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Prevalence of sessile serrated adenoma/polyp in hyperplastic-appearing diminutive rectosigmoid polyps

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Background and Aims: The American Society for Gastrointestinal Endoscopy recommends that distal colon hyperplastic lesions can be left in place without resection if adenomatous histology can be excluded with >90% negative predictive value. However, some lesions could be sessile serrated adenomas/polyps (SSA/Ps), which is also precancerous. The aim of this study was to describe the prevalence of SSA/Ps in hyperplastic-appearing diminutive rectosigmoid polyps.

Methods: We prospectively placed 513 consecutive diminutive rectosigmoid polyps that appeared hyperplastic to an expert endoscopist in individual bottles for pathologic. Each polyp was examined by 3 expert GI pathologists.

Results: The prevalence of SSA/P in the study polyps ranged from .6% to 2.1%. The lowest negative predictive value found by the endoscopist for the combination of adenomas plus SSA/Ps was 96.7%.

Conclusions: The prevalence of SSA/Ps in diminutive rectosigmoid hyperplastic-appearing polyps is very low. These results support the safety and feasibility of a “do not resect” policy for diminutive hyperplastic-appearing rectosigmoid polyps. (Gastrointest Endosc 2017;85:622-7.)

Approximately 20% to 30% of colorectal cancers arise through the serrated pathway.¹ Subcategories of serrated lesions include hyperplastic polyps (HPs), sessile serrated adenomas/polyps (SSA/Ps; sessile serrated polyp and

Abbreviations: ASGE, American Society for Gastrointestinal Endoscopy; CI, confidence interval; HP, hyperplastic polyps; NICE, Narrow Band Imaging International Colorectal Endoscopic Classification; NPV, negative predictive value; PIVI, Preservation and Incorporation of Valuable Endoscopic Innovations; SSA/P, sessile serrated adenoma/polyp; WASP, Workgroup serrated polypS & Polyposis.

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sessile adenoma are synonymous terms), and traditional serrated adenomas.¹ SSA/Ps and traditional serrated adenomas are considered precancerous lesions, whereas HP is generally considered not to be precancerous. Whether HPs are precursors of SSA/Ps remains uncertain. Because the prevalence of SSA/Ps is much higher than traditional serrated adenomas, SSA/P is the principal serrated precancerous lesion.²

Endoscopic differentiation of SSA/P from HP is challenging.² For example, the Narrow Band Imaging International Colorectal Endoscopic Classification (NICE) classification differentiates serrated lesions from conventional adenomas but makes no attempt to differentiate SSA/P from HP endoscopically.² Recently, the Workgroup serrated polypS & Polyposis (WASP) criteria have been validated for endoscopic differentiation of SSA/P from HP, but the success of these criteria in distinguishing HP from SSA/P among diminutive serrated lesions is uncertain.³ In general, the chance that a given serrated lesion is an SSA/P rather than an HP increases with lesion size and proximal colon location.^{1,4,5}

The issue of defining the prevalence of SSA/Ps within diminutive rectosigmoid polyps is assuming increasing importance. Anecdotally, we have observed a progressive rise in the frequency with which our pathologists diagnose

serrated lesions SSA/P rather than HP over the past decade, which likely reflects ever increasing awareness of SSA/P among practicing pathologists, and this is well documented.⁶ Also anecdotally, we have observed interpretations of SSA/Ps in rectosigmoid serrated lesions. The precise prevalence of SSA/Ps in diminutive rectosigmoid serrated lesions is of importance to both proposed and current strategies for management of diminutive rectosigmoid polyps at colonoscopy. For example, the American Society for Gastrointestinal Endoscopy (ASGE) proposed management scheme for diminutive rectosigmoid lesions that are deemed hyperplastic by image enhanced endoscopy, as expressed in the ASGE PIVI (Preservation and Incorporation of Valuable Endoscopic Innovations) document, recommends that such lesions can be left in place without resection if predicted to be nonadenomatous with a greater than 90% negative predictive value (NPV).⁷ However, the PIVI document does not precisely consider the prevalence of SSA/Ps within diminutive rectosigmoid serrated lesions. Arguably, the NPV of image-enhanced endoscopy should exceed 90% for conventional adenomas and SSA/Ps combined, because both are precancerous and would be expected to shorten surveillance intervals.⁸ A number of studies have examined the potential of image-enhanced endoscopy to provide adequate NPV for diminutive adenomas in the rectosigmoid colon.^{4,5,9-14} In some cases these studies did not include SSA/Ps with conventional adenomas in calculating NPV,^{5,12} did not designate precise numbers of SSA/Ps versus conventional adenomas in the distal colon,⁹⁻¹¹ or did not specify findings in the rectosigmoid¹³ or excluded SSA/Ps.¹⁴ None of the studies used additional expert assessment of pathology to determine how interobserver variability in SSA/P interpretation would affect the prevalence of SSA/Ps in distal diminutive polyps. Thus, the prevalence of SSA/Ps in diminutive rectosigmoid lesions that appear hyperplastic with image-enhanced endoscopy is low but not precisely defined.

Even in the absence of a formal do-not-resect paradigm for the management of diminutive rectosigmoid serrated lesions based on image-enhanced endoscopy, we considered that precise definition of the prevalence of SSA/Ps in diminutive rectosigmoid hyperplastic lesions was of importance to current practice. Thus, current endoscopic management of these lesions often involves a strategy of removing only a sample of these lesions. That is, when colonoscopists encounter a number of rectosigmoid diminutive lesions that appear endoscopically uniform and hyperplastic, they commonly remove only 1 or a few (and perhaps at times none) of these lesions.¹⁵ We suspect that in current practice, many distal hyperplastic-appearing lesions are frequently left alone and not even mentioned in colonoscopy reports.

To more precisely define the prevalence of SSA/Ps within diminutive rectosigmoid serrated lesions, we pro-

spectively removed 513 consecutively encountered lesions that were judged by image-enhanced endoscopy to be in the serrated class and submitted them in individual bottles for pathologic assessment. Further, we had each polyp slide reviewed by an expert GI pathologist at our institution (J.L.) and 2 outside experts in serrated polyp pathology (D.S. and R.O.).

METHODS

We prospectively undertook the study as a quality improvement project for our endoscopy unit. The basis for proceeding was collective agreement among our endoscopists that not all rectosigmoid lesions that appeared to be serrated (presumed to be hyperplastic) were being resected. We sought to establish the appropriateness and safety of current practice.

All colonoscopic procedures and polyp resections were performed by a single endoscopist (D.K.R.) over a 4-month interval from August 2015 to early December 2015. Patients were excluded if they had a known polyp syndrome (including familial adenomatous polyposis and serrated polyposis), inflammatory bowel disease, or surgical resection of any portion of the rectosigmoid colon.

All procedures were performed with high-definition 190 or 180 series colonoscopies (Olympus Corp, Center Valley, Pa). Polyps were usually identified in white light but always assessed in narrow-band imaging before resection. The NICE criteria were used to establish lesions as belonging to the serrated class (NICE type 1).²

We arbitrarily set the maximum number of diminutive serrated lesions to be resected from an individual patient as 5 from the rectum and 5 from the sigmoid. Therefore, the total maximum number of endoscopically predicted diminutive serrated lesions to be resected from a single patient was 10. Before resection in patients with multiple or numerous diminutive serrated class-appearing rectosigmoid lesions, the colonoscopist did an endoscopic overview of the sigmoid and rectum in an effort to select the 5 largest lesions within the diminutive class. No limit was placed on the number of endoscopically predicted serrated lesions 6 to 9 mm in size to be resected. Each lesion was resected either with a cold snare or a cold forceps, as appropriate for lesion size. In general, most lesions \leq 3 mm in size were resected with forceps. All lesions of all sizes were resected using cold techniques. Size was determined by comparison with the known size of the closed forceps or snare sheath or to the known size of the fully opened forceps or diminutive snare in the case of larger lesions.

To prevent over-charging patients for pathology specimens, the pathology department agreed to the following scheme. Patients were charged for 1 bottle for all diminutive rectal lesions regardless of the number of bottles (which varied from 1 to 5) of diminutive rectal lesions

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