

# Accuracy of narrow band imaging with colonoscopy allows for distal non-cancerous polyps to be left in place

August 27 2012

---

According to a new study, the use of narrow band imaging (NBI) during colonoscopy is sufficiently accurate to allow distal hyperplastic (non-cancerous) polyps to be left in place without removal and small, distal adenomas (pre-cancerous polyps) to be removed and discarded without pathologic assessment. These findings validate NBI criteria based on color, vessels and pit characteristics for predicting real-time colorectal polyp histology. The study appears in the August issue of *GIE: Gastrointestinal Endoscopy*, the monthly peer-reviewed scientific journal of the American Society for Gastrointestinal Endoscopy (ASGE).

There are two common types of [polyps](#) in the colon: hyperplastic polyps and [adenomas](#). [Colorectal cancer](#) may develop from colon adenomas. A hyperplastic polyp does not increase [cancer risk](#). Adenomas, however, are thought to be the precursor (origin) for the majority of colorectal cancers, although most adenomas never become cancerous. [Colonoscopy](#) can find polyps, which can then be removed (polypectomy), before they turn into cancer. The distal colon, or rectosigmoid, includes the regions of the lower colon that are closest to the anal opening and often contains hyperplastic polyps.

Narrow band imaging during colonoscopy offers the potential for improved visualization over conventional colonoscopy and was developed to enhance certain mucosal or vascular characteristics so that abnormal growths could be better visualized. It uses a special filter to

illuminate tissue in the lining of the intestine with light at specific wavelengths, thereby enhancing underlying vasculature and producing the greatest contrast between blood vessels and the surrounding mucosa. This can help the endoscopist see the margins of an [abnormal growth](#) better and assist in determining which areas are best to biopsy or remove.

"New imaging technologies that allow in vivo, real-time assessment of polyp type could transform the [clinical approach](#) to management of diminutive colorectal polyps. Currently, diminutive colorectal polyps, less than or equal to 5 mm, are removed endoscopically and submitted for pathologic assessment. The pathologic assessment is used to guide post-polypectomy surveillance intervals. However, these polyps rarely harbor invasive cancer and seldom have high risk features such as villous elements or high-grade dysplasia," said study lead author Douglas K. Rex, MD, FASGE, Indiana University Hospital, Indianapolis. "We evaluated the feasibility of using NBI high-definition colonoscopes for leaving distal colon hyperplastic polyps in place during colonoscopy. We found very high levels of accuracy can be achieved for the endoscopic prediction of polyp type in the distal colon. Leaving distal colon hyperplastic polyps in place may be a relatively easy goal to achieve with acceptable accuracy by using narrow band imaging."

## Methods

The researchers' objectives were to assess the accuracy of predicting histology (tissue composition or polyp type) by using narrow band imaging in real time for distal colorectal polyps. It was a prospective, observational study conducted at Indiana University Hospital and their affiliated ambulatory surgery center. The study involved 225 consecutive adults undergoing elective screening or surveillance colonoscopy. Researchers evaluated real-time histology of 235 distal colorectal polyps from 31 patients by using high-definition colonoscopy and NBI without

optical magnification. For each polyp, the endoscopist described size and surface characteristics (vascular and pit pattern, color, pseudodepression). Before removal, histology was predicted, and a level of confidence (high or low) was assigned. The main outcome measurements were sensitivity and negative predictive value of high-confidence endoscopic predictions of adenomatous versus hyperplastic histology for polyps less than or equal to 5 mm in size. All colonoscopies were performed by a single experienced endoscopist by using high-definition colonoscopes.

## Results

The histology of 216 of the 235 polyps, or 91.9 percent, was predicted with high confidence. Overall, the histology of 220 of the 235 polyps was predicted correctly in real time, representing an accuracy of 93.6 percent. When the prediction was made with high confidence, the accuracy was 97.7 percent (211/216).

The accuracy of high-confidence, real-time predictions for polyps less than or equal to 5 mm was 99 percent (199/201). Of 38 adenomas in the sigmoid colon and rectum, only 4 were incorrectly predicted to be hyperplastic. Only 11 of 197 hyperplastic polyps were incorrectly predicted to be adenomas. This represents an overall sensitivity for real time evaluation of 89.5 percent and specificity of 94.4 percent.

Performance characteristics improved when predictions were made with high confidence and when polyps less than or equal to 5 mm were considered. When predictions were made with high confidence, the sensitivity was 93.9 percent, and the specificity was 98.4 percent. For polyps less than or equal to 5 mm predicted with high confidence, the sensitivity was 96 percent and specificity 99.4 percent. The positive predictive value of an adenoma prediction was 75.6 percent, and the negative predictive value was 97.9 percent. Predictive values were the

greatest for high confidence predictions with polyps less than or equal to 5 mm, where there was a positive predictive value of 96 percent and a negative predictive value of 99.4 percent.

The study was limited by being conducted at a single center by a single endoscopist with a special interest in colonoscopy and extensive experience in NBI. According to the researchers, this is the first prospective study and the second study overall to specifically address the ASGE Preservation and Incorporation of Valuable Endoscopic Innovations (PIVI)\* on leaving distal colon hyperplastic polyps in place, and both studies have found that NBI allows the recommended ASGE threshold for negative predictive value to be exceeded by a substantial margin.

The researchers concluded that an expert using NBI and high-definition optics can achieve an accuracy of real-time assessment of distal colon diminutive polyps that substantially exceeds the accuracy threshold recommended by the ASGE for a new management paradigm of leaving diminutive hyperplastic rectosigmoid polyps in place. The researchers recommend that NBI be tested for real-time histologic assessment of distal [colorectal polyps](#) by a larger group of physicians in a variety of practice settings.

**More information:** \*See the ASGE Preservation and Incorporation of Valuable endoscopic Innovations (PIVI): Real-Time Endoscopic Assessment of the Histology of Diminutive Colorectal Polyps (March 2011) [www.asge.org/clinicalpractice/ ... actice.aspx?id=11958](http://www.asge.org/clinicalpractice/...actice.aspx?id=11958)

Provided by American Society for Gastrointestinal Endoscopy

Citation: Accuracy of narrow band imaging with colonoscopy allows for distal non-cancerous

polyps to be left in place (2012, August 27) retrieved 24 April 2024 from  
<https://medicalxpress.com/news/2012-08-accuracy-narrow-band-imaging-colonoscopy.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.