Mistakes in colonoscopic surveillance in IBD and how to avoid them

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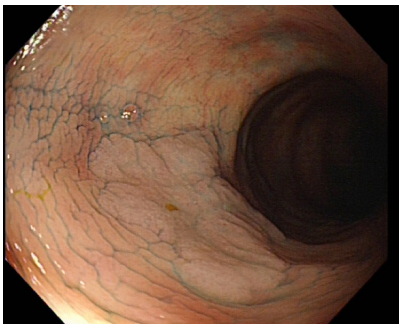
The diagnosis and management of colorectal cancer in patients who have inflammatory bowel disease (IBD) is fraught with challenges and the subject is not without controversy. Optimal management requires a thorough knowledge of both diseases as well as the benefits and limitations of colonoscopic surveillance, careful IBD control, high-quality colonoscopy, robust surveillance booking mechanisms, empathic patient education and excellent communication across the multidisciplinary team looking after the patient. Make a mistake and your patient might be subjected to unnecessary life-changing surgery or exposed to an avoidably high lifetime risk of cancer.

Here I discuss the mistakes that are often made when managing patients undergoing colitis surveillance. The discussion is evidence based, but where evidence is lacking, the discussion is based on my personal experience of more than 20 years in the field.



Mistake 1 Forgetting that people with IBD have an increased risk of CRC

Most people who develop colorectal cancer (CRC) do not have inflammatory bowel disease (IBD), so clinicians will encounter far more non-colitic cases of CRC. Many endoscopists and clinicians therefore fail to appreciate the magnitude of the problem of colitis-associated CRC. There is, however, clear evidence that people with ulcerative colitis and Crohn's colitis have a two- to three-fold increased risk of developing CRC compared with the general population.[1,2]

Reassuringly, with improving colonoscopic technologies and techniques, together with improving IBD therapies, the complication of colitis-associated CRC has reduced over time, as shown by some (but not all) studies.[3,4] However, there is consistent evidence of a substantially higher risk of postcolonoscopy CRC (PCCRC) in patients with IBD compared with the general population — the cause is probably multifactorial due to the increased difficulty in detecting premalignant lesions, the increased complexity in resecting these lesions and accelerated cancer biology.[5]

Mistake 2 Assuming the CRC risk is the same for all people who have IBD and not following colitis surveillance guidelines recommendations

Not all people with IBD have the same CRC risk. An important additional risk factor for CRC is coexistent primary sclerosing cholangitis (PSC).[6,7] A Danish population-based study found the relative risk of CRC with coexisting PSC was 9.13 in ulcerative colitis and 2.90 in Crohn's disease, when compared with the risk of CRC for IBD patients without PSC.[7] The exact mechanism for this is unclear, but it appears to be independent of inflammation: many people with PSC have quite mild colonic disease.

The other main risk factors for CRC in IBD relate to inflammation, including the amount of the colon that is inflamed, the duration of inflammation and the severity of inflammation.[8] I have a particular concern about those who have chronic active inflammation — in my experience, many of these patients have, for whatever reason, failed to remain engaged with clinical services and have tolerated chronic symptoms.[9] Unfortunately, often by the time they re-present, their inflammatory disease can be difficult to control and sometimes it may be the development of cancer that triggers re-presentation to clinical services. This is why it is particularly important to have robust recall mechanisms for all patients who have IBD and to provide them with a highly patient-centred, evidence-based service, with excellent levels of patient communication and education. Conversely, people who have a minimal disease extent (for example, isolated proctitis or no more than single-segment Crohn's disease) have a much lower risk of CRC.[10]

When assessing patients who have IBD, it is therefore important to take these additional risk factors into consideration (figure 1) before determining the necessity of colonoscopic surveillance and the appropriate surveillance strategy. Modern colitis surveillance guidelines take these factors into account, and offer stratified surveillance intervals (e.g. 1, 3 or 5 years) accordingly.[11,12]

Mistake 3 Selecting an inexpert endoscopist to perform colitis surveillance colonoscopies

Choose your endoscopist carefully! Colitis surveillance colonoscopies are the most challenging diagnostic colonoscopic procedures. Not only are premalignant lesions variable and subtle in appearance, but the background mucosa is also often affected by acute inflammation and chronic postinflammatory changes such as postinflammatory polyps or scarring. It can therefore be particularly challenging for the endoscopist to discriminate the wide range of neoplastic appearances from the wide range of normal appearances.

Separate from this, patients in colitis surveillance programmes are likely to require

Risk factors for colorectal neoplasia

- Primary sclerosing cholangitis
- Factors relating to inflammation
  - Increasing severity of inflammation
  - Extensive colitis
  - Longer duration of disease
  - Endoscopic features of previous severe or chronic active inflammation, including post-inflammatory polyps, strictures and shortened, tubular colonic appearance
- Previous colorectal neoplasia
- Family history of CRC in a first-degree relative, especially if <50 years old

Other possible risk factors

- Male sex
- Young age at IBD onset (probably a composite [non-independent] risk factor)

Figure 1 | Risk factors for colorectal neoplasia.

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multiple colonoscopies throughout their lifetime. The effectiveness of colitis surveillance depends greatly on patient compliance with guidelines. If a patient has an unpleasant colonoscopy experience, their likelihood of returning for subsequent surveillance procedures or, worse still, attending further clinic appointments is reduced. It is therefore paramount that patients are protected from unnecessary colonoscopies and that they have a high-quality, comfortable colonoscopy surveillance procedure to maximise future compliance.

Mistake 4 Failing to optimise conditions for high-quality endoscopic surveillance

As colitis surveillance procedures are challenging and it is extremely difficult to discriminate between inflammatory/post-inflammatory changes and neoplastic changes, it is important that patient preparation is optimised, that a careful inspection technique is employed and that the highest definition endoscopic equipment is used for surveillance.

Wherever possible, surveillance should be performed when a patient's colitis is quiescent, and it might sometimes be necessary to increase their disease-modifying medication to achieve this. However, that being said, it is important to remember that, as described above, patients who have chronic active disease have a particularly increased risk of CRC, hence these procedures should not be unduly delayed to achieve quiescence.

The use of high-definition endoscopes with digital enhancement is recommended.[13] Of course, there is no point using high-definition equipment if bowel preparation is poor, so particular attention should be given to using an effective bowel preparation regimen (previous reports should always be read to identify patients who might require enhanced bowel preparation). Furthermore, during the endoscopic procedure, additional water irrigation can help optimise bowel cleansing. I also use intravenous hyoscine on a regular basis, unless contraindicated, as this can suppress muscular tone, which reduces blind spots and peristalsis and therefore aides lesion detection. As with any diagnostic colonoscopy, a methodical, careful inspection technique is important.

Dye-spray colonoscopy adds another dimension to the complexity of the procedure for the endoscopist. In reality, learning how to apply the dye is not technically difficult; the real challenge is learning how to discriminate normal from abnormal findings. Although the application of dye sprays is cumbersome, there is consistent evidence that it increases the neoplasia yield.[13] Recent studies have shown that digital enhancement has closed the gap with dye spray detection, but, at present, I feel that dye spraying remains the gold standard, a view supported by a recent network meta-analysis.[14] That being said, if I had to choose between an expert endoscopist confident in digital image enhancement or an average endoscopist using dye spray, I would definitely choose the former — although I would, of course, prefer a combination of both!

Application of the dye requires additional time and it is important that this is accounted for when booking the patient. Dye-spray catheters help with circumferential application of the dye, but I now find that applying the dye using an irrigator pump is more time-efficient because it is simple to obtain circumferential coverage if the dye is applied to the antigravity wall. Excess dye should be suctioned prior to inspection, otherwise pools of dye may obscure pathology.

In the context of pancolonic dye-based chromoendoscopy or virtual chromoendoscopy, the ESGE (European Society of Gastrointestinal Endoscopy) recommends taking targeted biopsies of any visible lesions; additional random background biopsies (four-quadrant non-targeted biopsies every 10 cm) are only required in certain high-risk scenarios, including patients with previous colonic neoplasia, a tubular-appearing colon, strictures, ongoing therapy-refractory inflammation, or PSC.

Pre-procedure	• Have a clear understanding of why you're doing the procedure (discriminate colitis surveillance from assessment of IBD symptoms)
Procedure	• Perform a high-quality procedure and ensure all necessary aspects are covered • Take plenty of photos

Report	• Basic procedural information
	  • Write a detailed, clear, objective and understandable report (these are the most detailed endoscopy reports I write)
	  • Comprehensive standard colonoscopy report information, including intubation extent and bowel preparation quality
	  • Additional modalities used (e.g. chromoendoscopy)
	  • Technical intubation notes for next time (to maximise success/patient comfort)

	• Colitis-surveillance-specific information
	  • Describe segmental active inflammatory features — use indices, or their construct, as the basis for reporting inflammation, but also translate this into clinically useful language
	  • Describe segmental chronic features separately (e.g. postinflammatory polyps, scarring, strictures)
	  • Did you take biopsies? Where from? Was each biopsy targeted or random?
	  • Describe any lesions seen
	  • Use objective terminology (e.g. Paris, JNET/NICE classifications)
	  • Location
	  • Is the lesion well circumscribed?
	  • Clearly describe background mucosa appearance — whether the lesion is within an area of active inflammation, an area previously affected by inflammation, or in a non-colitic segment
	  • Was any therapy performed?

	• Provide additional follow-up recommendations to the patient and clinician

Figure 2 | Checklist for a colitis surveillance report.

Mistake 5 Producing a colonoscopy report that is not sufficiently detailed

It is important to produce a highly detailed colonoscopy report because, more than for any other procedure, this detailed information can substantially affect key clinical decisions. In addition to standard descriptors, such as bowel preparation quality and extent of examination, the endoscopist should describe the extent and severity of inflammation throughout the colon. Because there is so much variability in the description of inflammation, I recommend using an objective, validated score such as the Ulcerative Colitis Endoscopic Index of Severity (UCEIS).[15] Separate from the description of acute inflammation, the endoscopist should describe any chronic features such as scarring or postinflammatory polyps. Finally, the endoscopist should describe any potentially neoplastic features using standardised terminology, such as the Paris classification for morphology,[16] whether any lesions are well circumscribed, and whether the background mucosa is actively inflamed, quiescent or entirely normal (non-colitic). A checklist is provided in figure 2.

It is also important to describe carefully whether biopsies have been taken from apparently normal mucosa (random biopsies) or whether they were targeted towards a visible

lesion. A good endoscopy report should be supplemented with good quality images (or videos), which can be particularly helpful when determining optimal patient management.

Mistake 6 Not obtaining a second, expert histopathologist opinion when dysplasia is detected

The histological diagnosis of dysplasia in the context of colitis can be challenging for a pathologist. This is particularly true when there is active inflammation because inflammatory and regenerative changes can mimic dysplasia, which is another reason to try to suppress disease activity as much as possible prior to colonoscopy. Therefore, when a clinician receives a pathology report describing dysplasia, it is important to obtain a second opinion from an expert gastrointestinal histopathologist. This is a longstanding recommendation but is equally important today and, in my experience, can frequently change the management decision.

Mistake 7 Assuming that endoscopic therapy in patients who have colitis is easy

Whereas in the past, panproctocolectomy was recommended for patients with colitis-associated dysplasia, it is now recognised that many neoplastic lesions are amenable to endoscopic therapy. However, before the decision to use endoscopic therapy is made, a very careful review is required. It is important to repeat a high-quality colonoscopic assessment to ensure there are no synchronous lesions. During these procedures, I also take additional random biopsies from the background mucosa to ensure there is no endoscopically invisible neoplasia, as clearly this would totally change the management plan.

When assessing the actual lesion, it is important to assess its lateral margin — some lesions are poorly circumscribed and therefore challenging to remove endoscopically. Even if the lesion is well circumscribed, if it is within a segment of the colon that has either active inflammation or has previously been inflamed, there will often be submucosal fibrosis, which renders the lesion difficult to lift and resect. As with any endoscopic therapy, the best opportunity to resect the lesion fully is at the first attempt, so it is paramount that the resection of such lesions is only attempted by endoscopists experienced in complex polyp therapy.

That being said, the majority of dysplastic lesions that are seen in colitis surveillance will be small, well circumscribed, similar in appearance to sporadic adenomas and easy to resect en bloc with careful, standard polypectomy techniques. For these lesions, the mistake to avoid is overinterpreting their significance and subjecting the patient to unnecessary life-changing surgery.

The importance of the assessment and clinical decision is evident — get it wrong and a patient may either be needlessly subjected to major surgery or left with a high risk of developing CRC.

Mistake 8 Focusing on the lesion rather than managing the patient holistically

Finally, but importantly, clinicians must treat the patient rather than the endoscopic lesion, because the optimal management plans for two patients with identical endoscopic lesions might be completely different. For example, an older patient with quiescent colitis who has a well circumscribed, 15 mm sessile lesion in the transverse colon might be best managed by endoscopic resection of the lesion, whereas an identical lesion in a young patient with PSC might prompt a decision for early panproctocolectomy, owing to that patient's high lifetime risk of CRC. Multidisciplinary discussion and shared decision-making are, therefore, important cornerstones of optimal patient care.

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Your colorectal cancer and IBD briefing

UEG Week

- 'Colorectal cancer screening' session at UEG Week Virtual 2020 [https://ueg.eu/library/session/colorectal-cancer-screening/161/2666].
- 'Colorectal cancer' session at UEG Week Virtual 2020 [https://ueg.eu/library/session/colorectal-cancer/161/2752].
- 'Quality in screening colonoscopy' session at UEG Week Virtual 2020 [https://ueg.eu/library/session/quality-in-screening-colonoscopy/161/2715].
- 'Screening strategies in colorectal cancer: What's new in 2020?' session at UEG Week Virtual 2020 [https://ueg.eu/library/session/screening-strategies-in-colorectal-cancer-whats-new-in-2020/161/2777].
- 'Cancer and IBD' session at UEG Week 2018 [https://ueg.eu/library/session/cancer-and-ibd/153/1979].
- 'Intestinal and extra-intestinal cancers in IBD' session at UEG Week 2016 [https://ueg.eu/library/session/intestinal-and-extra-intestinal-cancers-in-ibd/144/1613].

Standards and Guidelines

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