



Major Considerations of Optimization of Surgical Paramentation in Endoscopic Procedures in Covid-19 Times

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Editorial

In March 2020, the new coronavirus (SARS-CoV-2) spread around the world causing respiratory diseases and deaths mainly in groups at risk [1]. Thus, the World Health Organization (WHO) declared the pandemic of this virus whose disease is COVID-19 [2]. Thus, the outbreak of the COVID-19 disease has spread from China to the entire world. It has been estimated that approximately 10% of health professionals have been infected with COVID-19 in western countries [3,4]. The clinical manifestations of COVID-19 are varied, spanning a wide spectrum from mild asymptomatic disease to severe critical respiratory disease that leads to respiratory failure, multiple organ failure, and death [2]. Thus, high clinical suspicion and adequate risk stratification of patients are necessary.

In this context, endoscopy units are at a higher risk of COVID-19 infection by inhaling droplets in the air, conjunctival contact, and potential fecal-oral transmission [5]. In this sense, periendoscopic aerosolized infections have been reported, making upper and low digestive endoscopy (UDE and LDE) procedures at high risk [5,6]. Also, live SARS-CoV-2 was found in the patient's feces [6]. As an entry mechanism, the angiotensin II-converting enzyme (ACE2) receptor, widely expressed in the intestinal tract [3].

Besides, infected endoscopists can transmit the disease to their colleagues, patients, families, and communities as hospital epidemics [3]. In this regard, infection prevention and control have proven to be dramatically effective in ensuring the safety of doctors and patients. This is not limited to the use of personal protective equipment (PPE) but is also based on a transparent and detailed prophylaxis strategy, risk

stratification of patients, correct use of PPE, and interventions based on testing, separation, and isolation of patients with high COVID-19 risk [3].

In this sense, infection prevention and control are effective in ensuring safety, guiding this pandemic to help ensure the highest level of endoscopic care and protection against COVID-19 for endoscopists and patients. This guidance is based on the best evidence available to risk assessment during the current status of the pandemic and a consensus on what procedures to perform and the priorities for recovery [3,4].

In this scenario, it is known that endoscopy procedures require a short physical distance from patients to staff, and according to studies conducted during the global SARS outbreak in 2003, patients' infected droplets can reach people located approximately 1.83 meters or more from the source. Therefore, the establishment of infection prevention measures and guidelines within an endoscopy department is essential for creating high quality and safe environment to protect patients and staff. These measures must be implemented and maintained to prevent the further unrecognized spread of the disease [4].

Based on this, it is essential to list the main symptoms of COVID-19, highlighting fever, weakness, cough, diarrhea, difficulty in breathing, and even the development of the acute respiratory syndrome. Also, refractory metabolic acidosis and coagulation dysfunction can occur, leading to death in around 3.5% of cases. The Table 1 shows the levels of SARS-CoV-2 infection in endoscopic patients [7].

Table 1. The potential risk of SARS-CoV-2 infection in endoscopic patients [7].

Potential risk of infection by SARS-CoV-2 in patients: Endoscopic Examination*	
Low Risk	<ul style="list-style-type: none"> ✓ No symptoms of cough, fever, shortness of breath, and diarrhea; ✓ No contact with a positive SARS-CoV-2 person; ✓ Did not stay in a high-risk area during the previous 14 days;
Intermediate Risk	<ul style="list-style-type: none"> ✓ Presence of symptoms without a medical history of contact with a positive SARS-CoV-2 person; ✓ Did not stay in a high-risk area during the previous 14 days; ✓ No symptoms, but had to contact a positive SARS-CoV-2 person; ✓ Stayed in a high-risk area for the previous 14 days;
High Risk	<ul style="list-style-type: none"> ➤ At least 1 symptom of the following: ✓ Contact with positive SARS-CoV-2 person; ✓ Stayed in a high-risk area for the previous 14 days.

* In an emergency environment, all procedures should be considered high risk, if appropriate the patient's history cannot be assessed.

Table 2. A suggestion of surgical dressing to perform upper or low digestive endoscopy in times of Pandemic COVID-19.

✓ Use of private hospital service clothing.
✓ Closed shoes
✓ Absence of props and other belongings in the procedure room.
✓ Start the vestment outside the procedure room. Washing hands and forearms with soap and water.
✓ Use of shoe cover.
✓ Use of caps
✓ Wash your hands again
✓ Put on non-sterile gloves
✓ Put on mask N93
✓ Place the Shield face
✓ Wash hands and forearm
✓ Enter the endoscopy room
✓ Wear the sterile, waterproof long-sleeve surgical cap following the universal guidelines of the surgical garment
✓ Wear another sterile glove covering the cover cuff
✓ Avoid touching the endoscopic processor or any other equipment, asking the room attendant who should be properly attired to perform these functions of turning on, off, and handling accessories
✓ The endoscopist should have initial contact only with the endoscopy device
✓ When performing upper digestive endoscopy, it is suggest that the patient in the left lateral decubitus position has his face slightly directed downwards

- ✓ **It is suggested that the positioning of the endoscopist outside the axis of the mouth and nose with lateralization next to the stretcher at the level of the thoracoabdominal transition when possible, reducing exposure to aerosols.**
- ✓ **For Colonoscopy, it is suggested to use fenestrated fields and also guiding after the initial introduction of the colonoscope, the hip and gluteal region are covered, as well as the endoscopist being positioned outside the anus light axis, being positioned more proximally on the back at the level of the thoracolumbar transition.**
- ✓ **The handling of the clamps and opening the valves of the work channels must require equal care.**
- ✓ **The opening must be done by activating the aspiration command and directing it away from the axis of those present in the room and, if possible, opening it protecting with the gloved palm.**
- ✓ **Important care when removing accessory clamps. Always in an agreement between endoscopist and assistant. The endoscopist with double gauze protection next to the working channel valve will dry and protect the dispersion of secretions coming from the device as well as the assistant will be pulling with one hand and the other drying with Double gauze, in the second stage the clamp that is being withdrawn. Thus, there is the containment of secretions from the digestive tract through the working channel in the manipulation of the forceps.**
- ✓ **At the end of the procedure, the endoscopist passes the due endoscope to his assistant after removing the digestive tract by aspirating the secretions that may have remained in the working channel of the device.**
- ✓ **Disparate takes place in the procedure room with the removal of the outermost glove and discarded in its container.**
- ✓ **Following the removal of the disposable apron and also discarded in a suitable container.**
- ✓ **When leaving the room the endoscopist removes the face shield. Remove the first gloves and wash your hands.**

Based on these findings and following the recommendations of the Brazilian Society of Digestive Endoscopy (SOBED) [7], the European Society of Gastrointestinal Endoscopy (ESGE) [8], the European Society of Gastroenterology and Endoscopy Nurses and Associates (ESGENA) [9] and to the IFSO Endoscopy Committee that offers guidance on navigating bariatric endoscopic procedures in patients with obesity during the COVID-19 pandemic, in hopes of mitigating the risk of SARS-CoV-2 transmission to vulnerable and professional patients of health [10]. So, for safe endoscopy during the pandemic, the present Editorial suggests, according to Table 2, an optimization (improvement) of the surgical vestment for the performance of the UDE or LDE in times of Pandemic COVID-19.

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Data sharing statement

No additional data are available

Conflict of interest

The authors declare no conflict of interest.

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