

Diseases of the Colon & Rectum

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

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DISEASES OF THE COLON & RECTUM

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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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VIEWPOINT

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-2.¹ 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.² 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.³

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

1 expert-based recommendations for the *surgical* management of IBD patients during the
2 pandemic because we recognized the tremendous potential for the harm to IBD patients that
3 lay in the broad delays of all benign surgical disease. Operations have been postponed by
4 governments and hospitals to flatten the curve and increase health care capacity for COVID
5 patients. In the creation of criteria for the allocation of scarce hospital resources, IBD should
6 be recognized as a rare non-uniform condition whose delays can cause significant
7 downstream morbidity and mortality. Due to the burden of COVID-19, as well as the
8 complexity of multiple medical options (steroids, immunomodulators and biologics), and
9 multiple stage operations, we believe that patients during this pandemic can be best served by
10 multi-disciplinary care. We recommend planning logistics ahead of time to allow
11 multidisciplinary teams (MDT) to work together virtually in addition to limited face-to-face
12 direct care.
13

14 **NON-ELECTIVE SURGICAL MANAGEMENT**

15 **Surgical Management of UC**

- 16 • Decision-making for these treatments should be tailored individually for each
17 patient via an MDT.
- 18 • Ulcerative colitis patients with high-grade and low-grade dysplasia may be
19 delayed in the short-term, but special attention should be considered by the
20 MDT since the risk of synchronous cancer at immediate colectomy can be up
21 to 42% and 19% respectively.⁴ Clinicians should maintain accurate records of
22 deferred procedures and should prioritize these patients once surgical slots
23 become available.
- 24 • Invasive colon and rectal cancer in the setting of asymptomatic or mild
25 symptomatic ulcerative colitis, should be treated as a non-elective procedure,
26 considering patients symptoms, and metastatic workup in a multidisciplinary
27 tumor board (MTB).
- 28 • UC patients failing outpatient medical therapy or refractory to inpatient medical
29 therapy require urgent colectomy.
- 30 • Perforation, severe hemorrhage or toxic megacolon are indications for
31 emergency surgery.

32 **SURGICAL MANAGEMENT OF CD**

33 **Perianal CD**

- 34 • If a patient with active perianal CD presents with signs of infection, abscess or
35 intractable pain, urgent exam under anesthesia, incision & drainage of the
36 abscess with drain placement should be performed to alleviate symptoms
37 and/or provide safety to optimize further medical therapy.
- 38 • If the symptoms of active perianal CD cannot be controlled via optimal medical
39 therapy or less invasive surgical methods, or there is risk of severe perianal
40 sepsis, fecal diversion may be considered.

41 **Small bowel or colonic CD**

- 42 • Small bowel obstruction, contained small bowel perforation with abscess and
43 active bleeding in stable patients may be initially treated non-operatively with
44

1 surgery reserved for the rare patients presenting with failure of non-operative
2 management.

- 3 • Active bleeding intractable to any type of non-invasive or invasive treatment
4 such as angiography requires urgent surgical intervention.
- 5 • If medical treatment is considered to be ineffective or the patient is reluctant to
6 continue medical therapy, or in the case of acute small bowel obstruction, then
7 urgent small bowel resection or strictureplasty can be considered by MDT.
8
- 9 • Patients with Crohn’s colitis refractory to medical therapy should be considered
10 by MDT for colectomy with end ileostomy.
- 11 • Surgery for CD patients with small bowel cancer should be evaluated by MTB.
12

13 **PERIOPERATIVE CONSIDERATIONS**

14 **Scheduling**

15 If there are difficulties with scheduling, any IBD patient being considered for surgery should
16 be discussed with the surgical department/section/center chair.
17

18 **Testing**

19 Any patient requiring IBD surgery during the pandemic should be tested for SARS-CoV-2
20 preoperatively. Surgeons should be aware of their local testing options. There is tremendous
21 variability in PCR testing modalities in terms of availability, accuracy and even time to result
22 which can vary from 5 minutes to 5 days. Notably many PCR tests have been WHO, ECDC,
23 and FDA approved with no disclosed sensitivity or specificity, and those with published
24 sensitivities vary widely from 60% to 93.8% with many in the 80% range.⁵ The prevalence of
25 the infection can be significant. A universal screening for SARS-CoV-2 in obstetric patients
26 admitted for delivery at a New York City hospital between March 22 and April 4, 2020 before
27 the city’s local peak, found that 13.7% were SARS-CoV-2 positive although 87.9% of the
28 positive patients were asymptomatic at the time of delivery.⁶ In hospitals where rapid PCR
29 tests are unavailable, chest CT can be recommended in all patients before surgery as
30 screening. If no testing or imaging is available, then all patients can be considered as positive
31 until proven otherwise. In addition to clinical judgement and imaging, a positive test can be
32 used to counsel patients, assign cases to negative pressure operating rooms, guide
33 postoperative management and postoperative destination to avoid horizontal transmission. If a
34 patient has a positive test or imaging (even if asymptomatic) surgery should be postponed
35 whenever possible. Even if the patient has a negative test, recognize that the testing has a high
36 false negativity rate and pandemic areas can have a high disease prevalence. This
37 recommendation is subject to change with the progress of the pandemic.
38

39 **Operating room infrastructure**

40 SARS-COV-2 enters the cells via the receptor of angiotensin-converting enzyme 2 (ACE2)
41 which is abundantly expressed by lung alveolar cells type II and in the gastrointestinal tract.⁷
42 Viral RNA has been isolated in the stool of patients with COVID-19 but it is still unclear
43 whether this material is infectious.⁸ A considerable proportion of COVID-19 patients present
44 with abdominal pain and diarrhea before they develop any upper respiratory symptoms.
45 Although COVID-19 is predominantly a respiratory infection, theoretically oral-fecal
46 transmission cannot be excluded.
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1 Universal precautions are recommended due the ambiguity of testing, high false negative
2 rates and the high rate of viral shedding in asymptomatic patients. All operating room staff
3 should wear N95 masks covered by regular operating room masks and face shield PPE
4 regardless of the COVID-19 status of the patient. Patients with suspected or proven COVID-
5 19 should be operated on in a negative pressure operating room.
6

7 **Conduct of Surgery**

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9 In the presence of conflicting evidence and potential unnecessary risk to staff and their
10 subsequent patients, we advocate caution.⁹ There is no contraindication for the use of
11 minimally invasive surgery (MIS) for COVID-19 patients, but the surgeon should discuss the
12 risks and benefits with the operative team. In general, there should be a lower threshold for
13 conversion from MIS to open to avoid delays, especially during the peak of the surge with
14 limited hospital resources and staffing. Ultimately the decision of MIS vs open is at the
15 complete discretion of the operating surgeon to judge operative approach relative to limited
16 staff resources and staffing. Limited hospital resources have been quantified by the “Dynamic
17 scale for surgical activity during the pandemic COVID-19” created by the Spanish Society of
18 Surgery (AEC).¹⁰
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21 Like other societies, in all patients but especially those with suspected or proven COVID-19,
22 we strongly recommend minimizing staff exposure to aerosolization from intubation, surgical
23 plume, peritoneal insufflation, and intraoperative endoscopy. We advocate minimizing the
24 creation of a surgical plume through the use of monopolar cautery, bipolar or ultrasonic vessel
25 sealing devices.¹¹ The surgical plume should be abated with routine suction cautery and
26 smoke evacuator use. It is also prudent to deflate the patient with a closed suction system at
27 the time of specimen extraction or before making an incision for conversion to open surgery.
28 Activities which unnecessarily prolong the procedure, e.g. excessive hands-on teaching,
29 should be avoided especially in the setting of patients with proven COVID-19. Operative
30 planning should account for a decrease in operating room staff to minimize exposure and the
31 likelihood of decreased staff availability due to either redeployment or illness. The liberal use
32 of temporary fecal diversion is suggested to minimize the risk of septic complications because
33 overwhelmed hospital systems likely have a diminished capacity to rescue ill patients. It
34 should be noted that the cohort of patients operated on during a surge are likely sicker than
35 average and thus at greater than average risk of having anastomotic complications without
36 diversion.
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42 **Perioperative mortality**

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

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Table: Resources for Surgeons

Pre/peri-operative Criteria	Website
Serologic Testing	https://www.centerforhealthsecurity.org/resources/COVID-19/serology/Serology-based-tests-for-COVID-19.html
Rapid Testing	https://www.ecdc.europa.eu/sites/default/files/documents/Overview-rapid-test-situation-for-COVID-19-diagnosis-EU-EEA.pdf
Imaging-General	https://www.rcseng.ac.uk/coronavirus/joint-guidance-for-surgeons-v2/
Imaging- CT	https://www.rcr.ac.uk/college/coronavirus-covid-19-what-rcr-doing/clinical-information/rcr-position-role-ct-patients
Resource Allocation	https://www.facs.org/covid-19/clinical-guidance/elective-case
Perioperative / PPE	https://www.apsf.org/news-updates/perioperative-considerations-for-the-2019-novel-coronavirus-covid-19/
Anesthesia	https://icmanaesthesiacovid-19.org/
Smoke evacuation	https://www.sages.org/resources-smoke-gas-evacuation-during-open-laparoscopic-endoscopic-procedures/
Laparoscopy	https://www.sages.org/recommendations-surgical-response-covid-19/