

Appropriate use of GI endoscopy

This is one of a series of position statements discussing the use of GI endoscopy in common clinical situations. The Standards of Practice Committee of the American Society for Gastrointestinal Endoscopy (ASGE) prepared this text. Position statements are based on a critical review of the available data and expert consensus at the time the document was drafted. Further controlled clinical studies may be needed to clarify aspects of this document, which may be revised as necessary to account for changes in technology, new data, or other aspects of clinical practice.

This guideline is intended to be an educational device to provide information that may assist endoscopists in providing care to patients. This position statement is not a rule and should not be construed as establishing a legal standard of care or as encouraging, advocating, requiring, or discouraging any particular treatment. Clinical decisions in any particular case involve a complex analysis of the patient's condition and available courses of action. Therefore, clinical considerations may lead an endoscopist to take a course of action that varies from this position statement.

Progress in endoscopic technology has advanced the practice of medicine as it relates to the gastrointestinal (GI) tract. Direct examination of the mucosal surface provides far greater information than that gained by 2-dimensional scans and x-rays. Further, endoscopic diagnosis and treatment of conditions have now supplanted many surgical procedures. Ongoing technical improvements and innovations continue to extend potential endoscopic therapies. The ASGE has continually promoted safe and responsible endoscopic practice. It is critical that endoscopists receive thorough training in the cognitive aspects of GI diseases as well as in the technical aspects of endoscopy. Extensive nonendoscopic training is necessary to provide the endoscopist with the depth of experience and knowledge necessary to recognize what has been seen and to formulate an appropriate plan for the patient's subsequent care. The following information has been prepared for use by national and local procedure review committees to assist them in defining standards of endoscopic practice. This information should also be helpful to primary care physi-

cians when deciding how best to evaluate their patients and may serve as a resource for quality guidelines.

DEFINITION OF GI ENDOSCOPIC PROCEDURES

Esophagogastroduodenoscopy (EGD) affords an excellent view of mucosal surfaces of the esophagus, stomach, and proximal duodenum. Colonoscopy allows examination of the entire colon and rectum and frequently the terminal ileum. Standard diagnostic functions include inspection, biopsy, photography, and videorecording. Diagnostic observations are made concerning focal benign or malignant lesions, diffuse mucosal changes, luminal obstruction, motility, and extrinsic compression by contiguous structures. Common therapeutic endoscopic procedures include polypectomy, dilation of strictures, stent placement, removal of foreign bodies, gastrostomy, treatment of GI bleeding with injection, banding, coagulation, sclerotherapy, and endoscopic therapy of intestinal metaplasia.

Flexible sigmoidoscopy (FS) uses a flexible instrument to examine the rectum, sigmoid, and a variable length of more proximal colon. Diagnostic and therapeutic interventions include biopsy, hemostasis, hemorrhoidal banding, and stent placement.

Endoscopic retrograde cholangiopancreatography (ERCP) uses endoscopy to identify the major and minor papillae. The biliary and pancreatic ductal systems are cannulated and opacified with contrast material to provide diagnostic information. Other diagnostic tools may be used in conjunction with ERCP including brush cytology, biopsy, intraductal ultrasound (US), cholangioscopy, and pancreatoscopy. Therapeutic maneuvers performed during ERCP include endoscopic sphincterotomy with or without stent placement, removal of choledocholithiasis, and other ancillary techniques for the treatment of pancreatic and biliary duct disease.

Endoscopic ultrasound (EUS) is a technique whereby an US transducer is incorporated into the tip of the endoscope or a probe is passed through the channel of the endoscope. This provides high-resolution images of the GI wall and adjacent structures. Instruments can be passed under US guidance to obtain tissue samples and perform therapy.

Enteroscopy allows the visualization of a greater extent of the small bowel than EGD. Several types of enteroscopes are available: the push enteroscope, which allows tissue sampling and therapy, and deep enteroscopy (eg, balloon-assisted or spiral overtube-assisted enteroscopy),

which achieves much deeper small-bowel examination than standard push enteroscopy.

Video capsule endoscopy provides the capability to visualize the GI tract by transmitting images wirelessly from a disposable capsule to a data recorder worn by the patient. Specialized capsules for imaging the esophagus and small intestine are currently approved by the U.S. Food and Drug Administration (FDA).

Natural orifice transluminal endoscopic surgery (NOTES) is an investigational surgical procedure that allows transluminal access of endoscopes to extraluminal structures. A variety of novel procedures have been described, although a discussion of NOTES is beyond the scope of this guideline.

GENERAL INDICATIONS STATEMENTS

The indications and relative contraindications for doing each of the endoscopic procedures are listed in the following. These guidelines are based on a critical review of available information and broad clinical consensus. Clinical considerations may justify a course of action at variance with these recommendations.

GI endoscopy is generally indicated:

1. If a change in management is probable based on results of endoscopy.
2. After an empirical trial of therapy for a suspected benign digestive disorder has been unsuccessful.
3. As the initial method of evaluation as an alternative to radiographic studies.
4. When a primary therapeutic procedure is contemplated.

GI endoscopy is generally not indicated:

1. When the results will not contribute to a management choice.
2. For periodic follow-up of healed benign disease unless surveillance of a premalignant condition is warranted.

GI endoscopy is generally contraindicated:

1. When the risks to patient health or life are judged to outweigh the most favorable benefits of the procedure.
2. When adequate patient cooperation or consent cannot be obtained.
3. When a perforated viscus is known or suspected.

SPECIFIC INDICATIONS STATEMENTS

EGD

EGD is generally indicated for evaluating:

- A. Upper abdominal symptoms that persist despite an appropriate trial of therapy.
- B. Upper abdominal symptoms associated with other symptoms or signs suggesting structural disease (eg, anorexia and weight loss) or new-onset symptoms in patients older than 50 years of age.

- C. Dysphagia or odynophagia.
- D. Esophageal reflux symptoms that persist or recur despite appropriate therapy.
- E. Persistent vomiting of unknown cause.
- F. Other diseases in which the presence of upper GI pathology might modify other planned management. Examples include patients who have a history of ulcer or GI bleeding who are scheduled for organ transplantation, long-term anticoagulation or nonsteroidal anti-inflammatory drug therapy for arthritis and those with cancer of the head and neck.
- G. Familial adenomatous polyposis syndromes.
- H. For confirmation and specific histologic diagnosis of radiologically demonstrated lesions:
 1. Suspected neoplastic lesion.
 2. Gastric or esophageal ulcer.
 3. Upper tract stricture or obstruction.
- I. GI bleeding:
 1. In patients with active or recent bleeding.
 2. For presumed chronic blood loss and for iron deficiency anemia when the clinical situation suggests an upper GI source or when colonoscopy does not provide an explanation.
- J. When sampling of tissue or fluid is indicated.
- K. Selected patients with suspected portal hypertension to document or treat esophageal varices.
- L. To assess acute injury after caustic ingestion.
- M. To assess diarrhea in patients suspected of having small-bowel disease (eg, celiac disease).
- N. Treatment of bleeding lesions such as ulcers, tumors, vascular abnormalities (eg, electrocoagulation, heater probe, laser photocoagulation, or injection therapy).
- O. Removal of foreign bodies.
- P. Removal of selected lesions.
- Q. Placement of feeding or drainage tubes (eg, peroral, percutaneous endoscopic gastrostomy, percutaneous endoscopic jejunostomy).
- R. Dilation and stenting of stenotic lesions (eg, with transendoscopic balloon dilators or dilation systems using guidewires).
- S. Management of achalasia (eg, botulinum toxin, balloon dilation).
- T. Palliative treatment of stenosing neoplasms (eg, laser, multipolar electrocoagulation, stent placement).
- U. Endoscopic therapy of intestinal metaplasia.
- V. Intraoperative evaluation of anatomic reconstructions typical of modern foregut surgery (eg, evaluation of anastomotic leak and patency, fundoplication formation, pouch configuration during bariatric surgery).
- W. Management of operative complications (eg, dilation of anastomotic strictures, stenting of anastomotic disruption, fistula, or leak in selected circumstances).

EGD is generally not indicated for evaluating:

- A. Symptoms that are considered functional in origin (there are exceptions in which an endoscopic exami-

nation may be done once to rule out organic disease, especially if symptoms are unresponsive to therapy or symptoms recur that are different in nature from the original symptoms).

- B. Metastatic adenocarcinoma of unknown primary site when the results will not alter management.
- C. Radiographic findings of:
 1. Asymptomatic or uncomplicated sliding hiatal hernia.
 2. Uncomplicated duodenal ulcer that has responded to therapy.
 3. Deformed duodenal bulb when symptoms are absent or respond adequately to ulcer therapy.

Sequential or periodic EGD may be indicated for:

- A. Surveillance for malignancy in patients with premalignant conditions (eg, Barrett's esophagus, polyposis syndromes, gastric adenomas, tylosis, or previous caustic ingestion).

Sequential or periodic EGD is generally not indicated for:

- A. Surveillance for malignancy in patients with gastric atrophy, pernicious anemia, fundic gland or hyperplastic polyps, gastric intestinal metaplasia, or previous gastric operations for benign disease.
- B. Surveillance of healed benign disease, such as esophagitis and gastric or duodenal ulcer.

Colonoscopy

Colonoscopy is generally indicated in the following circumstances:

- A. Evaluation of an abnormality on barium enema or other imaging study that is likely to be clinically significant, such as a filling defect and stricture.
- B. Evaluation of unexplained GI bleeding:
 1. Hematochezia.
 2. Melena after an upper GI source has been excluded.
 3. Presence of fecal occult blood.
- C. Unexplained iron deficiency anemia.
- D. Screening and surveillance for colonic neoplasia:
 1. Screening of asymptomatic, average-risk patients for colonic neoplasia.
 2. Examination to evaluate the entire colon for synchronous cancer or neoplastic polyps in a patient with treatable cancer or neoplastic polyp.
 3. Colonoscopy to remove synchronous neoplastic lesions at or around the time of curative resection of cancer followed by colonoscopy at 1 year and, if normal, then 3 years, and, if normal, then 5 years thereafter to detect metachronous cancer.
 4. Surveillance of patients with neoplastic polyps.

5. Surveillance of patients with a significant family history of colorectal neoplasia.

- E. For dysplasia and cancer surveillance in select patients with long-standing ulcerative or Crohn's colitis.

For evaluation of patients with chronic inflammatory bowel disease of the colon, if more precise diagnosis or determination of the extent of activity of disease will influence management.
- F. Clinically significant diarrhea of unexplained origin.
- G. Intraoperative identification of a lesion not apparent at surgery (eg, polypectomy site, location of a bleeding site).
- H. Treatment of bleeding from such lesions as vascular malformation, ulceration, neoplasia, and polypectomy site.
- I. Intraoperative evaluation of anastomotic reconstructions typical of surgery to treat diseases of the colon and rectum (eg, evaluation for anastomotic leak and patency, bleeding, pouch formation).
- J. As an adjunct to minimally invasive surgery for the treatment of diseases of the colon and rectum.
- K. Management or evaluation of operative complications (eg, dilation of anastomotic strictures).
- L. Foreign body removal.
- M. Excision or ablation of lesions.
- N. Decompression of acute megacolon or sigmoid volvulus.
- O. Balloon dilation of stenotic lesions (eg, anastomotic strictures).
- P. Palliative treatment of stenosing or bleeding neoplasms (eg, laser, electrocoagulation, stenting).
- Q. Marking a neoplasm for localization.

Colonoscopy is generally not indicated in the following circumstances:

- A. Chronic, stable, irritable bowel syndrome or chronic abdominal pain; there are unusual exceptions in which colonoscopy may be done once to rule out disease, especially if symptoms are unresponsive to therapy.
- B. Acute diarrhea.
- C. Metastatic adenocarcinoma of unknown primary site in the absence of colonic signs or symptoms when it will not influence management.
- D. Routine follow-up of inflammatory bowel disease (except for cancer surveillance in chronic ulcerative colitis and Crohn's colitis).
- E. GI bleeding or melena with a demonstrated upper GI source.

Colonoscopy is generally contraindicated in:

- A. Fulminant colitis.
- B. Documented acute diverticulitis.

FS

FS is generally indicated for:

- A. Screening of asymptomatic, average-risk patients at risk of colonic neoplasia.

- B. Evaluation and treatment of suspected distal colonic disease when there is no indication for colonoscopy.
- C. Evaluation of the colon in conjunction with a barium enema.
- D. Evaluation for anastomotic recurrence in rectosigmoid carcinoma.
- E. Screening of patients with a family history of familial adenomatous polyposis.
- F. Stent placement.
- G. Removal of foreign bodies.
- H. Evaluation and treatment of anorectal disorders (eg, banding of hemorrhoids).
- I. Surveillance of the rectum after subtotal colectomy (eg, in familial adenomatous polyposis and ulcerative colitis).
- J. Evaluation for pouchitis.
- K. To obtain rectal and distal colon biopsy specimens in the evaluation of systemic diseases or infections (eg, cytomegalovirus, graft-versus-host disease, and amyloidosis).

FS is generally not indicated:

- A. When colonoscopy is indicated.

FS is generally contraindicated for:

- A. Documented acute diverticulitis.

ERCP

ERCP is generally indicated in:

- A. The jaundiced patient suspected of having biliary obstruction (appropriate therapeutic maneuvers should be performed during the procedure).
- B. The patient without jaundice whose clinical and biochemical or imaging data suggest pancreatic duct or biliary tract disease.
- C. Evaluation of signs or symptoms suggesting pancreatic malignancy when results of direct imaging (eg, EUS, US, computed tomography [CT], magnetic resonance imaging [MRI]) are equivocal or normal.
- D. Evaluation of pancreatitis of unknown etiology.
- E. Preoperative evaluation of the patient with chronic pancreatitis and/or pseudocyst.
- F. Evaluation of the sphincter of Oddi by manometry. Empirical biliary sphincterotomy without sphincter of Oddi manometry is not recommended in patients with suspected type III sphincter of Oddi dysfunction.
- G. Endoscopic sphincterotomy:
 1. Choledocholithiasis.
 2. Papillary stenosis or sphincter of Oddi dysfunction.
 3. To facilitate placement of biliary stents or dilation of biliary strictures.
 4. Sump syndrome.
 5. Choledochocele involving the major papilla.
 6. Ampullary carcinoma in patients who are not candidates for surgery.

- 7. Facilitate access to the pancreatic duct.
- H. Stent placement across benign or malignant strictures, fistulae, postoperative bile leak, or in high-risk patients with large unremovable common duct stones.
- I. Dilation of ductal strictures.
- J. Balloon dilation of the papilla.
- K. Nasobiliary drain placement.
- L. Pancreatic pseudocyst drainage in appropriate cases.
- M. Tissue sampling from pancreatic or bile ducts.
- N. Ampullectomy of adenomatous neoplasms of the major papilla.
- O. Therapy of disorders of the biliary and pancreatic ducts.
- P. Facilitation of cholangioscopy and/or pancreatoscopy.

ERCP is generally not indicated in:

- A. Evaluation of abdominal pain of obscure origin in the absence of objective findings that suggest biliary or pancreatic disease. Magnetic resonance cholangiopancreatography and EUS are safe diagnostic procedures that can obviate the need for ERCP.
- B. Evaluation of suspected gallbladder disease without evidence of bile duct disease.
- C. As further evaluation of proven pancreatic malignancy unless management will be altered.

EUS

EUS is generally indicated for:

- A. Staging tumors of the GI tract, pancreas, bile ducts, and mediastinum, including lung cancer.
- B. Evaluating abnormalities of the GI tract wall or adjacent structures.
- C. Tissue sampling of lesions within, or adjacent to, the wall of the GI tract.
- D. Evaluation of abnormalities of the pancreas, including masses, pseudocysts, cysts, and chronic pancreatitis.
- E. Evaluation of abnormalities of the biliary tree.
- F. Placement of fiducials into tumors within or adjacent to the wall of the GI tract.
- G. Treatment of symptomatic pseudocysts by creating an enteral-cyst communication.
- H. Drug delivery (eg, celiac plexus neurolysis).
- I. Providing access into the bile ducts or pancreatic duct, either independently or as an adjunct to ERCP.
- J. Evaluation for chronic pancreatitis.
- K. Evaluation of acute pancreatitis of unknown etiology.
- L. Evaluation for perianal and perirectal disorders (anal sphincter injuries, fistulae, abscesses).
- M. Evaluation of patients at increased risk of pancreatic cancer.

EUS is generally not indicated for:

- A. Staging of tumors shown to be metastatic by other imaging methods (unless the results are the basis for therapeutic decisions).

Enteroscopy

Enteroscopy is generally indicated for:

- A. Evaluation of the source of GI bleeding not identified by EGD or colonoscopy.
- B. Evaluation of an abnormal radiographic imaging study of the small bowel.
- C. Localization of known or suspected small-bowel lesions.
- D. Therapy of small-bowel lesions beyond the reach of a standard endoscope.
- E. Tissue sampling from the small bowel.
- F. Surveillance in patients with polyposis syndromes that involve the small bowel, such as familial adenomatous polyposis and Peutz-Jeghers syndrome.
- G. Foreign body retrieval.
- H. To facilitate ERCP in patients with postsurgical anatomy.
- I. For tube placement in the small bowel (eg, feeding jejunostomy).
- J. Dilation of strictures.
- K. Evaluation after small-bowel transplantation.

Enteroscopy is generally not indicated:

- A. When the source of GI bleeding has been identified by EGD or colonoscopy.

Video Capsule Endoscopy

Capsule endoscopy is generally indicated for:

- A. Evaluation of obscure GI bleeding in a patient in whom upper and lower endoscopy have not identified a cause.
- B. Evaluation of iron deficiency anemia in a patient in whom upper and lower endoscopy have not identified a cause.
- C. Evaluation of the small bowel in patients with known or suspected Crohn's disease.
- D. Screening and surveillance of the small bowel in patients with inherited polyposis syndromes.
- E. Suspected small intestinal tumors.
- F. Suspected or refractory malabsorptive syndromes (eg, celiac disease).
- G. Visualization of the esophagus:

1. Screening for Barrett's esophagus.
2. Screening for varices.

Capsule endoscopy should be used with caution when:

- A. A cardiac pacemaker or implantable defibrillator is in place.
- B. A GI tract obstruction, fistula, or stricture (benign or malignant) is known or suspected.
- C. A swallowing disorder is present.
- D. The patient is pregnant.

DISCLOSURE

The following authors disclosed financial relationships relevant to this publication: G. Anton Decker, Facet Biotechnology; John A. Evans, Cook Medical; Robert Fanelli, Ethicon, RTI Biologics, New Wave Surgical Corp.; Rajeev Jain, Barrx.

Abbreviations: CT, computed tomography; ERCP, endoscopic retrograde cholangiopancreatography; EUS, endoscopic ultrasound; FDA, Food and Drug Administration; FS, flexible sigmoidoscopy; GI, gastrointestinal; MRI, magnetic resonance imaging; US, ultrasound.

Prepared by:

ASGE STANDARDS OF PRACTICE COMMITTEE

Dayna S. Early, MD

Tamir Ben-Menachem, MD

G. Anton Decker, MD

John A. Evans, MD

Robert D. Fanelli, MD, SAGES Representative

Deborah A. Fisher, MD, MHS

Norio Fukami, MD

Joo Ha Hwang, MD, PhD

Rajeev Jain, MD

Terry L. Jue, MD

Khalid M. Khan, MD, NASPHAGAN Representative

Phyllis M. Malpas, MA, RN, CGRN SGNA Representative

John T. Maple, DO

Ravi S. Sharaf, MD

Jason A. Dominitz, MD, MHS (Prior Chair)

Brooks D. Cash, MD (Chair)

A consensus statement from the American Society for Gastrointestinal Endoscopy. Initially prepared by the Committee on Endoscopic Utilization. Revised by the Standards of Practice Committee and approved by the Governing Board.