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Dear Susan,

I am submitting this Viewpoint on behalf of my coauthors. I am the corresponding author.

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International Organization for the Study of Inflammatory Bowel Disease Recommendations for Surgery in Patients with Inflammatory Bowel Disease During the COVID-19 Pandemic

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Coronavirus disease 2019 (COVID-19) is caused by SARS-CoV-2. After its first appearance in Wuhan in December 2019, it has spread over the world rapidly and consequently has been declared as a pandemic by the World Health Organization. The medical pandemic has overwhelmed health systems leading to a surgical crisis in the form of delayed surgery. Inflammatory bowel disease (IBD) is a chronic inflammatory condition which causes acute exacerbations and complications that can require timely surgery. The International Organization for the Study of Inflammatory Bowel Disease (IOIBD) has published recommendations regarding medical management of the IBD patients during COVID-19 pandemic.

From the COVID-19 epicenters of New York City, Milan, Paris, amongst others, IOIBD member surgeons have developed significant experience. For that reason, we developed
expert-based recommendations for the surgical management of IBD patients during the pandemic because we recognized the tremendous potential for the harm to IBD patients that lay in the broad delays of all benign surgical disease. Operations have been postponed by governments and hospitals to flatten the curve and increase health care capacity for COVID patients. In the creation of criteria for the allocation of scarce hospital resources, IBD should be recognized as a rare non-uniform condition whose delays can cause significant downstream morbidity and mortality. Due to the burden of COVID-19, as well as the complexity of multiple medical options (steroids, immunomodulators and biologics), and multiple stage operations, we believe that patients during this pandemic can be best served by multi-disciplinary care. We recommend planning logistics ahead of time to allow multidisciplinary teams (MDT) to work together virtually in addition to limited face-to-face direct care.

NON-ELECTIVE SURGICAL MANAGEMENT

Surgical Management of UC

• Decision-making for these treatments should be tailored individually for each patient via an MDT.

• Ulcerative colitis patients with high-grade and low-grade dysplasia may be delayed in the short-term, but special attention should be considered by the MDT since the risk of synchronous cancer at immediate colectomy can be up to 42% and 19% respectively. Clinicians should maintain accurate records of deferred procedures and should prioritize these patients once surgical slots become available.

• Invasive colon and rectal cancer in the setting of asymptomatic or mild symptomatic ulcerative colitis, should be treated as a non-elective procedure, considering patients symptoms, and metastatic workup in a multidisciplinary tumor board (MTB).

• UC patients failing outpatient medical therapy or refractory to inpatient medical therapy require urgent colectomy.

• Perforation, severe hemorrhage or toxic megacolon are indications for emergency surgery.

SURGICAL MANAGEMENT OF CD

Perianal CD

• If a patient with active perianal CD presents with signs of infection, abscess or intractable pain, urgent exam under anesthesia, incision & drainage of the abscess with drain placement should be performed to alleviate symptoms and/or provide safety to optimize further medical therapy.

• If the symptoms of active perianal CD cannot be controlled via optimal medical therapy or less invasive surgical methods, or there is risk of severe perianal sepsis, fecal diversion may be considered.

Small bowel or colonic CD

• Small bowel obstruction, contained small bowel perforation with abscess and active bleeding in stable patients may be initially treated non-operatively with
surgery reserved for the rare patients presenting with failure of non-operative management.

- Active bleeding intractable to any type of non-invasive or invasive treatment such as angiography requires urgent surgical intervention.
- If medical treatment is considered to be ineffective or the patient is reluctant to continue medical therapy, or in the case of acute small bowel obstruction, then urgent small bowel resection or strictureplasty can be considered by MDT.
- Patients with Crohn’s colitis refractory to medical therapy should be considered by MDT for colectomy with end ileostomy.
- Surgery for CD patients with small bowel cancer should be evaluated by MTB.

**PERIOPERATIVE CONSIDERATIONS**

**Scheduling**

If there are difficulties with scheduling, any IBD patient being considered for surgery should be discussed with the surgical department/section/center chair.

**Testing**

Any patient requiring IBD surgery during the pandemic should be tested for SARS-CoV-2 preoperatively. Surgeons should be aware of their local testing options. There is tremendous variability in PCR testing modalities in terms of availability, accuracy and even time to result which can vary from 5 minutes to 5 days. Notably many PCR tests have been WHO, ECDC, and FDA approved with no disclosed sensitivity or specificity, and those with published sensitivities vary widely from 60% to 93.8% with many in the 80% range. The prevalence of the infection can be significant. A universal screening for SARS-CoV-2 in obstetric patients admitted for delivery at a New York City hospital between March 22 and April 4, 2020 before the city’s local peak, found that 13.7% were SARS-CoV-2 positive although 87.9% of the positive patients were asymptomatic at the time of delivery. In hospitals where rapid PCR tests are unavailable, chest CT can be recommended in all patients before surgery as screening. If no testing or imaging is available, then all patients can be considered as positive until proven otherwise. In addition to clinical judgement and imaging, a positive test can be used to counsel patients, assign cases to negative pressure operating rooms, guide postoperative management and postoperative destination to avoid horizontal transmission. If a patient has a positive test or imaging (even if asymptomatic) surgery should be postponed whenever possible. Even if the patient has a negative test, recognize that the testing has a high false negativity rate and pandemic areas can have a high disease prevalence. This recommendation is subject to change with the progress of the pandemic.

**Operating room infrastructure**

SARS-COV-2 enters the cells via the receptor of angiotensin-converting enzyme 2 (ACE2) which is abundantly expressed by lung alveolar cells type II and in the gastrointestinal tract. Viral RNA has been isolated in the stool of patients with COVID-19 but it is still unclear whether this material is infectious. A considerable proportion of COVID-19 patients present with abdominal pain and diarrhea before they develop any upper respiratory symptoms. Although COVID-19 is predominantly a respiratory infection, theoretically oral-fecal transmission cannot be excluded.
Universal precautions are recommended due the ambiguity of testing, high false negative rates and the high rate of viral shedding in asymptomatic patients. All operating room staff should wear N95 masks covered by regular operating room masks and face shield PPE regardless of the COVID-19 status of the patient. Patients with suspected or proven COVID-19 should be operated on in a negative pressure operating room.

**Conduct of Surgery**

In the presence of conflicting evidence and potential unnecessary risk to staff and their subsequent patients, we advocate caution. There is no contraindication for the use of minimally invasive surgery (MIS) for COVID-19 patients, but the surgeon should discuss the risks and benefits with the operative team. In general, there should be a lower threshold for conversion from MIS to open to avoid delays, especially during the peak of the surge with limited hospital resources and staffing. Ultimately the decision of MIS vs open is at the complete discretion of the operating surgeon to judge operative approach relative to limited staff resources and staffing. Limited hospital resources have been quantified by the “Dynamic scale for surgical activity during the pandemic COVID-19” created by the Spanish Society of Surgery (AEC).10

Like other societies, in all patients but especially those with suspected or proven COVID-19, we strongly recommend minimizing staff exposure to aerosolization from intubation, surgical plume, peritoneal insufflation, and intraoperative endoscopy. We advocate minimizing the creation of a surgical plume through the use of monopolar cautery, bipolar or ultrasonic vessel sealing devices.11 The surgical plume should be abated with routine suction cautery and smoke evacuator use. It is also prudent to deflate the patient with a closed suction system at the time of specimen extraction or before making an incision for conversion to open surgery. Activities which unnecessarily prolong the procedure, e.g. excessive hands-on teaching, should be avoided especially in the setting of patients with proven COVID-19. Operative planning should account for a decrease in operating room staff to minimize exposure and the likelihood of decreased staff availability due to either redeployment or illness. The liberal use of temporary fecal diversion is suggested to minimize the risk of septic complications because overwhelmed hospital systems likely have a diminished capacity to rescue ill patients. It should be noted that the cohort of patients operated on during a surge are likely sicker than average and thus at greater than average risk of having anastomotic complications without diversion.

**Perioperative mortality**

A retrospective study of 34 surgical patients with a median age of 55 who subsequently tested positive for SARS-CoV-2 after developing symptoms had a notable mortality rate of 20% after elective surgical procedures.12 While one hopes that various confounders were largely responsible for the high mortality rate, we will be keeping a lookout for subsequent data on this important subject. The possibility of a higher perioperative morbidity and mortality in SARS-CoV-2 positive patients should be considered in the timing of surgery for IBD patients. While awaiting further evidence on perioperative mortality, management of SARS-CoV-2 positive patients with symptomatic IBD with attentive medical care instead of surgery in the short-term should be given careful consideration by the MDT. The Table lists various resources that may be of help to the surgeon managing IBD patients during the COVID-19 pandemic.
CONCLUSION

We aimed to summarize our recommendations from international high volume IBD centers at epicenters of COVID-19 to avoid morbidity and mortality of IBD patients during pandemic imposed limits on non-elective surgery. Our discussion with our patients and our colleagues about balancing unknown risks against known morbidity and mortality should be transparent. Preparation for initial surges or resurgences should include a multidisciplinary approach and the engagement of surgical leadership early in the development. We hope our experience encourages proactive nuanced planning for surgical management across the globe.

REFERENCES


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