

Endoscopy and Advanced Colorectal Polyps: Implications for Cancer Prevention

August 20, 2012

C Mason

Both sigmoidoscopy and colonoscopy are endoscopic procedures used for the primary prevention of colon cancer. It was previously assumed that colonoscopy would offer a screening advantage over sigmoidoscopy because it allows the rectum and entire colon to be visualized rather than the rectum and distal colon only. Yet, the results of several observational studies and clinical trials suggest that colonoscopy may be less effective at preventing cancer in the proximal colon than in the distal colon.

Biological differences between proximal and distal colon polyps and/or cancer, regional differences in the quality of the colon preparation, and insufficient endoscopist training have all been offered as possible explanations for why carcinomas in the proximal colon appear to be less affected by screening. However, Drs. Andrea Burnett-Hartman and Polly Newcomb, along with colleagues from the Public Health Sciences Division, Group Health, and the University of Washington, recently examined the association between prior endoscopy and different types of colorectal cancer precursor lesions in a case-control study conducted in a Group Health-based population of adults 50-79 years.

Specifically, the authors examined two types of colorectal polyps implicated in cancer development through biologically distinct pathways: advanced adenomas and sessile serrated polyps (SSPs). Advanced adenomas, often large in size or characterized by microscopic finger-like projections, are the precursor lesions that give rise to approximately 75% of all colorectal cancers and are the primary targets for colorectal endoscopic procedures. In contrast, sessile serrated polyps (SSPs) are flat colonic lesions typically located in the proximal colon, are characterized by basal crypt distortion and are thought to give rise to colorectal cancers via a "serrated polyp pathway."

Prior colon/rectal endoscopy was associated with a decreased odds of advanced adenomas [Odds Ratio (OR): 0.36, 95% Confidence Interval (CI): 0.26-0.50], but not SSPs [OR:0.80, 95%CI: 0.56-1.13], a finding that was consistent regardless of anatomical site. For the association between endoscopy and rectal/distal colon advanced adenomas, OR=0.38, 95% CI:0.26-0.56; for proximal colon advanced adenomas, OR=0.31, 95% CI:0.19-0.52. However, no statistically significant associations were observed for SSPs regardless of anatomic site.

Thus, the results of this study suggest that, unlike previous observations for colorectal cancer, the effectiveness of endoscopy for detecting advanced adenomas and SSPs does not vary by anatomical site. Rather, endoscopy has very different consequences depending on polyp type. Because SSPs are mainly observed in the proximal colon, these results suggest that biological and microanatomic differences between precursors for proximal and distal colon cancers may be important factors in the reduced efficacy of endoscopy for proximal colon cancer prevention.

Although SSPs tend to be flat lesions that are more difficult to detect endoscopically compared to protruding polyps like advanced adenomas, awareness about their potential clinical importance and endoscopic detection rates have been increasing over time. It remains to be seen whether increased vigilance for SSPs results in greater endoscopic effectiveness and ultimately better prevention of proximal colon cancer.

[Burnett-Hartman AN, Newcomb PA, Phipps AI, Passarelli MN, Grady WM, Upton MP, Zhu LC, Potter JD.](#) (2012). Colorectal endoscopy, advanced adenomas, and sessile serrated polyps: Implications for proximal colon cancer. *The American Journal of Gastroenterology* 107:1213-1219.

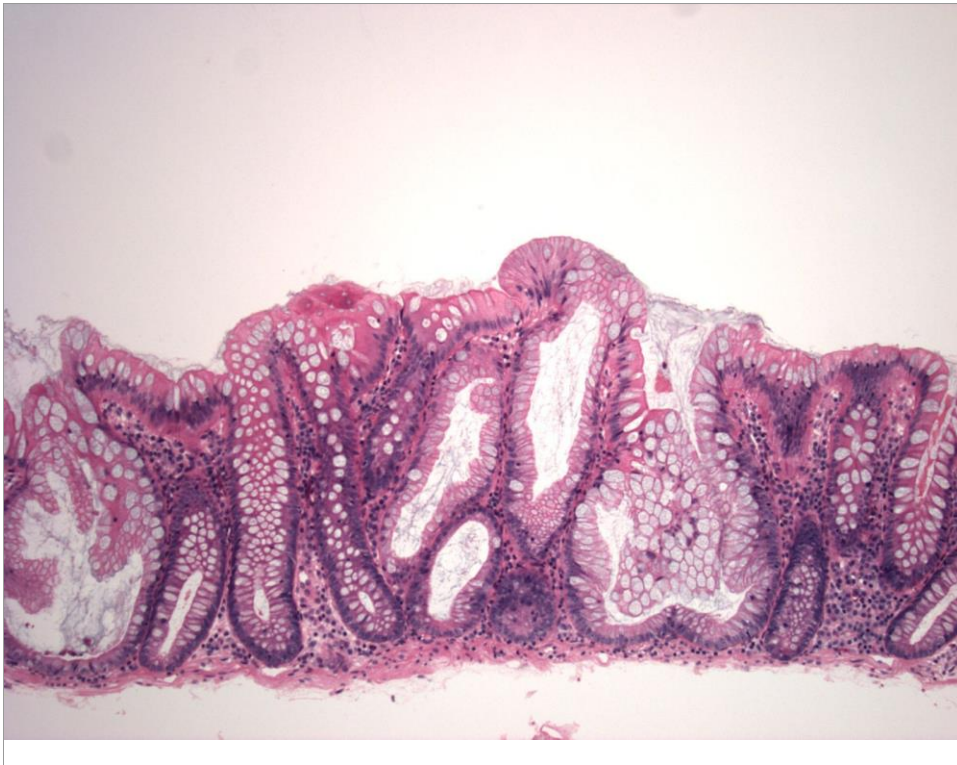


Image courtesy of author

Sessile serrated polyp as seen under a microscope.