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Inadequate Bowel Preparation Increases Missed Polyps

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See "The Effect of the Bowel Preparation Status on the Risk of Missing Polyp and Adenoma during Screening Colonoscopy: A Tandem Colonoscopic Study" Sung Noh Hong, In Kyung Sung, Jeong Hwan Kim, et al., on page 404-411

Recently, the demand of colonoscopy has been increasing rapidly due to the social interest for screening of colorectal cancer (CRC). This phenomenon is associated with the fact that colonoscopy is the most useful method for the detection and removal of colorectal polyps and that colonoscopic polypectomy significantly reduces the incidence and mortality of CRC.^{1,2} Although there are several screening modalities available for CRC, colonoscopy is considered the most effective method due to the ability of immediate polypectomy and biopsy of abnormal findings. Despite these remarkable features, the effectiveness of colonoscopy on the unconverted mortality of proximal colon cancer and the development of interval cancer are still in question. In addition, previous tandem colonoscopy studies reported the miss rates ranging from 12% to 24% for overall adenomas and between 0% and 6% for adenomas of ≥ 1 cm.^{3,4} Although most colonoscopists already expect that polyps can be missed during colonoscopy, these results suggest that colonoscopy is no more infallible for the detection of colorectal neoplasms.

In order to obtain clear image during colonoscopy, adequate colon preparation, defined as the ability to detect polyps of 5 mm or larger,⁵ is essential. If bowel preparation is poor, it leads to prolonged examination time, incomplete procedure, and more importantly, missed significant lesions. Suboptimal bowel preparation has actually taken considerable portions of all colonoscopic examinations. Recently, two studies investigated the relationship between missing polyps and suboptimal bow-

el preparation.^{6,7} The results of these two studies suggested that suboptimal preparation at index colonoscopy for screening induced increased adenoma miss rate (AMR) and advanced adenoma miss rate (AAMR) despite having reached the current target adenoma detection rate (42% and 27%, 47.9% and 18%, respectively). Also, Chokshi et al.⁷ reported that 80% of missed advanced adenomas in patients with suboptimal preparation were located in the proximal colon. This result can be explained by the fact that missed adenomas on the right side of the colon have sessile morphology, which may be difficult to detect specifically after suboptimal bowel preparation.

In an article published in the *Clinical Endoscopy*, Hong et al.⁸ reported a study suggesting that the risk of missing polyps and adenomas during screening colonoscopy is significantly affected by the bowel preparation status and that the patients with poor/inadequate bowel preparation were independently associated with an increased risk of missed polyp, missed adenoma, and missed advanced adenoma compared to the patients with excellent bowel preparation. In this study, AMR and AAMR in patients with suboptimal (poor/inadequate) bowel preparation were 47% and 37%, respectively, which were similar to the previous studies;^{7,8} furthermore, the rates were high even in patients with a well-prepared colon (21% to 27%, 9% to 18%, respectively). The patients with poor/inadequate bowel preparation were also independently associated with increased risks of missed polyp, missed adenoma, and missed advanced adenoma compared to the patients with excellent bowel preparation. As mentioned by the authors, the limitations of this study is the inflation of the overall miss rate (AMR and AAMR), which might be associated with the fact that all patients had one or more adenomas (≥ 5 mm), patients with ≥ 10 polyps were excluded, and tandem colonoscopies were performed by different colonoscopists in some patients. In addition, higher AMR and AAMR than previous tandem colonoscopy even in the patients with a well-prepared colon may be

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associated with the lack of high-quality colonoscopy, such as adequate withdrawal time and careful examination of the whole surface. Also, the location, shape and histology of missed advanced adenoma among bowel preparation status were not investigated in this study. Thus, it is necessary to give a supplementary explanation and make more precise investigation about these aspects.

In conclusion, inadequate bowel preparation is clearly related with increased missed polyps. Current recommendations for postpolypectomy colonoscopy surveillance interval essentially require adequate bowel preparation, and if the bowel preparation was inadequate, repeat colonoscopy should be performed after adequate preparation as soon as possible considering low patient-return for repeat colonoscopy, reduction of secondary inadequate preparation, and legal problems related with interval cancer. Efforts to improve the quality of bowel preparation, including patient education, should be continued to obtain high-quality colonoscopy.

Conflicts of Interest

The author has no financial conflicts of interest.

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