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Research Article

ENDOSCOPY IN ERA OF COVID-19 PANDEMIC

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Abstract

Corona virus disease 2019 (COVID‑19) caused by SARS‑CoV‑2 has spread worldwide and has affected millions of people, thus has forced the temporary postponement of elective endoscopic procedures but emergency procedures have to be done with the lowest possible risk of exposing patients, staff, and providers. In view of Covid-19 Pandemic, standard operating procedures for performing Endoscopy were prepared and followed which are explained in detail as follows. As an Endoscopist, the first mandatory thing was to clearly differentiate between the elective and emergency endoscopic procedures as only emergency endoscopic procedures were to be done. In total 400 procedures were done following above guidelines in which 316 (79%) were endoscopy and 84 (21%) were colonoscopy.

Keywords: Endoscopy, Colonoscopy, COVID-19, SARS-CoV-2, Dysphagia

INTRODUCTION

Corona virus disease 2019 (COVID‑19) caused by SARS‑CoV‑2 has spread worldwide and has affected millions of people, thus has forced the temporary postponement of elective endoscopic procedures but emergency procedures have to be done with the lowest possible risk of exposing patients, staff, and providers. The clinical scenario of COVID-19 includes gastrointestinal manifestations but seem to be less common when compared with severe acute respiratory syndrome. Early reports from Wuhan indicated that around 10% of cases presented with diarrhea and nausea, 1 to 2 days before the onset of fever and dyspnea. It is widely accepted that COVID-19 is mainly spread via droplets and contact, but there is evidence that airborne spread is possible during aerosol-generating procedures (AGPs). In addition, emerging evidence suggests that severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), the virus that causes COVID-19 and formerly known as the 2019 novel coronavirus, can be detected in the feces of patients, leading to the distinct possibility of transmission by feco–oral route. This affinity may be due to the abundant expression of angiotensin-converting enzyme 2 protein, a receptor for SARS-CoV-2 required for cell entry, in the epithelial layer of the gastrointestinal tract. Clinical departments performing endoscopy are faced with great challenges during this pandemic. Endoscopy is likely a high-risk procedure as pulmonary and gastric secretions, as well as fecal material, may contain large viral loads. Infection prevention and control measures must be implemented to enhance patient safety, avoid nosocomial outbreaks, protect HCP, and ensure rational use of limited personal protective equipment (PPE). Multiple endoscopy societies and expert groups have offered recommendations and position statements for endoscopy during the COVID-19 pandemic. It is anticipated that physician and facility readiness to resume endoscopic procedures will vary based upon the status of the pandemic in a given geographic location and will evolve gradually based on local conditions and guidance from public authorities.

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Not all proposed measures will be applicable to all practice settings at all times. Patients should be screened with a pre-procedure COVID-19 questionnaire upon arrival to the endoscopy facility. Staff should be similarly screened prior to starting each work day. Physical distancing rules need to be adhered to by patients and staff, except during intervals of close contact required by providers to prepare the patient for a procedure.

Text

In view of Covid-19 Pandemic, standard operating procedures for performing Endoscopy were prepared and followed which are explained in detail as follows. As an Endoscopist, the first mandatory thing was to clearly differentiate between the elective and emergency endoscopic procedures as only emergency endoscopic procedures were to be done.

The emergency endoscopic procedures which were carried out belonged to following groups-

1. Upper or lower gastro-intestinal bleed
2. Foreign body ingestion,
3. Suspected malignancy and dysphagia.

The patients requiring emergency endoscopy procedures were divided into three categories-

A. Confirmed Covid-19 cases
B. Suspected Covid-19 cases
C. Non Covid Cases

A) Confirmed Covid-19 cases

The confirmed Covid-19 cases were admitted either in Covid Isolation ward or Covid ICU and for them emergency endoscopy procedures, if required were done on bedside. As all the facilities for Donning and Doffing were already existing there, hence same were utilized. Prophylactic administration of antiemetic drug was preferred to reduce the risk of vomiting and viral spread as vomiting is usually accompanied by coughing, which increases aerosolization. The endoscopic

procedures were done after wearing Personal Protective Equipment (PPE) Kits and minimum supporting staff was utilized for avoiding unnecessary exposure and wastage of PPE kits. Only one Endoscopist, one bearer for holding mouth guard and one Endoscopy technician was allowed for carrying out these emergency endoscopy procedures. After the completion of endoscopic procedure, endoscope & its accessories were washed in four steps i.e. Soap water, tap water, 2% Glutaraldehyde and again with tap water after every procedure. The used endoscopy equipment were sealed in a double zip locked plastic bag. The histo-pathological specimens were kept in tight fit plastic boxes which were sealed in plastic bags. The plastic bags were then wiped clean before sending for sampling. The metallic equipment were kept in 1% sodium hypochlorite solution for half an hour. They were then washed and wiped clean. They were subsequently put in instrument boxes and covered with plastic bags. The Endoscopy machine was covered completely with plastic sheet before entering the ICU /Isolation ward and before exit was changed with new plastic sheet. After doing the procedure, the Endoscopist went to the designated Doffing Room and removed the protective equipment. After removing the protective equipment, caution was taken for avoiding touching hair or face before washing hands. In the last Endoscopist used the change room and discarded ICU/Isolation ward clothes. All the staff took shower before leaving the ICU/Isolation ward. The Used PPEs were disposed as per the Bio Medical Waste Management guidelines.

B) Suspected Covid-19 cases

The Suspected Covid-19 cases requiring emergency endoscopy procedures were done on bedside in the suspect Covid ICU already allotted in Institute. Rest all the steps as explained above for confirmed Covid-19 cases were taken.

C) Non Covid-19 cases

The Non Covid-19 cases requiring emergency endoscopy procedures were done in the existing Endoscopy Suite at PGIMS, Rohtak. The endoscopy room was well ventilated and with facility of Exhaust fan. As endoscopy procedures are of shorter duration, hence were easily be done without requiring air conditioner facility. Patients continued to wear their surgical mask throughout their entire stay at the endoscopy center (with the mask being removed only for upper endoscopy).The endoscopic procedures were done after wearing Gown, Hairnet, Goggles, Face Shield,N-95 Face mask, Double Gloves, Gum Shoes. The minimum supporting staff was utilized for avoiding unnecessary exposure. Only one Endoscopist, one bearer for holding mouth guard and one Endoscopy technician was allowed for carrying out these emergency endoscopy procedures. All the endoscopic procedures planned for that particular day were finished in same sitting by keeping adequate time for cleaning with 1% Sodium hypochlorite solution, of endoscopy bed, monitor, floor, walls and other items which come in contact with patient, after completion of every procedure. The endoscope and its accessories were washed in four steps i.e. Soap water, tap water, 2% Glutaraldehyde and again with tap water after every procedure.

Covid Testing - A significant number of COVID-19 infections are transmitted from asymptomatic or pre-symptomatic individuals, hence efforts to mitigate viral transmission required all patients to demonstrate either the presence of convalescent antibodies to SARS-CoV-2 or a negative molecular test before endoscopic procedures. In Covid suspect or non-Covid patients, emergency endoscopic procedures were not denied on basis of pending Covid testing report and procedures were done using PPE kits in case of Suspected Covid patient and in gown, hairnet, face shield, goggles, N-95 face mask, double gloves and gum shoes. In total 400 procedures were done following above guidelines in which 316 (79%) were endoscopy and 84 (21%) were colonoscopy.

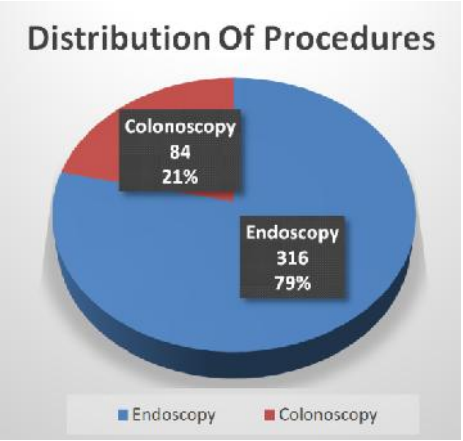

Figure 1. Pie-Chart Showing Distribution of Total 400 Procedures

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