

Investigating endoscopic features of sessile serrated adenomas/polyps by using narrow-band imaging with optical magnification (CME)

Masayoshi Yamada, MD, PhD,¹ Taku Sakamoto, MD,¹ Yosuke Otake, MD, PhD,¹ Takeshi Nakajima, MD, PhD,¹ Aya Kuchiba, PhD,² Hirokazu Taniguchi, MD, PhD,³ Shigeki Sekine, MD, PhD,⁴ Ryoji Kushima, MD, PhD,³ Hemchand Rambaran, MD,⁵ Adolfo Parra-Blanco, MD, PhD,⁶ Takahiro Fujii, MD, PhD,⁷ Takahisa Matsuda, MD, PhD,¹ Yutaka Saito, MD, PhD¹

Tokyo, Japan; Chattanooga, Tennessee, USA; Santiago, Chile

Background: A sessile serrated adenoma/polyp (SSA/P) is a common type of colorectal polyp that possesses malignant potential. Although narrow-band imaging (NBI) can easily differentiate neoplastic lesions from hyperplastic polyps (HPs), SSA/Ps can be a challenge to distinguish from HPs.

Objective: To investigate specific endoscopic features of SSA/Ps by using NBI with optical magnification.

Design: Retrospective study.

Setting: Single high-volume referral center.

Patients: A total of 289 patients with histopathologically proven SSA/Ps or HPs obtained from colonoscopic polypectomy.

Intervention: Endoscopic images obtained by using NBI with optical magnification of 242 lesions (124 HPs, 118 SSA/Ps) removed between January 2010 and December 2012 were independently evaluated by 2 experienced endoscopists. Three external experienced endoscopists systematically validated the diagnostic accuracies by using 40 lesions (21 HPs and 19 SSA/Ps) removed between January and March 2013.

Main Outcome Measurements: Specific endoscopic features of SSA/Ps by using 5 potential characteristics: dilated and branching vessels (DBVs), irregular dark spots, a regular network pattern, a disorganized network pattern, and a dense pattern.

Results: Multivariate analysis demonstrated that DBV had a 2.3-fold odds ratio (95% confidence interval, 0.96-5.69) among SSA/Ps compared with HPs (sensitivity, 56%; specificity, 75%; accuracy, 65%). Interobserver and intraobserver agreement indicated almost perfect agreement for DBVs in both the evaluation and validation studies. When DBVs, proximal location, and tumor size (≥ 10 mm) were combined, the positive predictive value was 92% and the area under the curve was 0.783 in the receiver-operating characteristics by using the validation group.

Limitations: Retrospective study.

Conclusions: The current study suggests that a DBV is a potentially unique endoscopic feature of a colorectal SSA/P. (Gastrointest Endosc 2015;82:108-17.)

Abbreviations: CI, confidence interval; CP, capillary pattern; DBV, dilated and branching vessel; HP, hyperplastic polyp; iDS, irregular dark spot; NBI, narrow-band imaging; NCCCH, National Cancer Center Hospital; NICE, Narrow-Band Imaging International Colonoscopic Endoscopic; OR, odds ratio; ROC, receiver-operating characteristic; SSA/P, sessile serrated adenoma/polyp.

DISCLOSURE: All authors disclosed no financial relationships relevant to this publication.

See CME section; p. 146.

Copyright © 2015 by the American Society for Gastrointestinal Endoscopy

0016-5107/\$36.00

<http://dx.doi.org/10.1016/j.gie.2014.12.037>

Received September 20, 2014. Accepted December 7, 2014.

Current affiliations: Endoscopy Division, National Cancer Center Hospital (1), Department of Biostatistics, National Cancer Center (2), Department of Pathology and Clinical Laboratories, National Cancer Center Hospital (3), Molecular Pathology Division (4), National Cancer Center Research

(footnotes continued on last page of article)

Magnification colonoscopy developed by Kudo et al^{1,2} and Fu et al³ in 1993 can optically zoom up to 100 times in real time and permits pit pattern characteristics that lead to greater than 10% higher accuracy compared with nonmagnifying observation in differentiating between nonneoplastic and neoplastic colorectal lesions.¹⁻³ In addition, image-enhanced endoscopy including narrow-band imaging (NBI), autofluorescence imaging, flexible spectral imaging color enhancement, i-scan imaging, and blue laser imaging has recently been developed and is currently being used for clinical applications.⁴⁻⁷ NBI, which became commercially available in 2006, is an innovative image-enhanced endoscopy technology that enhances the visualization of vascular and surface pattern of the polyps using short wavelength visible light that is the best absorption for hemoglobin.^{6,8} This new endoscopic technology enables qualitative diagnosis of colorectal polyps by differentiating adenomas from hyperplastic polyps (HPs) with good accuracy.⁹

The majority of colorectal cancer arises from adenomatous polyps and serrated polyps.^{10,11} Sessile serrated adenoma/polyps (SSA/Ps) are a relatively common type of colorectal polyp that belongs to the serrated polyps and are histologically characterized by a serrated architecture of the epithelial compartment.¹²⁻¹⁴ SSA/Ps, related to the serrated neoplastic pathway, is considered to be one of the possible causes of colorectal cancer arising between scheduled and surveillance colonoscopies, so-called interval cancers, owing to its flat, nonpolypoid features that can be easily missed.^{11,15-17} Removal of this type of precursor lesion is recommended during the screening and surveillance colonoscopy to reduce the risk of the development of colorectal cancer.¹⁸

During colonoscopic evaluation, these SSA/Ps can be challenging to distinguish from HPs because they can exhibit analogous gross surface features.¹⁹ Although few studies have reported the features of SSA/Ps seen on NBI for the diagnosis, so far the findings have been obtained and described without optical magnification.^{20,21} We hypothesized that NBI with optical magnification would be advantageous and able to better distinguish SSA/Ps from HPs. Therefore, the aim of this study was to accurately identify the specific endoscopic features of SSA/Ps by using NBI with optical magnification.

METHODS

Image samples

We conducted a retrospective, cross-sectional image evaluation study. The study flow chart is shown in Figure 1. From 7396 patients undergoing colonoscopy at the National Cancer Center Hospital (NCCH), Tokyo, Japan, between January 2011 and March 2013, we collected 289 patients with at least 1 or more histologically proven SSA/Ps or HPs that were removed

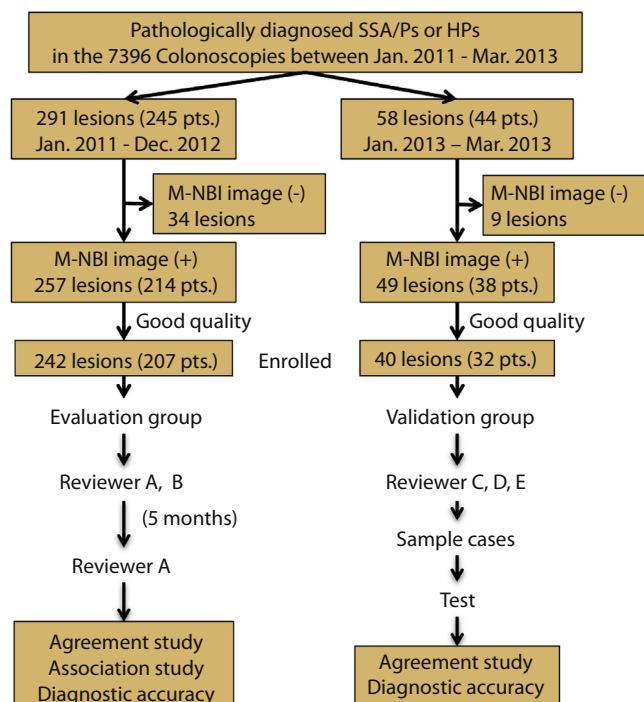


Figure 1. Study algorithm. HPs, hyperplastic polyps; SSA/Ps, sessile serrated adenoma/polyps; pts., patients; M-NBI, magnifying narrow-band imaging.

by endoscopic resection. The lesions were assigned to 1 of 2 groups: the evaluation group including 291 lesions (245 patients) removed between January 2011 and December 2012 and the validation group including 58 lesions (44 patients) removed between January and March 2013. In the evaluation group, there were no images using NBI with optical magnification of 34 lesions, and images of 15 lesions could not be evaluated because of poor quality. Finally, 242 lesions (124 HPs, 118 SSA/Ps) in 207 patients were used for the evaluation study. Among the validation group, there were no images using NBI with optical magnification in 9 lesions, and images of 9 lesions could not be evaluated because of poor quality. Finally, 40 lesions (21 HPs, 19 SSA/Ps) in 32 patients were used for the validation study. Tubular adenomas, adenocarcinomas, mixed polyps, and traditional serrated adenomas were excluded. All images were obtained with magnifying colonoscopes (CF-H260AZI, PCF-240ZI, or PCF-260AZI; Olympus Optical Co, Tokyo, Japan) with up to 100× magnification in combination with a standard video processor system (EVIS LUCERA system; Olympus Inc, Tokyo, Japan) and NBI system (Olympus Inc). Because of the retrospective design, the indication for endoscopic resection of the HPs and SSA/Ps was dependent on the judgment of the endoscopists performing the resection. Histological diagnosis was determined based on the World Health Organization criteria by 3 GI pathologists (H.T., S.S., R.K.). In this study, a histopathological diagnosis of SSA/Ps was made when there was agreement by all 3

Download English Version:

<https://daneshyari.com/en/article/6097649>

Download Persian Version:

<https://daneshyari.com/article/6097649>

[Daneshyari.com](https://daneshyari.com)