Gastrointestinal Endoscopy

“Appropriate use of GI endoscopy”

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GIE 2012;75:1127-1131
Gastrointestinal Tract
Endoscopy

Esophagoscopy
E-G-D
Esophago
-Gastro
-Duodenoscopy

ERCP
Endoscopic Retrograde Cholangio-Pancreatography

Colonoscopy

Enteroscopy

Capsule endoscopy

Sigmoidoscopy

proctoscopy
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.
Gastrointestinal Tract Endoscopy

Esophagoscopy
E-G-D
Esophago
-Gastro
-Duodenoscopy

Gastroscopy
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 NSAID 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 jejunalostomy).

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).
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.
A. Symptoms that are considered functional in origin (there are exceptions in which an endoscopic examination 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.
Gastrointestinal Tract Endoscopy

Colonoscopy

Sigmoidoscopy
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.
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.
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.
Contraindication

A. Fulminant colitis.

B. Documented acute diverticulitis.
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).
Gastrointestinal Tract Endoscopy

ERCP
Endoscopic Retrograde Cholangio-Pancreatography
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.


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.
A. Evaluation of abdominal pain of obscure origin in the absence of objective findings that suggest biliary or pancreatic disease. Magnetic resonance cholangiopancreatography (MRCP) 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.
Endoscopic ultrasound (EUS)

What is endoscopic ultrasonography?
EndoUltraSonography

Why.. to develop endoscopic ultrasonography?
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
A. Staging of tumors shown to be metastatic by other imaging methods (unless the results are the basis for therapeutic decisions).
New technology of Enteroscopy

Push enteroscope

Double Balloon enteroscope

Capsule enteroscope
New technology of Enteroscopy

Double Balloon Enteroscopy, DBE, 2001

Single Balloon Enteroscopy, SBE, 2007

Balloon Guided Enteroscopy, BGE, 2007

Spiral Over tube Enteroscopy, 2007
Capsule Endoscopy

Double Balloon Enteroscopy
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.
A. When the source of GI bleeding has been identified by EGD or colonoscopy.
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.
Video Capsule Endoscopy

E. Suspected small intestinal tumors.

F. Suspected or refractory malabsorptive syndromes (eg, celiac disease).

G. Visualization of the esophagus:
   
   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.
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