# *The interface between surgery and gastroenterology in IBD*

## *Introduction*

Inflammatory bowel disease (IBD) is complex, with a range of presentations and issues requiring a nuanced approach to optimise management. It is helpful for the surgeon and gastroenterologist involved in the care of a patient to have a shared mental model and understand (as much as possible) the roles and practices of the other team members. Surgery in IBD should represent a 'tool in the armamentarium of care' rather than 'failure of medical management'.

## *Indications for surgery*

### *Acute/Emergent*

- Patients presenting with acute obstruction or perforation should be evaluated by a surgeon to consider whether surgery is appropriate, particularly if complete obstruction or ischaemia is suspected.
- Patients presenting with acute, severe colitis should be under daily review of both gastroenterology and surgery. Early consultation with surgery should be undertaken to both facilitate effective communication with the patient and optimise the decision making regarding the need for, and timing of, surgery.
- Acute presentation with perianal sepsis requires an examination under anaesthesia with wide drainage of any collections (with or without seton placement). Magnetic resonance imaging (MRI) should be reserved for those in whom the clinical presentation is not consistent with operative findings or where there is a high risk of not identifying the extent of disease at surgery (eg. previous complicated disease).

### *Elective*

- Medically refractory colitis should be referred to colorectal surgery early for a discussion and education to ensure that the patient has time to learn about and process their treatment options before surgery is unavoidable. This also allows for time to optimise their condition and minimise complications.
- Patients with chronic colonic inflammation should enter surveillance as described in the national guidelines. Patients found to have any dysplasia should be discussed at a formal IBD MDM (or colorectal MDM if a dedicated IBD MDM is not available regionally) for consideration of appropriate management and ongoing surveillance recommendations.
- Localised ileocolic Crohn's disease presenting with obstruction but no inflammation should be considered for resection, while those with a significant inflammatory component may benefit from a trial of medical therapy first. Symptomatic penetrating or fistulating disease should be considered for early surgery. (1)

## *Optimisation for surgery*

There are a few things to consider in this process including planning the procedure itself as well as managing the physiology and psychology of the patient to minimise complications.

### *Imaging*

- **Acute luminal:** If patients present with an 'acute abdomen', cross-sectional imaging with computed tomography (CT) is generally indicated. This can usefully differentiate obstruction, perforation and provide a general 'roadmap' pre-operatively.

- **Elective luminal:** in the elective setting, magnetic resonance imaging (MRI)/ enterography (MRe) can provide a lower radiation burden in young patients.
- **Perianal disease:** In the acute setting, patients do not necessarily require an MRI, but may proceed directly to examination under anaesthesia. MRI (perianal fistula protocol) is a useful adjunct where the symptoms do not correspond with operative findings. This should be discussed with the treating surgeon as it is useful to approach the radiologist with a specific question to be answered.

### *Nutrition*

- One of the single biggest risk factors for post-operative complications is malnutrition. Various strategies are available to mitigate this depending on the situation. Ideally, a dietician should be involved early to provide support (either supplementing or replacing their nutritional intake) in order to optimise their nutritional and inflammatory state. If this is not possible (eg in the emergent situation), then staged procedures may be required.

## *Peri-operative medications*

### *Pre-operative agents*

- **Corticosteroids** are associated with increased risk of post-operative complications (including surgical site infection, anastomotic leak and intra-abdominal collections).(2, 3) Where possible, corticosteroid dose should be weaned to <20mg prednisone per day. Staged procedures or intestinal diversion may be considered to mitigate risk where this is not feasible, especially in the context of other risk factors such as malnutrition, smoking and anaemia. Prolonged steroid use may pre-dispose to adrenal insufficiency and 'stress-dosing' has historically been practised, however providing patients with the equivalent of their baseline maintenance dose is probably sufficient to prevent complications.(4, 5)
- **Immunomodulators** such as 6-mercaptopurine, methotrexate and azathioprine, are commonly used either as single-agents or in combination with biologic therapy for the treatment of IBD. The use of these agents is not associated with an increase in post-operative complications, and they may be safely continued until surgery. (6, 7)
- **Anti-TNF agents** including infliximab and adalimumab have been a source of anxiety for surgeons. However, a multi-centre prospective observational study (PUCCINI) including 947 patients has now been published showing no difference in the rate of infectious complications between those receiving anti-TNF drugs compared to those who did not, irrespective of drug levels.(8) This is consistent with a large meta-analysis of 18 non-randomised trials published in 2019.(9) The current recommendation is to continue these to the time of surgery as most patients' symptoms will flare with withdrawal and there is no proven benefit.(5)
- **Vedolizumab and Ustekinumab** are relatively new to the New Zealand market, however international data does not show an increase peri-operative complications associated with their use.(10, 11) European guidelines do not recommend stopping these drugs pre-operatively; in addition, selective primary anastomosis is considered reasonable provided the others risks for anastomotic failure are appropriately evaluated.(5)

### *Post-operative*

- **Venous thromboembolism (VTE) prophylaxis**: IBD patients undergoing surgery have a comparable rate of VTE to patients undergoing surgery for colorectal cancer at about 4.3% at 90 days.(12) Routine use of prophylactic dose low molecular weight heparin is recommended. Particularly high-risk patients may be suitable for extended VTE prophylaxis (emergency surgery, smoking, obesity, high duration of surgery).(13)

- **Preventing Recurrence:** Almost a third of patients undergoing resection for Crohn's disease will require a further resection; (14) endoscopic recurrence after resection occurs in two thirds of patients within the first 18 months. Smoking increased the risk of endoscopic recurrence (OR 2.4, 95% CI 1.2-4.8, p=0.02). Early colonoscopy at 6 months with escalating treatment (if endoscopic recurrence was identified), reduced endoscopic recurrence at 18 months. (15) Post-operatively, a 3-month course of imidazole antibiotics has shown a reduction in endoscopic recurrence (OR 0.31; 95% CI 0.10-0.94).(16) The side effect profile of this limits its use; more recently, low dose metronidazole (250mg PO TDS for 3 months) has been trialled and demonstrated a better tolerability and a reduction in both recurrence and severity of endoscopically evaluated Crohn's.(17)

***Table 1. Peri-operative medication management***

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| **Corticosteroids** | ***Pre-operatively***<br>If possible: reduce to <20mg prednisone/day<br>If not: consider staged surgery in context of other risk factors<br><br>***Peri-operatively***<br>Stress-dosing not necessary<br>Continue equivalent maintenance dose |
| **Immunomodulators** | Continue to surgery |
| **Anti-TNF** | Continue to surgery |
| **Vedolizumab/Ustekinumab** | Continue to surgery<br>Consider staged procedure depending on other risk factors |

***Table 2. Post-operative medication management***

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| **Venous Thromboembolism Prevention** | Prophylactic low molecular weight heparin during admission<br>Consider extended prophylaxis for high risk patients |
| **Recurrence prevention post-Crohn's resection** | Smoking cessation (when relevant)<br>Metronidazole 250mg PO TDS 3 months (if no contra-indications) |

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