Complete Summary

GUIDELINE TITLE

Polyp guideline: diagnosis, treatment, and surveillance for patients with colorectal polyps.

BIBLIOGRAPHIC SOURCE(S)

Bond JH. Polyp guideline: diagnosis, treatment, and surveillance for patients with colorectal polyps. Am J Gastroenterol 2000 Nov;95(11):3053-63. [108 references]

COMPLETE SUMMARY CONTENT

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SCOPE

DISEASE/CONDITION(S)

Colorectal Polyps

GUIDELINE CATEGORY

Diagnosis
Evaluation
Management
Prevention
Treatment

CLINICAL SPECIALTY

Colon and Rectal Surgery
Family Practice
Gastroenterology
Internal Medicine
Oncology

Pathology
Radiology

INTENDED USERS

Physicians

GUIDELINE OBJECTIVE(S)

To indicate preferable approaches to the management of patients with colorectal polyps based on available scientific evidence

TARGET POPULATION

- Adults with colorectal polyps

  Note: The guideline does not deal with pediatric patients or patients with known colon cancer, hereditary nonpolyposis colorectal cancer syndrome, or familial polyposis.

INTERVENTIONS AND PRACTICES CONSIDERED

Diagnosis

1. Colonoscopy
2. Single and double contrast barium radiography
3. Flexible sigmoidoscopy and flexible proctosigmoidoscopy
4. Rectal ultrasound
5. Pathological evaluation of excised polyps

   Note: Dye staining chromoendoscopy, with or without magnification, is considered but not recommended for the detection of small flat adenomas.

Management

1. Endoscopic polypectomy with and without electrocautery
2. Surgical resection
3. Tattooing of the polypectomy site with India ink for possible subsequent surgical resection of large polyps
4. Postpolypectomy colonoscopic surveillance and colonoscopic surveillance for first-degree relatives of adenoma patients

Prevention

1. Diet low in fat and high in fruits, vegetables, and fiber
2. Maintenance of normal body weight
3. Avoidance of smoking and excessive alcohol use
4. Regular exercise
5. Calcium carbonate supplementation

Note: Supplementation with other chemopreventive agents (aspirin and other nonsteroidal anti-inflammatory drugs; antioxidant vitamins A, E, and C; vitamin D; selenium; folic acid; and hormonal replacement in postmenopausal women) is considered but not recommended.

MAJOR OUTCOMES CONSIDERED

- Accuracy, specificity, and sensitivity of diagnostic procedures
- Complications resulting from diagnostic and treatment procedures
- Risk of morbidity and mortality from surgical resection
- Incidence of colorectal cancer subsequent to polypectomy of small (<1 cm) and large (≥1 cm) polyps
- Mortality from colorectal cancer subsequent to polypectomy
- Rate of adenoma detection 3 years after initial adenoma resection
- Risk for local recurrence or lymph node metastasis after endoscopic resection of a malignant polyp

METHODOLOGY

METHODS USED TO COLLECT/SELECT EVIDENCE

Searches of Electronic Databases

DESCRIPTION OF METHODS USED TO COLLECT/SELECT THE EVIDENCE

Not stated

NUMBER OF SOURCE DOCUMENTS

Not stated

METHODS USED TO ASSESS THE QUALITY AND STRENGTH OF THE EVIDENCE

Not stated

RATING SCHEME FOR THE STRENGTH OF THE EVIDENCE

Not applicable

METHODS USED TO ANALYZE THE EVIDENCE

Review

DESCRIPTION OF THE METHODS USED TO ANALYZE THE EVIDENCE

Not stated

METHODS USED TO FORMULATE THE RECOMMENDATIONS

Not stated

RATING SCHEME FOR THE STRENGTH OF THE RECOMMENDATIONS

Not applicable

COST ANALYSIS

A formal cost analysis was not performed and published cost analyses were not reviewed.

METHOD OF GUIDELINE VALIDATION

External Peer Review
Internal Peer Review

DESCRIPTION OF METHOD OF GUIDELINE VALIDATION

These guidelines are developed under the auspices of the American College of Gastroenterology and its Practice Parameters Committee. These guidelines are also approved by the governing boards of the American Gastroenterological Association, the American Society for Gastrointestinal Endoscopy, and the American Association for the Study of Liver Diseases. Guidelines are reviewed in depth by the Committee, with participation from experienced clinicians and others in related fields.

RECOMMENDATIONS

MAJOR RECOMMENDATIONS

Excerpted by the National Guideline Clearinghouse (NGC)

Diagnosis and Treatment

Colorectal polyps can be diagnosed by endoscopy or barium radiography. When there is an indication to examine the entire large bowel, colonoscopy is the diagnostic procedure of choice. It is the most accurate method of detecting polyps of all sizes and it allows immediate biopsy or polypectomy. Most polyps found during colonoscopy can be completely and safely resected, usually using electrocautery techniques. Scientific studies now conclusively show that resecting adenomatous polyps prevents colorectal cancer.

- Single-contrast barium enema is an inaccurate method for detecting polyps in most patients. Double-contrast techniques greatly improve the accuracy of radiological methods for detecting polyps. However, even when double-contrast methods are employed, barium enema examinations as they are currently performed in most community hospitals are insufficiently sensitive for the reliable detection of colorectal polyps. The other main limitations of barium enema is that it does not allow biopsy or polypectomy, and it has relatively low specificity (many false-positives) for polyps.

- The most common use of flexible sigmoidoscopy is for screening asymptomatic average-risk persons for colonic neoplasms. Sensitivity and specificity are very high because few polyps within reach of the instrument are missed, and the false-positive rate is negligible. The combination of a double-contrast barium enema and flexible sigmoidoscopy has been promoted as an acceptable alternative to colonoscopy for patients requiring a complete examination of the large bowel in whom colonoscopy is incomplete or unacceptable. When a barium enema is used for diagnosis or surveillance, flexible proctosigmoidoscopy usually should be done to ensure an adequate examination of the rectum. Flexible sigmoidoscopy also provides a more accurate examination of the sigmoid colon, which is often a difficult area for the radiologist to examine. Double-contrast barium enema seems to be more accurate in the proximal colon than in the distal colon. Although flexible sigmoidoscopy allows biopsy of lesions, it should not be used for electrosurgical polypectomy unless the entire colon is prepared, to eliminate the risk for electrocautery-induced explosion. Furthermore, detection of a neoplastic polyp by screening flexible sigmoidoscopy is usually an indication for colonoscopy, at which time the polyp can be resected and a search made for synchronous neoplasia.

Management

Initial Management of Polyps

Most patients with polyps detected by barium enema or flexible sigmoidoscopy, especially if the polyps are multiple or large, should undergo colonoscopy to excise the polyp and search for additional neoplasms. The decision whether to perform colonoscopy for patients with polyps <1 cm in diameter must be individualized depending on the patient's age, comorbidity, and past or family history of colorectal neoplasia. Complete clearing colonoscopy should be done at the time of every initial polypectomy to detect and resect all synchronous adenomas. Additional clearing examinations may be required after resection of large sessile adenomas or if, because of multiple adenomas or other technical reasons, the colonoscopist is not reasonably confident that all adenomas have been found and resected.

- Most polyps diagnosed during colonoscopy can be completely removed by electrocautery techniques. Surgical resection of a polyp is indicated only when an experienced endoscopist is unable to resect an advanced adenoma safely or when a malignant polyp requires colonic resection.
- Most pedunculated polyps are resected by snare-polypectomy and the entire specimen is submitted for pathological evaluation. A total excisional biopsy is desirable so that the polyp can be properly classified and the presence or absence of malignancy determined; and so that, for malignant polyps, the grade, vascular and lymphatic involvement, and proximity to the margin of resection of the cancer can be assessed.
- Large sessile polyps usually require piecemeal snare resection; but, again, every effort is made to retrieve all resected tissue for pathological analysis. Injection of saline into the submucosa under a large or flat sessile polyp (saline-assisted polypectomy) may increase the ease and safety of snare-resection, especially in the right colon.

Management of Small Polyps

Small polyps (<1 cm) encountered during colonoscopy are usually resected using one of a number of different techniques, with and without electrocautery. The monopolar hot biopsy forceps has limitations and risks that need to be carefully considered. Representative biopsies should be obtained when small polyps are numerous. When a small polyp is encountered during screening flexible sigmoidoscopy, it should be biopsied to determine whether it is an adenoma and, thus, may be an indication for colonoscopy. Current evidence supports the recommendation that a hyperplastic polyp found during flexible sigmoidoscopy is not, by itself, an indication for colonoscopy. Data are conflicting as to whether small distal adenomas predict the presence of proximal clinically significant adenomas; therefore, the decision to do colonoscopy must be individualized.

- Small sessile polyps are resected using several different techniques including hot and cold biopsy (with and without cautery), hot or cold minisnare, or cold biopsy followed by fulgeration with a monopolar or bipolar electrode. The monopolar hot biopsy forceps should be used with great caution in the thin-walled right colon. There have been reported perforations and a relatively high rate of delayed bleeding using this device. When using any type of cautery probe in the right colon, it is important to apply low-power cautery cautiously without pressing the tip of the probe into the bowel wall. Even modest pressure can thin out the wall and increase the chance of perforation.

A Small Polyp Found During Screening Flexible Sigmoidoscopy

- When a polyp less than about 8 mm in size is detected during screening flexible sigmoidoscopy, a biopsy usually should be done to determine whether it is an adenoma. If the only abnormality found during screening sigmoidoscopy is a hyperplastic polyp, no further evaluation or follow-up is indicated. Most larger polyps (>0.7 cm) are adenomas; therefore, there is usually no need to do a biopsy during screening sigmoidoscopy.
- The management of a patient found to have small tubular adenomas at flexible sigmoidoscopy must be individualized. Colonoscopy to look for synchronous adenomas, or for follow-up to search for metachronous neoplasia, may be of little benefit to most patients with only one or two small (<1-cm) tubular adenomas. Younger, healthy individuals may wish to have colonoscopy to reduce their risk of cancer even below that of the average-risk population. Older patients, especially those with significant comorbidity, may not benefit from an intensive evaluation or follow-up.

The Small Flat Adenoma

- Many recent papers describe small flat colorectal adenomas with a purportedly high malignant potential. These reports suggest that such lesions are common, may be missed during conventional colonoscopy, and frequently and rapidly degenerate into small flat cancers. Most, but not all, of the papers reporting these lesions have come from Japan and other Eastern countries. They stress the need for special techniques employing dye-staining chromoendoscopy, with or without

magnification, to accurately detect these lesions. Small flat adenomas with a high malignant potential seem to be rare in Western countries, and there is little evidence that early colonic cancer is a frequently overlooked entity in Western countries, provided that patients undergo colonoscopy by well-trained, experienced endoscopists. Modern high-resolution video endoscopy seems to detect most clinically significant lesions without the need for special techniques.

Management of Large Sessile Polyps

A patient who has had successful colonoscopic excision of a large sessile polyp (>2 cm) usually should undergo follow-up colonoscopy in 3 to 6 months to determine whether resection was complete. If residual polyp is present, it should be resected and the completeness of resection documented within another 3 to 6-month interval. If complete resection is not possible after two or three examinations, the good-risk patient should usually be referred for surgical therapy.

Malignant Polyps

No further treatment is indicated after colonoscopic resection of a malignant polyp (an adenomatous polyp with cancer invading the submucosa) if the endoscopic and pathological criteria listed below are fulfilled.

Recommendations for a Patient With a Malignant Polyp

Because the risk for local recurrence or for lymph node metastasis from invasive carcinoma in a colonoscopically resected polyp is less than the risk for death from colonic surgery, the American College of Gastroenterology recommends no further treatment if the following criteria are fulfilled:

1. The polyp is considered to be completely excised by the endoscopist and is submitted in toto for pathological examination.
2. In the pathology laboratory, the polyp is fixed and sectioned so that it is possible to accurately determine the depth of invasion, grade of differentiation, and completeness of excision of the carcinoma.
3. The cancer is not poorly differentiated.
4. There is no vascular or lymphatic involvement
5. The margin of excision is not involved. Invasion of the stalk of a pedunculated polyp, by itself, is not an unfavorable prognostic finding, as long as the cancer does not extend to the margin of stalk resection.

Patients with malignant sessile polyps with favorable prognostic criteria should have follow-up in about 3 months to check for residual abnormal tissue at the polypectomy site. After one negative result examination, the clinician can revert to standard surveillance as performed for patients with benign adenomas.

When a patient's malignant polyp has poor prognostic features, the relative risks of surgical resection should be weighed against the risk of death from metastatic cancer. The patient at high risk for morbidity and mortality from surgery probably should not have surgical resection. If a malignant polyp is located in that part of

the lower rectum that would require an abdominal-perineal resection, local excision rather than a standard cancer resection usually is justified. Rectal ultrasound studies may assist in determining correct treatment. During colonoscopic excision of a large sessile polyp that may require subsequent surgical resection, it may be useful to mark the polypectomy site with India ink.

Primary Prevention of Colorectal Adenomas

To prevent initial or recurrent colorectal adenomas, a diet that is low in fat and high in fruits, vegetables, and fiber is recommended. Normal body weight should be maintained, and smoking and excessive alcohol use should be avoided. Daily dietary supplementation with 3 g of calcium carbonate may reduce the recurrence of adenomas. Other chemopreventive measures (i.e., supplementation with aspirin and other nonsteroidal anti-inflammatory drugs, selenium, or folic acid), supported by indirect data, cannot yet be recommended pending the results of ongoing clinical trials showing both efficacy and a good risk-benefit ratio.

Surveillance of Families of Patients with Adenomas

Colonoscopic surveillance should be considered for first-degree relatives of adenoma patients, particularly when the adenoma was advanced or diagnosed before age 60 years, or, in the case of siblings, when a parent also had colorectal cancer diagnosed at any age. When indicated, surveillance should be initiated 5 years younger than the age of initial adenoma diagnosis, or at age 40 years (whichever occurs first), and then at intervals of 3 to 5 years, depending on findings.

Postpolypectomy Surveillance

Complete colonoscopy should be done at the time of initial polypectomy to detect and resect all synchronous adenomas. Additional clearing examinations may be required after resection of a large sessile adenoma, or if (because of multiple adenomas or other technical reasons) the colonoscopist is not reasonably confident that all adenomas have been found and resected.

After a complete clearing colonoscopy has been accomplished after an initial polypectomy, repeat colonoscopy to check for metachronous adenomas should be performed in 3 years for patients at high risk for developing metachronous advanced adenomas. This includes those who at baseline examination have multiple (>2) adenomas, a large ($\geq$1 cm) adenoma, an adenoma with villous histology or high-grade dysplasia, or have a family history of colorectal cancer.

Repeat colonoscopy to check for metachronous adenomas should be performed in 5 years for most patients at low risk for developing advanced adenomas. This includes those who at baseline examination have only one or two small tubular adenomas (<1 cm) and no family history of colorectal cancer. Selected patients at low risk for metachronous advanced adenomas may not require follow-up surveillance.

After one negative follow-up surveillance colonoscopy, subsequent surveillance intervals may be increased to 5 years. If complete colonoscopy is not feasible,

flexible sigmoidoscopy followed by a double-contrast barium enema is an acceptable alternative. Follow-up surveillance should be individualized according to the age and comorbidity of the patient, and should be discontinued when it seems unlikely that follow-up is capable of prolonging quality of life.

CLINICAL ALGORITHM(S)

None provided

EVIDENCE SUPPORTING THE RECOMMENDATIONS

TYPE OF EVIDENCE SUPPORTING THE RECOMMENDATIONS

The type of supporting evidence is not specifically stated for each recommendation.

BENEFITS/HARMS OF IMPLEMENTING THE GUIDELINE RECOMMENDATIONS

POTENTIAL BENEFITS

- Overall: Accurate diagnosis and effective management of patients with colorectal polyps may result in decreased morbidity and mortality and a decreased incidence of colorectal cancer. In addition, because many clinicians perform postpolypectomy surveillance more frequently than needed, national adoption of these recommendations should reduce substantially the cost of postpolypectomy surveillance.
- Colonoscopic polypectomy:
    - Cohort and case-control studies suggest that endoscopic polypectomy reduces the subsequent incidence and mortality of colorectal cancer.
    - Prospective studies of patients with resected polyps containing superficial carcinomas in which focal cancer had not invaded through the muscularis mucosae confirm that colonoscopic polypectomy is definitive therapy for these lesions.
- High-fiber diet: Although one recent long-term study employing dietary questionnaires in relatively young female nurses found no protective effect of total dietary fiber, a number of earlier studies suggest that regular consumption of wheat bran may be beneficial in preventing colorectal adenomas and cancer.
- Regular exercise: Regular exercise that helps to maintain normal body weight has a number of important health benefits, including a reduction in the risk of developing colorectal neoplasia.
- Postpolypectomy surveillance: Most patients who have had resection of a colorectal adenoma have some degree of increased risk for recurrent adenomas and subsequent cancer and may benefit from long-term surveillance.

Subgroups Most Likely to Benefit:

A recent analysis shows that some first-degree relatives of patients with adenomas have a substantially increased risk of colorectal cancer and may benefit from special surveillance.

POTENTIAL HARMS

- Diagnostic procedures: Perforation as the result of diagnostic colonoscopy has been reported in <0.1% of cases performed by experienced endoscopists. Perforation and clinically significant bleeding occur after colonoscopic polypectomy in about 0.2% and 1% of cases, respectively. Major complications occur less frequently during barium enema (0.02%) and flexible sigmoidoscopy (0.01-0.04%).
- Monopolar hot biopsy forceps: This device not only has been associated with more complications, it frequently fails to eradicate all neoplastic tissue. There have been reported perforations and a relatively high rate of delayed bleeding using this device, and it should be used with great caution in the thin-walled right colon. Even modest pressure can thin out the wall and increase the chance of perforation. One study of different methods of resecting diminutive polyps found a high rate (29%) of incomplete resection using this device.

Subgroups Most Likely to be Harmed:

Despite its advantages for the diagnosis and treatment of polyps, colonoscopy has some limitations. Areas adjacent to acute angulations or flexures and the ileocecal valve may be difficult to observe. Furthermore, in 5-10% of patients, usually those with diverticulosis or previous pelvic surgery, the endoscopist may not be able to pass the instrument comfortably and safely to the cecum.

QUALIFYING STATEMENTS

QUALIFYING STATEMENTS

Guidelines are intended to be flexible, not necessarily indicating the only acceptable approach, and should be distinguished from standards of care that are inflexible and rarely violated. Given the wide range of choices in any health care problem, the physician should select the course best suited to the individual patient and the clinical situation presented.

IMPLEMENTATION OF THE GUIDELINE

DESCRIPTION OF IMPLEMENTATION STRATEGY

An implementation strategy was not provided.

INSTITUTE OF MEDICINE (IOM) NATIONAL HEALTHCARE QUALITY REPORT CATEGORIES

IOM CARE NEED

Getting Better
Living with Illness
Staying Healthy

IOM DOMAIN

Effectiveness
Patient-centeredness
Safety

IDENTIFYING INFORMATION AND AVAILABILITY

BIBLIOGRAPHIC SOURCE(S)

Bond JH. Polyp guideline: diagnosis, treatment, and surveillance for patients with colorectal polyps. Am J Gastroenterol 2000 Nov;95(11):3053-63. [108 references]

ADAPTATION

Not applicable: The guideline was not adapted from another source.

DATE RELEASED

1993 (revised 2000)

GUIDELINE DEVELOPER(S)

American College of Gastroenterology - Medical Specialty Society

SOURCE(S) OF FUNDING

American College of Gastroenterology

GUIDELINE COMMITTEE

Practice Parameters Committee

COMPOSITION OF GROUP THAT AUTHORED THE GUIDELINE

Author: John H. Bond, MD

FINANCIAL DISCLOSURES/CONFLICTS OF INTEREST

Not stated

ENDORSER(S)

American Gastroenterological Association - Medical Specialty Society
American Society for Gastrointestinal Endoscopy - Medical Specialty Society

GUIDELINE STATUS

This is the current release of the guideline. It is a revision of a previously issued version (Bond JH. Polyp guideline: diagnosis, treatment, and surveillance for patients with nonfamilial colorectal polyps. Ann Intern Med 1993 Oct 15;119[8]:836-43).

An update is not in progress at this time.

GUIDELINE AVAILABILITY

Electronic copies: Available from the American Journal of Gastroenterology Web site.

Print copies: Available from the American College of Gastroenterology, 4900 B South 31st St, Arlington, VA 22206-1656.

AVAILABILITY OF COMPANION DOCUMENTS

None available

PATIENT RESOURCES

None available

NGC STATUS

This summary was completed by ECRI on March 15, 2001.

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