes are naturally linked with the nature of surgical procedures. Laparoscopy requires insufflation, and within a certain operation requiring electrosurgery, smoke generation and aerosolization is created, posing a potential infectious "bomb" if the virus truly can be transmitted this way. Viral shedding in stool may be transmitted if there is a potential break in use of PPE. Data is scarce as far as surgeons, endoscopists, and perioperative personnel contracting the virus while performing procedures but an abundance of caution is necessary in this period of uncertainty.

Based on the experiences of the Chinese, Singaporean, and Italian clinicians who have published the attached articles, there are a couple of actionable points that may be integrated in our response.

1. All patients about to undergo surgery and endoscopy will need to be screened for symptoms and exposure[2]. It may be ideal to stratify them into risk-groups. Given the limited PPE and other resources on hand, we may be able to tailor use of protective equipment by risk group.

2. There are prior reports of disease transmission via aerosolization in laparoscopy (non-COVID cases)[3]. Therefore, aerosol dispersal must be kept to a minimum.

- Preventing gush of fluid from air leakage or incisions
- Liberal use of suctioning smoke and aerosol and avoidance of two-way insufflators to prevent colonization of circuits or insufflator
- Utilize the least amount of insufflation pressure possible
- Use the lowest electrosurgical settings possible
- EDUCATE perioperative staff on the potential hazards of smoke and aerosolization.

References

1. Ng K, Poon BH, Kiat Puar TH, et al. COVID-19 and the Risk to Health Care Workers: A Case Report. Annals of Internal Medicine 2020.
2. Repici A, Maselli R, Colombo M, et al. Coronavirus (COVID-19) outbreak: what the department of endoscopy should know. Gastrointestinal Endoscopy.
3. Zheng MH, Boni L, Fingerhut A. Minimally invasive surgery and the novel coronavirus outbreak: lessons learned in China and Italy. Annals of surgery 2020.:Accepted for publication, March 2020.

Figures from Repici et al

TABLE 1. Potential SARS-CoV-2 infection risk in endoscopy patients

Classification of potential SARS-CoV-2 infection risk in patients undergoing endoscopic examination	
Low risk	■ No symptoms (eg, cough, fever, breathlessness, diarrhea) ■ No contact with SARS-CoV-2–positive person ■ Nonstay in high-risk area during the previous 14 days
Intermediate risk	■ Presence of symptoms with ○ No medical history for contact with SARS-CoV-2–positive person ○ Nonstay in high-risk area during the previous 14 days ■ No symptoms but ○ Contact with SARS-CoV-2–positive person ○ Stay in high-risk area during the previous 14 days
High risk*	■ At least 1 symptom + 1 of the following: ○ Contact with SARS-CoV-2–positive person ○ Stay in high-risk area during the previous 14 days

SARS-CoV, Severe acute respiratory syndrome coronavirus.
*In an emergency setting, all procedures must be considered high risk if adequate patient history cannot be assessed.

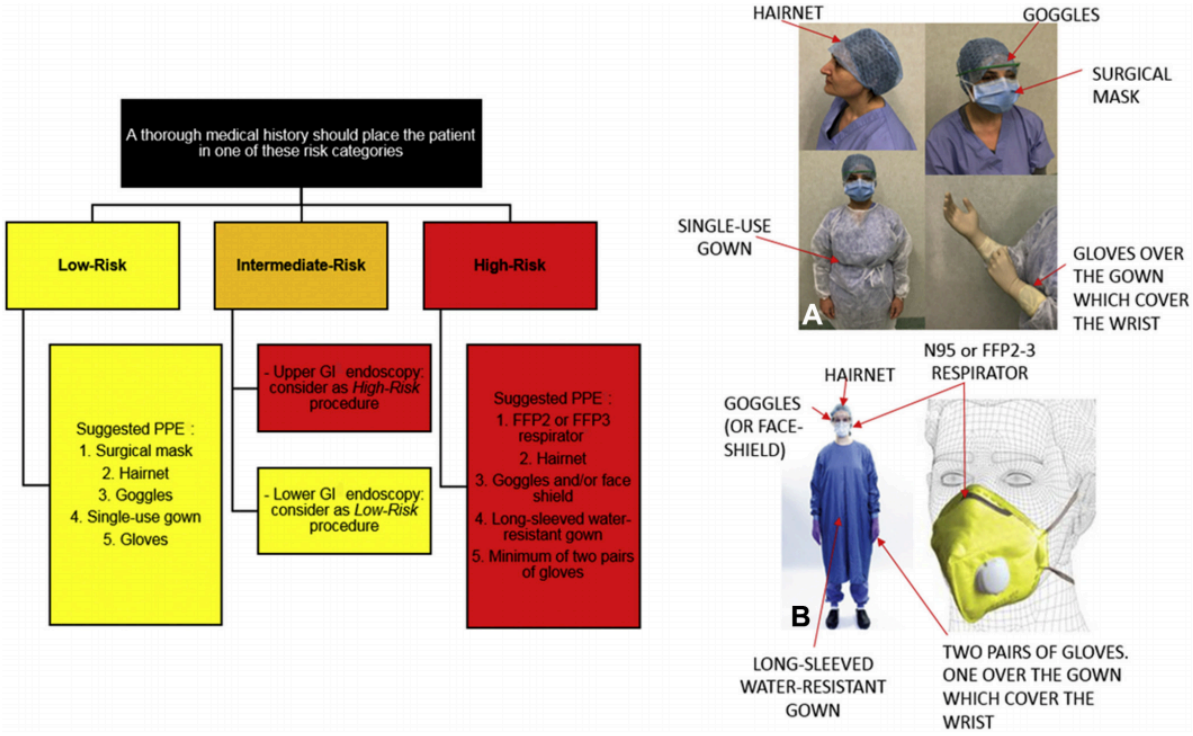

Figure 2. A, Low-risk dressing equipment. **B,** High-risk dressing equipment. *PPE*, Personal protective equipment; *FFP*, filtering face-piece (FFP2/3 are equivalent to N95 mask).