

# ADVANCES IN ENDOSCOPY

Current Developments in Diagnostic and Therapeutic Endoscopy

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## Inappropriate Uses of Colonoscopy



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**G&H** According to consensus guidelines, what indications are appropriate for colonoscopy?

**JJT** The two most widely used guidelines for appropriate use of colonoscopy are from the American Society of Gastrointestinal Endoscopy (ASGE) and the European Panel on the Appropriateness of Gastrointestinal Endoscopy (EPAGE). The majority of colonoscopies are performed for colorectal cancer screening in asymptomatic individuals or for surveillance following colonic adenoma removal or colorectal cancer resection. Other appropriate indications include positive fecal occult blood testing, hematochezia, unexplained iron-deficiency anemia, chronic diarrhea, screening for colorectal dysplasia in patients with long-standing Crohn's disease or ulcerative colitis, unexplained loss of weight, and evaluation of a colonic abnormality detected on imaging studies such as computed tomography colonography.

**G&H** How significant of a problem is the inappropriate use of colonoscopy?

**JJT** Studies published in the United States, Europe, and the Middle East indicate that 20–50% of colonoscopies are performed for inappropriate indications. The rate of colonoscopies performed for inappropriate indications is increased in open access endoscopy units that accept patients from primary care physicians. As expected, the diagnostic yield of colonoscopy is significantly lower in colonoscopies performed for an inappropriate indication. There are no data reflecting the consequences of performing inappropriate colonoscopies, but as colonoscopies have a risk of complications and waste valuable healthcare resources, the consequences can be extrapolated.

**G&H** You recently gave a talk outlining 10 reasons not to perform a colonoscopy. Could you explain why a colonoscopy is inappropriate in each of these situations?

**JJT** Ten reasons not to perform a colonoscopy include:

Surveillance of hyperplastic polyps: According to consensus guidelines, hyperplastic polyps do not require colonoscopic surveillance. Hyperplastic polyposis syndrome is a rare exception.

Surveillance of low-risk adenomas too frequently and surveillance of high-risk adenomas too infrequently: Advanced adenomas (>10 mm, villous or tubulovillous, high-grade dysplasia) and multiple (>2) nonadvanced adenomas should be surveyed at 3 years, whereas 1 or 2 nonadvanced adenomas should be surveyed at 5 years.

Surveillance following colorectal cancer too frequently: Complete perioperative colonoscopy should be performed to rule out synchronous lesions. There is variability regarding the interval for surveillance in the first 5 years following resection (1 and 3 years vs 3 years). Subsequent intervals should be increased to 5 years if there are no high-risk findings. There may be a role for additional flexible sigmoidoscopy to assess for local recurrence following resection of rectal cancers.

Diverticulitis: Colonoscopy is relatively contraindicated in acute diverticulitis due to the risk of perforation. However, following an episode of diverticulitis, colonoscopy is recommended to assess for associated colorectal neoplasia. The prevalence of colorectal cancer in this situation is 2% and increases if there is an associated abscess, local perforation, or fistula.

Fulminant colitis: Colonoscopy is contraindicated in fulminant colitis due to the risk of perforation. Careful exam-

ination of the rectum and lower sigmoid colon to perform biopsies to assess for infectious causes of colitis is reasonable, as treatment may allow the patient to avoid a colectomy.

**Routine follow-up of inflammatory bowel disease:** A patient with inflammatory bowel disease in remission likely does not require colonoscopy until surveillance of dysplasia is required. However, future recommendations may incorporate colonoscopy for assessment of mucosal healing as a successful outcome of medical therapy.

**Metastatic adenocarcinoma of unknown primary:** Only 6% of metastatic adenocarcinoma of unknown primary is ultimately due to colorectal cancer.

**Acute diarrhea:** Diarrhea of less than 4 weeks in duration does not generally require a colonoscopy, as the etiology is usually infectious and the diarrhea is usually self-limited.

**Uncomplicated constipation:** Long-standing constipation does not require a colonoscopy, regardless of age. New-onset constipation in a younger patient (<50 years) does not require colonoscopy. However, colonoscopy is indicated to rule out colorectal cancer in an older patient with new-onset constipation.

**Uncomplicated abdominal pain in a younger patient:** Abdominal pain in a patient less than 50 years of age generally does not require colonoscopy. New-onset lower abdominal pain in an older patient is a reasonable indication for colonoscopy, as it may be associated with colorectal cancer.

### G&H Are colonoscopies ever appropriate in these situations?

**JJT** Absolutely. Appropriateness should be determined on an individual basis. Ultimately, clinicians should use their best judgment and should consider all of the details of the patient's history to determine whether a colonoscopy is necessary and would benefit the patient. I am not suggesting that clinicians should rule out colonoscopy in a given situation (eg, in all young patients with uncomplicated abdominal pain) because there are certain circumstances in which a colonoscopy is indicated (eg, if a young patient with abdominal pain is suspected of having Crohn's disease). The reasons discussed above are not meant to be rules; they are meant to make clinicians understand that the decision to perform a colonoscopy needs to take into account the diagnostic yield and the risk of the procedure for that particular patient.

### G&H Have studies examined the appropriateness of these 10 indications (or any others) for colonoscopy?

**JJT** A US study published in the *Annals of Internal Medicine* surveyed gastroenterologists and general surgeons performing colonoscopy to examine adherence

to guidelines in terms of surveillance following polyp removal. The researchers found that over 50% of these colonoscopists recommended a surveillance colonoscopy for 1 or 2 nonadvanced adenomas at an interval of less than 3 years. This recommendation contrasts with consensus guidelines, which state that these polyps should be surveyed by colonoscopy at 5-year intervals.

Similarly, an audit performed in the United Kingdom that looked at surveillance colonoscopy following polypectomy revealed that 18% of colonoscopies were performed in an appropriate manner, 59% of colonoscopies were performed too soon, and 24% of colonoscopies were not indicated. With respect to hyperplastic polyps, which do not require surveillance colonoscopy according to consensus guidelines, 24% of gastroenterologists and 54% of surgeons in the aforementioned US study surveyed hyperplastic polyps, and 23% of the colonoscopists in the aforementioned UK audit surveyed hyperplastic polyps.

In another study, Morini and coauthors prospectively evaluated 1,123 colonoscopies in an open access endoscopy unit to evaluate indications according to ASGE guidelines. The authors determined that 29% of the colonoscopies were inappropriate, and this finding was associated with referral from a primary care physician as opposed to a specialist. Furthermore, the diagnostic yield of a colonoscopy was significantly higher if the colonoscopy was performed for an appropriate indication (43% vs 16%;  $P<.001$ ). Similar results have been obtained from a subsequent study using EPAGE to determine the appropriateness of the indication. Other studies have shown that inappropriate colonoscopy is also associated with younger patients, female gender, and symptoms of abdominal pain or diarrhea.

### G&H What steps have been undertaken to correct inappropriate use of colonoscopy?

**JJT** The published guidelines and studies educate colonoscopists as to appropriate use of colonoscopy. In addition, Canada and other countries are developing population-based colorectal cancer screening programs that monitor colonoscopy quality indicators, including performance of colonoscopy at appropriate surveillance intervals. The Canadian Association of Gastroenterology has adopted the Global Rating Scale, which is a continuing quality improvement survey that has been adapted from the National Health Services in the United Kingdom. This survey is conducted twice yearly by a multidisciplinary committee and assesses several aspects of the endoscopic procedure in a patient-centered manner. Examples include the procedure indication, flexibility of booking, timeliness, nurse-led patient comfort scores

during the procedure, monitoring of endoscope cleaning, complication rates, and timeliness of procedure and pathology report completion. Each aspect has a benchmark value, and if it is not met, the unit is required to have a strategy for improvement, as well as a procedure in place to assess whether the quality improvement measure was successful. In the United Kingdom, an endoscopy unit must achieve a certain level on the Global Rating Scale prior to participating in the bowel cancer screening program and benefiting from the extra resources associated with this program.

### **G&H** How can the appropriateness of indications for colonoscopy be monitored in endoscopy suites?

**JJT** The evaluation of the appropriateness of performing colonoscopy, and other endoscopic procedures, is integral to any endoscopy clinic's quality assurance program. Each clinic should come to an agreement, using available literature, on the appropriate indications for endoscopic procedures in their unit and then perform regular audits to ensure that this agreement is upheld. Participating in a formal quality program, such as the Global Rating Scale, or a program available through the ASGE, is very helpful in structuring an individual unit's quality assurance.

### **G&H** Are there plans to update consensus guidelines to address the issue of inappropriate indications for colonoscopy?

**JJT** Guidelines for the appropriate use of colonoscopy for colorectal cancer screening were updated in 2008. I do not know whether there has been any thought to updating the US consensus guidelines for surveillance colonoscopy following the excision of colorectal neoplasia (postpolypectomy and post-cancer resection) or the more general guidelines that detail all indications for colonoscopy, including its appropriate use in the evaluation of patient symptoms.

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### **G&H** What research would you like to see in this area?

**JJT** It would be interesting to conduct a prospective trial of colonoscopy yield in patients presenting with gastrointestinal symptoms. Most of the studies looking at colonoscopy performed in patients with symptoms are retrospective or evaluate the association between indication and diagnosis of neoplasia. Prospectively assessing the indication for colonoscopy and determining whether the results of the procedure altered patient management would be a helpful addition to the current body of literature.

### **Suggested Reading**

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