Toward a Consensus on Endoscopic Surveillance of Patients with Colonic Inflammatory Bowel Disease

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**INTRODUCTION**

Endoscopic surveillance for colitis-associated colorectal neoplasia (CRN) and colorectal cancer (CRC) is recommended by multiple national and international guidelines. The primary goal of surveillance is to identify and remove pre-cancerous lesions to prevent the development of colorectal cancer. Surveillance is typically recommended for patients with ulcerative colitis (UC) and Crohn's disease involving more than 1 segment of the colon or at least one-third of the colon.

**KEYWORDS**

- IBD-associated colorectal neoplasia
- IBD-associated colorectal cancer
- Colitis surveillance
- Colonoscopy
- Chromoendoscopy

**KEY POINTS**

- All patients with ulcerative colitis (UC) and Crohn's colitis should be offered a screening colonoscopy 8 to 10 years after onset of disease symptoms to restage extent of disease and evaluate for endoscopic features that confer an increased risk for inflammatory bowel disease–associated colorectal neoplasia (IBD-CRN).
- Surveillance colonoscopy should be offered to UC patients with left-sided or extensive colitis (thus excluding patients with isolated proctitis), and for patients with Crohn’s colitis involving more than 1 segment of the colon or at least one-third of the colon.
- Patients with the highest risk of IBD-CRN should undergo annual surveillance. Lower-risk patients can undergo surveillance at less frequent intervals, every 2 to 5 years.
- European and Australian guidelines agree that dye-based chromoendoscopy with targeted biopsies maximizes detection of colorectal neoplasia during surveillance colonoscopy, and is the surveillance method of choice. Most United States guidelines endorse chromoendoscopy with targeted biopsy as an option for surveillance.
- Endoscopically visible lesions that are well circumscribed and amenable to endoscopic resection with no evidence of dysplasia in the surrounding flat mucosa or elsewhere in the colon are appropriate for continued colonoscopic surveillance.

**REFERENCES**

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The goal of endoscopic surveillance is to reduce the morbidity and mortality of CRC, by either detecting and resecting dysplasia or detecting CRC at earlier, potentially curable stages. Randomized controlled trials (RCTs) assessing the efficacy of surveillance colonoscopy in IBD have not been performed, and likely will not be performed. Case series, case-control studies, and population-based cohort studies suggest that use of surveillance colonoscopy is associated with an earlier stage of cancer diagnosis and improved CRC-related survival in IBD patients. Although a Cochrane analysis from 2006 concluded that there is no clear evidence that surveillance colonoscopy prolongs survival in patients with extensive colitis, a subsequent cohort study of 149 patients with IBD-associated CRC from the Netherlands, not included in the Cochrane analysis, found a 100% 5-year survival of 23 patients enrolled in a surveillance program before CRC detection, compared with 74% in a nonsurveillance group ($P = .042$). Of 30 CRC-related deaths during the study period (January 1, 1990 to July 1, 2006), only 1 patient was in the surveillance group compared with 29 in the nonsurveillance group ($P = .047$). It was also noted that 52% of patients in the surveillance group had Stage 0 to 1 CRC, compared with 24% in the nonsurveillance group ($P = .004$). In an exploratory cost-effectiveness model performed by the National Institute for Health and Clinical Excellence (NICE), colonoscopy surveillance was determined to be cost-effective for high-risk groups, which included IBD patients with any history of dysplasia, extensive active colitis, primary sclerosing cholangitis (PSC), strictures within the last 5 years, or family history of CRC before 50 years of age.

Thus, surveillance colonoscopy in patients with ulcerative colitis (UC) and Crohn’s colitis has been recommended by multiple societies in the United States (American Gastroenterological Society [AGA], American Society for Gastrointestinal Endoscopy multiple European societies (British Society for Gastroenterology [BSG], NICE, European Crohn’s and Colitis Organization [ECCO]), the [ASGE], American College of Gastroenterology [ACG], Crohn’s and Colitis Foundation of America [CCFA], multiple European societies [British Society for Gastroenterology (BSG), NICE, European Crohn’s and Colitis Organization (ECCO)], the Cancer Council of Australia [CCA], the New Zealand Guidelines Group, and the North American Society for Pediatric Gastroenterology, Hepatology and Nutrition [NASPGHN]). However, recommendations differ in regards to timing of initial screening colonoscopy, recommended surveillance intervals, optimal technique for dysplasia detection, and management of detected lesions and endoscopically invisible dysplasia. This article reviews current society guidelines, highlighting similarities and differences, in an attempt to form a general consensus on surveillance for patients with IBD, while drawing attention to controversial areas in need of further research.

**WHO SHOULD BE OFFERED SCREENING AND SURVEILLANCE FOR IBD-ASSOCIATED CRC?**

Most societies agree that all patients with a history of UC (even isolated proctitis) and Crohn’s colitis should be offered a screening colonoscopy approximately 8 to 10 years after the onset of clinical symptoms to re-stage extent of disease and evaluate for endoscopic features that confer a higher risk for IBD-associated CRN (IBD-CRN). The exception is the NICE guideline which recommends only offering colonoscopic surveillance to patients with Crohn’s colitis involving more than 1 segment of the colon or left-sided or more extensive UC, but not isolated ulcerative proctitis. All societies recommend that patients with PSC and UC should be enrolled in a surveillance program at the time of diagnosis.
During the initial screening examination, restaging biopsies are recommended to determine disease extent and severity. The extent of disease is defined by the maximum documented extent of disease on any colonoscopy. All societies recommend surveillance colonoscopy for UC patients with left-sided or extensive colitis (thus excluding patients with isolated proctitis),1–6,8 and for Crohn’s colitis involving more than 1 segment of the colon6,18 or at least one-third of the colon.2,3,5,8 The BSG considers patients with Crohn’s disease of less than 50% of colonic involvement, regardless of grade of inflammation, as lower risk, but does offer surveillance at the longest (5-year) intervals.1 The ACG guidelines recognize the possible increased risk of cancer in long-standing Crohn’s disease, but state that surveillance guidelines have yet to be defined, and do not endorse a screening or surveillance strategy.19

**Guidelines Summary**

- All patients with UC and Crohn’s colitis should be offered a screening colonoscopy to restage the extent of disease and evaluate for endoscopic features that confer a higher risk for IBD-CRN.
- Surveillance colonoscopy should be offered for UC patients with left-sided or extensive colitis (thus excluding patients with isolated proctitis), and for Crohn’s colitis involving more than 1 segment of the colon or at least one-third of the colon.

**WHEN SHOULD SCREENING BE INITIATED?**

Current guidelines base screening for IBD-CRN primarily on duration of disease. The risk of IBD-CRN increases over time, although estimates of risk vary in the literature. Meta-analysis of older studies estimated an increase in risk over time, with a cumulative CRC risk of 2% at 10 years, 8% at 20 years, and 18% after 30 years of colitis.20 More recent population-based studies have demonstrated a lower overall risk, from 2.5% at 20 years, to 7.6% at 30 years, and 10.8% at 40 years of extensive UC.21

These studies support initiating screening by 10 years of symptom onset, as recommended by the BSG1 and NICE,6 with most societies recommending initiating screening at 8 years2,8,18 or 8 to 10 years3–5 after symptom onset. However, recent population-based studies demonstrating that 17% to 35%22–24 of patients develop CRC before 8 to 10 years has prompted some societies to recommend earlier screening colonoscopy. The NASPGHN recommends initiation of screening 7 to 10 years after diagnosis.17 The 2012 Second European evidence-based consensus on the diagnosis and management of UC states that screening could be initiated 6 to 8 years after symptom onset, taking into consideration risk factors such as extent and severity of disease, history of pseudopolyps, family history, and age at onset.7

These recent studies demonstrating early IBD-CRN occurrence underscore the need for considering additional risk factors to optimize initiation of IBD-CRN screening. Risk stratification based on age at disease onset (both young age and older age appear to confer increased risk23,25), extent and severity of disease, family history, and pseudopolyps has been advocated by some of the societies, and is in need of further study for incorporation into the IBD surveillance guidelines.

**Guidelines Summary**

- Most society guidelines recommend initiating surveillance 8 to 10 years after disease onset; some recommend considering risk factors that may increase the risk for IBD-CRN, and warrant earlier surveillance.
HOW OFTEN SHOULD SURVEILLANCE COLONOSCOPY BE PERFORMED?

Optimal surveillance intervals have not been defined in prospective studies, and the societies differ on their recommended surveillance intervals after the index screening colonoscopy. In general, patients with the highest risk of IBD-CRN are recommended for annual surveillance, whereas patients with the lowest risk are recommended for less frequent surveillance intervals, varying from 2 to 5 years.

Risk factors for IBD-CRN include concomitant PSC, extensive colitis, active endoscopic or histologic inflammation, a family history of CRC in a first-degree relative before 50 years of age, personal history of dysplasia, presence of strictures on colonoscopy, and, possibly, gender (Table 1). With the exception of gender, all recent guidelines recommend annual surveillance for individuals with these high risk features (AGA, BSG, NICE, ECCO, CCA).

Normal-appearing mucosa on surveillance appears to be associated with a decreased risk of IBD-CRN, reduced to approximately that of the general population.34 The United States GI societies have not yet endorsed lengthening surveillance intervals beyond 3 years. BSG, ECCO, NICE and CCA recommend a risk-stratified approach to cancer surveillance, and increase the surveillance interval to 5 years in the lowest-risk patients (Table 2).

Severe active inflammation, prior dysplasia, and strictures are universally accepted as high-risk endoscopic features. Whereas the CCA8 suggests annual examinations for patients with multiple pseudopolyps and shortened colons, the BSG1 and the ECCO18 guidelines consider these patients for colonoscopies every 2 to 3 years. The CCA8 allows for a 5-year interval for surveillance in patients with 2 prior macroscopically and histologically normal colonoscopies, whereas the NICE6 and BSG1 consider patients with left-sided UC or Crohn’s disease of similar extent, regardless of degree of inflammation, appropriate for 5-year surveillance.

### Table 1

<table>
<thead>
<tr>
<th>Risk Factor</th>
<th>Risk of IBD-CRN</th>
<th>Authors, Ref. Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSC</td>
<td>OR 4.09, 95% CI 2.89–5.67</td>
<td>Soetikno et al,26 2002</td>
</tr>
<tr>
<td>Extensive colitis</td>
<td>Pancolitis associated with a SIR 5.6–14.8 compared with the general population</td>
<td>Ekbom et al,27 1990, Soderlund et al,28 2009, Beaugerie et al,24 2013</td>
</tr>
<tr>
<td>Active endoscopic inflammation</td>
<td>OR 2.54, 95% CI 1.45–4.44</td>
<td>Rutter et al,29 2004</td>
</tr>
<tr>
<td>Active histologic inflammation</td>
<td>OR 5.13, 95% CI 2.36–11.14 OR 2.56, 95% CI 1.45–4.54 HR 3.0, 95% CI 1.4–6.3 for mean inflammatory score</td>
<td>Rutter et al,29 2004, Rubin et al,30 2013, Gupta et al,31 2007</td>
</tr>
<tr>
<td>Family history of CRC &lt;50 y old</td>
<td>RR 9.2, 95% CI 3.7–23</td>
<td>Askling et al,32 2001</td>
</tr>
<tr>
<td>Personal history of dysplasia</td>
<td>LGD: 12-fold increased risk of developing advanced neoplasia and 9-fold increased risk of developing CRC</td>
<td>Thomas et al,33 2007</td>
</tr>
<tr>
<td>Strictures on colonoscopy</td>
<td>OR 4.62, 95% CI 1.03–20.8</td>
<td>Rutter et al,34 2004</td>
</tr>
<tr>
<td>Gender</td>
<td>Men: SIR 2.6, 95% CI 2.2–3.0 Women: SIR 1.9, 95% CI 1.5–2.3</td>
<td>Jess et al,25 2012</td>
</tr>
</tbody>
</table>

**Abbreviations:** CI, confidence interval; CRC, colorectal cancer; HR, hazard ratio; IBD-CRN, inflammatory bowel disease–associated colorectal neoplasia; LGD, low-grade dysplasia; OR, odds ratio; PSC, primary sclerosing cholangitis; RR, relative risk; SIR, standardized incidence ratio.
<table>
<thead>
<tr>
<th></th>
<th>Every Year: High Risk</th>
<th>Every 3 Years: Intermediate Risk</th>
<th>Every 5 Years: Low Risk</th>
</tr>
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<tbody>
<tr>
<td><strong>BSG, 1, 2010</strong></td>
<td>Moderate or severe endoscopic/histologic active inflammation</td>
<td>Mild endoscopic/histologic inflammation</td>
<td>No endoscopic/histologic active inflammation (histologic chronic or quiescent changes acceptable)</td>
</tr>
<tr>
<td></td>
<td>Stricture within the past 5 y</td>
<td>Presence of postinflammatory polyps</td>
<td>Left-sided colitis (any grade of inflammation)</td>
</tr>
<tr>
<td></td>
<td>Confirmed dysplasia within the past 5 y in a patient who declines surgery</td>
<td>Family history of CRC in first-degree relative &gt;50 y</td>
<td>Crohn’s colitis affecting &lt;50% surface area of the colon (any grade of inflammation)</td>
</tr>
<tr>
<td></td>
<td>PSC</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Family history of CRC in first-degree relative &lt;50 y</td>
<td></td>
<td></td>
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<tr>
<td><strong>NICE, 6, 2011</strong></td>
<td>Extensive ulcerative or Crohn’s colitis with moderate or severe active inflammation</td>
<td>Extensive ulcerative or Crohn’s colitis with mild active inflammation</td>
<td>Left-sided UC or Crohn’s colitis of similar extent</td>
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<tr>
<td></td>
<td>PSC</td>
<td>Postinflammatory polyps</td>
<td>Extensive but quiescent UC/Crohn’s colitis</td>
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<td></td>
<td>Colonic strictures in the past 5 y</td>
<td>CRC in first-degree relative &gt;50 y</td>
<td></td>
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<tr>
<td></td>
<td>Any grade of dysplasia in the past 5 y</td>
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<tr>
<td></td>
<td>CRC in first-degree relative &lt;50 y</td>
<td></td>
<td></td>
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<tr>
<td><strong>ECCO, 18, 2013</strong></td>
<td>Stricture or dysplasia detected within past 5 y</td>
<td>Every 2–3 y recommended</td>
<td>Neither intermediate- nor high-risk features</td>
</tr>
<tr>
<td></td>
<td>PSC</td>
<td>Extensive colitis with mild or moderate active inflammation</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Extensive colitis with severe active inflammation</td>
<td>Postinflammatory polyps</td>
<td></td>
</tr>
<tr>
<td></td>
<td>CRC in first-degree relative &lt;50 y</td>
<td>CRC in first-degree relative &gt;50 y</td>
<td></td>
</tr>
<tr>
<td><strong>CCA, 8, 2011</strong></td>
<td>Active disease</td>
<td>Inactive UC or Crohn’s colitis affecting more than one-third of the colon without any high-risk features</td>
<td>Two prior colonoscopies that were macroscopically and histologically normal</td>
</tr>
<tr>
<td></td>
<td>PSC</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>CRC in first-degree relative &lt;50 y</td>
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<td></td>
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<tr>
<td></td>
<td>Colonic stricture</td>
<td></td>
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<tr>
<td></td>
<td>Multiple postinflammatory polyps or shortened colon (endoscopic features of prior severe inflammation)</td>
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<td></td>
<td>Previous dysplasia</td>
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</table>

A minimum of 1 factor is needed to meet criteria defined as high, intermediate, or low risk.

**Abbreviations:** BSG, British Society for Gastroenterology; CCA, Cancer Council of Australia; ECCO, European Crohn’s and Colitis Organization; NICE, National Institute for Health and Clinical Excellence (UK); UC, ulcerative colitis.
Further study is needed to determine which endoscopic features confer the greatest risk of IBD-CRN, and whether limited inflammation or no inflammation is associated with the lowest risk of IBD-CRN. Additional consensus is needed on how to risk-stratify patients and the optimal surveillance intervals for high-, intermediate-, and low-risk patients, as these questions will likely not be answered in prospective studies.

**Guidelines Summary**

- Patients with the highest risk of IBD-CRN, which includes patients with UC and Crohn’s colitis with active extensive disease, PSC, prior history of stricture or dysplasia, or a first-degree relative with CRC before the age of 50, should undergo annual surveillance. Lower-risk patients can undergo surveillance at intervals of every 2 to 5 years.

**WHAT IS THE RECOMMENDED TECHNIQUE FOR DYSPLASIA DETECTION?**

The goal of surveillance colonoscopy is detection of CRN at its earliest, curable stages. Historically, dysplasia in IBD was thought to be completely flat and endoscopically undetectable, and random biopsies were recommended for dysplasia detection. One prospective study using a 4-quadrant random biopsy protocol every 10 cm calculated that if dysplasia was present in 5% of the colonic mucosa, 33 biopsies were required for histologic detection of dysplasia with 90% confidence. This standard was then endorsed by multiple societies.

Subsequent studies demonstrated that most dysplasia is in fact endoscopically visible, and that random biopsies are overall of low yield in comparison with targeted biopsies of endoscopically abnormal-appearing mucosa. Lesion detection is enhanced with dye-based chromoendoscopy using indigo carmine or methylene blue, as demonstrated in multiple RCTs. A recent meta-analysis calculated that chromoendoscopy with targeted biopsy is 8.9 times more likely to detect any dysplasia and 5.2 times more likely to detect nonpolypoid dysplasia than white-light endoscopy with random biopsy. The likelihood to miss dysplasia was 93% lower in colonoscopies performed with chromoendoscopy and targeted biopsy than with white-light and random biopsy, with a number-needed-to-test of 14 to detect 1 additional patient with dysplasia.

Other techniques for image enhanced endoscopy are under investigation, but data currently do not support their routine use. Narrow-band imaging has not demonstrated an increased yield for dysplasia detection during surveillance examinations when compared with chromoendoscopy or white-light endoscopy. Confocal laser endomicroscopy may have a role in the characterization of dysplasia once detected, but additional studies are needed.

At present, chromoendoscopy with targeted biopsies is the surveillance protocol of choice as endorsed by all recent European guidelines (BSG, NICE, ECCO), with the ECCO group further stating that, “if appropriate expertise for chromoendoscopy is not available, random biopsies should be performed; however this is inferior to chromoendoscopy in the detection rate of neoplastic lesions.” Societies in the United States have taken a more conservative approach. The CCFA 2004 guidelines endorse chromoendoscopy in appropriately trained endoscopists. The AGA 2010 guidelines state that chromoendoscopy with targeted biopsies is a reasonable alternative to white-light endoscopy for endoscopists experienced in this technique. The ACG guidelines state that the natural history of dysplastic lesions detected by chromoendoscopy is unknown, and that it is premature to endorse chromoendoscopy in low-risk patients without longer-term follow-up data. However, chromoendoscopy...
may be of value for the follow-up of “higher-risk” patients, such as those with known dysplasia or indefinite for dysplasia not undergoing colectomy, and to ensure that detected lesions are adequately resected. The ASGE IBD guidelines are currently under revision, but the recently published ASGE tissue-sampling guidelines endorse chromoendoscopy with targeted biopsies as an option to optimize dysplasia detection with standard white-light endoscopy when the expertise is available.

The BSG, NICE, and ECCO guidelines, while endorsing chromoendoscopy with targeted biopsies as the preferred surveillance technique, further state that the yield of random biopsies of normal-appearing mucosa is low.1,6,18 The CCA recommends obtaining histologic staging biopsies, as histologic inflammation is a risk factor for IBD-CRN and is used for risk stratification, but do not definitively state that random biopsies are not required.8 The CCA guidelines recommend that in cases where the yield of chromoendoscopy is reduced, such as with a poor preparation, significant postinflammatory polyps, or significant underlying inflammation, random mucosal sampling may be indicated.8

Almost all guidelines that endorse chromoendoscopy do so with the caveat “for appropriately trained endoscopists” or “when the expertise is available.” The New Zealand Guidelines Group,16 which overall endorses the NICE guidelines for surveillance in IBD, states that chromoendoscopy is not available in New Zealand and thus was not considered for the guidelines. It is now incumbent on the training programs and GI professional societies to train endoscopists in the use of chromoendoscopy for the optimal detection of polypoid and nonpolypoid neoplasia.9 The main utility of chromoendoscopy, as stated in the ECCO consensus document, is its ability to “highlight subtle changes in the architecture of the colonic mucosa,”18 thus increasing dysplasia detection. Chromoendoscopy can also highlight surface crypt architectural abnormalities, and has been used to guide management of detected lesions.44,45 Kudo pit-pattern classification can help to characterize detected lesions and their surrounding flat mucosa as having neoplastic (Kudo pit pattern III–V) or non-neoplastic (Kudo pit pattern I or II) architectural changes.46,47 However, inflammation with regenerative changes can result in Kudo type III or IV pit patterns18 and, although useful, pit-pattern classification cannot replace histologic evaluation.49

Although long-term data on the outcome of dysplasia detected by chromoendoscopy are lacking, the newest guidelines from the BSG, NICE, ECCO, and CCA agree that chromoendoscopy with targeted biopsies maximizes the yield of surveillance colonoscopy for dysplasia detection,1,6,8,18 which is currently the goal of IBD surveillance. Additional consensus is needed to determine whether there is a role for random biopsies or histologic staging biopsies during chromoendoscopy with targeted biopsy surveillance. Because histologic activity is used to risk-stratify patients in most of the guidelines, it seems prudent to take several biopsies during surveillance colonoscopy even if no targeted biopsies are obtained. How many are required, and whether biopsies should be taken throughout the colon, have yet to be determined.

**Guidelines Summary**

- The goal of endoscopic surveillance in IBD is to reduce the morbidity and mortality of CRC, by either detecting and resecting dysplasia or detecting CRC at an earlier, potentially curable stage.
- The most recent European and Australian guidelines suggest that to maximize the yield of surveillance colonoscopy for dysplasia detection, chromoendoscopy with targeted biopsies is the surveillance method of choice (Table 3). Random biopsies of normal-appearing mucosa are of low yield.
- Histologic staging biopsies may be required for risk stratification of patients.
<table>
<thead>
<tr>
<th>Table 3</th>
<th>Society guidelines for detected dysplasia</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Visible Dysplastic Lesion, Endoscopically Resectable with Negative Biopsies from Adjacent Mucosa</strong></td>
<td>Visible Dysplastic Lesion, Endoscopically Unresectable, or Biopsies from Adjacent Mucosa with Dysplasia</td>
</tr>
<tr>
<td>ECCO, 18 2013</td>
<td>Surveillance at 3 mo and then yearly, regardless of degree of dysplasia</td>
</tr>
<tr>
<td>CCA, 8 2011</td>
<td>Surveillance</td>
</tr>
<tr>
<td>BSG, 1 2010</td>
<td>Surveillance</td>
</tr>
<tr>
<td>ACG, 4 2010</td>
<td>Surveillance</td>
</tr>
<tr>
<td>AGA, 2 2010</td>
<td>Adenoma-like DALM: surveillance (6 mo)</td>
</tr>
<tr>
<td>ASGE, 5 2006</td>
<td>Surveillance</td>
</tr>
<tr>
<td>CCFA, 3 2005</td>
<td></td>
</tr>
</tbody>
</table>

**Abbreviations:** ACG, American College of Gastroenterology; AGA, American Gastroenterological Society; ASGE, American Society for Gastrointestinal Endoscopy; BSG, British Society for Gastroenterology; CCA, Cancer Council of Australia; CCFA, Crohn’s and Colitis Foundation of America; DALM, dysplasia-associated lesion or mass; ECCO, European Crohn’s and Colitis Organization; GI, gastrointestinal.
• In situations where the performance of chromoendoscopy is reduced (eg, poor preparation, significant postinflammatory polyps, significant underlying inflammation) or expertise is unavailable, multiple random biopsies with targeted biopsies of white-light detected lesions remains an acceptable alternative.

**HOW SHOULD DETECTED DYSPLASIA BE MANAGED?**

Older guidelines recommended categorizing detected lesions as sporadic adenomas if found outside an area of known colitis, or as a dysplasia-associated lesion or mass (DALM) if detected within an area of colitis.9 DALMs were further subcategorized as adenoma-like, if they were raised lesions with an endoscopic appearance of a sporadic adenoma, or non–adenoma-like.2 Adenoma-like DALMs were amenable to endoscopic resection with close follow-up, whereas non–adenoma-like DALMs were considered an indication for surgery. Colectomy was additionally indicated for high-grade dysplasia detected by random biopsy, and multifocal low-grade dysplasia detected on random biopsy.

Long-term follow-up of endoscopically resected raised dysplastic lesions has been reassuring, with a recent meta-analysis demonstrating a low risk of IBD-CRN following resection of polypoid dysplasia.50 The use of chromoendoscopy and other image-enhancing techniques not only enhances dysplasia detection, it can also help to delineate lesion borders and facilitate lesion characterization to determine whether a detected lesion is endoscopically resectable or not.9,44,45

In this era of image-enhanced endoscopy, a simplified management approach to detect dysplastic lesions is now recommended. Although the terminology is evolving, the newest ECCO consensus guidelines recommend characterizing dysplasia as endoscopically visible or nonvisible.18 Nonvisible dysplasia refers to dysplasia detected by random biopsy and not associated with an endoscopically visible lesion. According to these ECCO consensus guidelines, well-circumscribed lesions that appear to be endoscopically resectable should be completely resected by an experienced endoscopist, regardless of underlying colitis or grade of dysplasia. If complete resection is achieved with negative biopsies from the flat mucosa immediately adjacent to the polypectomy site, and no dysplasia is found elsewhere in the colon, close endoscopic surveillance, preferably with chromoendoscopy, at 3 months and then at least annually is appropriate. An unresectable lesion or a lesion with dysplasia in the adjacent mucosa is an indication for colectomy. If dysplasia is not associated with a visible lesion, but is found on random biopsy, repeat evaluation with chromoendoscopy by an experienced endoscopist is warranted to assess for a visible and resectable dysplastic lesion and to evaluate for synchronous dysplasia; in this case, random biopsies may be indicated.18

These guidelines highlight that the most important feature of well-circumscribed, detected lesions is endoscopic resectability, with confirmation that adjacent mucosa is negative for dysplasia. Older guidelines follow similar recommendations using different terminology.

The definition of endoscopic resectability will continue to evolve. Consensus is needed to standardize the terminology of detected dysplastic lesions and dysplasia detected by random biopsies not associated with an endoscopically visible lesion. Additional consensus is required to determine optimal surveillance after a dysplastic lesion is resected, and how or if the degree of dysplasia should influence the surveillance interval. While endoscopically invisible high-grade dysplasia is universally considered an indication for colectomy, the approach to low-grade dysplasia needs further clarification.
Guidelines Summary

- Endoscopically visible lesions that are well circumscribed and amenable to resection, with no evidence of dysplasia in the surrounding mucosa or elsewhere in the colon on nontargeted biopsies, are appropriate for continued colonoscopic surveillance.
- Endoscopically invisible high-grade dysplasia, detected by random biopsy alone, is an indication for colectomy.
- Societies differ in their recommendations for endoscopically invisible low-grade dysplasia.

SUMMARY

Surveillance colonoscopy is indicated in patients with left-sided or extensive UC, and in patients with Crohn’s colitis with involvement of more than 1 colonic segment. The goal of surveillance is to detect dysplasia and to prevent IBD-CRN. Risk factors for IBD-CRN that influence screening and surveillance intervals require further study. To maximize dysplasia detection, European society guidelines endorse chromoendoscopy with targeted biopsies, although societies in the United States have yet to endorse chromoendoscopy as the preferred method for IBD-CRN surveillance. The European guidelines endorsing chromoendoscopy do not require random biopsies of normal-appearing colonic mucosa. However, the role of random biopsies for dysplasia detection needs to be clarified in the setting of inflammation or in areas of pseudopolyps, when the yield of chromoendoscopy may be decreased. Although histologic staging is important for the risk stratification of patients in almost all guidelines, the number of biopsies required and where they should be obtained needs further clarification. Most guidelines agree that well-circumscribed endoscopically detected dysplasia amenable to resection, with no evidence of dysplasia in the surrounding mucosa or elsewhere in the colon, is appropriate for surveillance. However, the definition of endoscopic resectability will continue to evolve, and consensus is needed for both the terminology and the approach to endoscopically visible and nonvisible dysplasia.

REFERENCES


