Communication from the ASGE Publications Committee

LEADING EDGE

The use of chromoendoscopy for surveillance of inflammatory bowel disease

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ASGE Leading Edge is an online publication that provides the latest clinical information on gastrointestinal endoscopy in an easy-to-read format. A case review, clinical review, or pro/con/moderator format will be featured on a quarterly basis. This publication was developed by the ASGE Publications Committee, and your feedback is encouraged. Contact us at asgeleadingedge@asge.org.

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Note: *For debate purposes, the pro and con positions for patient management will be taken by the invited authors. However, actual decisions regarding patient care must involve discussion of the risks and benefits of each treatment considered.*

CASE PRESENTATION

Case Presenter
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A 73-year-old white man with pancolonic ulcerative colitis diagnosed 22 years ago was referred for a second opinion. He is currently taking mesalamine 1.5 grams twice daily and is asymptomatic. At routine outpatient follow-up 1 month ago, he had a simple clinical colitis activity index of zero.

His last surveillance colonoscopy 1 year ago was a high-definition (HD) white-light examination without chromoendoscopy. The colon preparation was deemed adequate, with a Boston Bowel Preparation Scale of 8. The result of this examination was significant for mild friability, erythema, and a decrease in vascularity noted in a contiguous pattern extending to 20 cm proximal to the anal verge, with a Mayo endoscopic subscore of 1. There were also 2 polyps, which were resected. The first polyp was a 20-mm sessile polyp surrounded by normal-appearing mucosa 50 cm from the entry site, which pathologic analysis revealed to be a tubular adenoma. The second polyp, located at 25 cm from the entry site, measured 10 mm, which pathologic analysis identified as an inflammatory polyp. The patient underwent 4-quadrant surveillance biopsies at 10-cm intervals, with 1 biopsy specimen at 40 cm being suggestive of low-grade dysplasia on pathologic review.

He had undergone no prior abdominal surgeries and had no family history of colon cancer. The patient is a nonsmoker. Laboratory testing revealed normal red blood cell indices and a normal basic metabolic panel.

The patient is reluctant to undergo any major operation and was referred to you to consider performing a repeated colonoscopy with chromoendoscopy for further evaluation of the incidental finding of low-grade dysplasia on his last examination.

*Drs Lichtenstein and Picco contributed equally as lead authors.

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PRO
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Proceed with chromoendoscopy after dysplasia confirmed by a second pathologist

Chromoendoscopy is an exciting technique that can improve dysplasia detection in ulcerative colitis. It is simple, is easy to learn, and can increase dysplasia detection rates up to 4-fold. However, despite its advantages, I cannot recommend chromoendoscopy for all patients who undergo dysplasia surveillance for ulcerative colitis or Crohn's colitis. We just do not yet have adequate long-term follow-up of all patients in whom dysplasia is detected to determine whether colorectal cancer risk is decreased.

I limit chromoendoscopy to high-risk patients with ulcerative colitis or Crohn's colitis only, in whom the likelihood of finding a clinically meaningful lesion would be high. This includes patients with a history of dysplastic lesions/adenomas, those with a strong family history of colorectal cancer, or those who have primary sclerosing cholangitis. In this setting, chromoendoscopy not only enhances lesion detection but also allows for better assessment of endoscopic resectability. For lesions with distinct margins and no overt signs of malignancy, endoscopic resection with follow-up at close intervals appears to be safe, with avoidance of colectomy.

CON
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There is not a compelling case for using chromoendoscopy on this patient

To demonstrate the benefit of chromoendoscopy to patients, it is necessary to show its superiority over conventional HD white-light endoscopy in an appropriately controlled fashion. In conventional colonoscopy, several factors have been demonstrated to affect the adenoma detection rate, including endoscopic withdrawal time, adequacy of the preparation, and maneuvers with the endoscope (including second view and retroflexion), among others. To date there have been no appropriately controlled trials in which chromoendoscopy has been demonstrated to be superior to conventional HD white-light endoscopy.

Question 1: Does dye spray chromoendoscopy offer any added advantage in surveillance of inflammatory bowel disease (IBD) compared with a routine white-light, HD examination, and would you offer it to this patient?

PRO
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Chromoendoscopy is the preferred method for dysplasia surveillance in chronic ulcerative colitis based on the Surveillance for Colorectal Endoscopic Neoplasia Detection and Management in Irritable Bowel Disease (SCENIC) guidelines[1] because of its superiority to white-light colonoscopy.[2,3] Unfortunately, the majority of studies that demonstrated its superiority compared it with standard-definition (SD) white-light colonoscopy. Whereas the findings at SD chromoendoscopy predicted dysplasia-free outcome or colectomy in nearly 28 months of follow-up in 1 study,[4] overall longitudinal data are scarce, and HD colonoscopy is the new norm.

High-definition colonoscopy increases dysplasia detection in ulcerative colitis nearly 3-fold compared with SD.[5] The SCENIC guidelines only "suggested" but not "recommended" that chromoendoscopy be used with HD colonoscopy for surveillance of all ulcerative colitis patients. This is based on 1 observational study we published in which dysplasia detection was increased more than 2-fold.[6] Unfortunately, subsequent observational studies[7-9] and randomized trials[10,11] have presented conflicting results. Given this controversy, we perform HD chromoendoscopy only on high-risk patients because we believe they are most likely to benefit from the procedure. We define high risk as having a history of dysplasia or being otherwise at high risk for colorectal cancer. These include patients with history of primary sclerosing cholangitis, strong family history of colorectal cancer, or who have multiple pseudopolyps where dysplasia would be difficult to detect.

We know dysplasia can be multifocal based on the St. Marks experience, where one third of patients with colorectal cancer had a synchronous colorectal cancer or dysplasia at a different colon location at colectomy.[9] For the patient described in this case presentation, even in the absence of dysplasia found on random biopsy, we would perform chromoendoscopy because of the prior large adenoma found.

Surveillance recommendations do not apply to this patient because dysplasia was already found on random biopsy ("invisible dysplasia") after white-light colonoscopy without chromoendoscopy. Regardless of whether it was found with SD or HD, the finding of low-grade dysplasia should be confirmed by a second pathologist, and the patient should not be referred for colectomy. He should undergo HD chromoendoscopy by an endoscopist with experience in the technique. This would provide, with use of the best technology available, a higher likelihood of finding a discrete lesion that can be safely removed and avoiding surgery. If a lesion is found and then removed, his prognosis is excellent. He has a very low likelihood of the