

e25 Video Atlas of Gastrointestinal Endoscopy

Louis Michel Wong-Kee-Song, Mark Topazian

Gastrointestinal endoscopy is an increasingly important method for diagnosis and treatment of disease. This atlas demonstrates endoscop-

ic findings in a variety of gastrointestinal infectious, inflammatory, vascular, and neoplastic conditions. Cancer screening and prevention are common indications for gastrointestinal endoscopy, and the premalignant conditions of Barrett's esophagus and colonic polyps are illustrated. Endoscopic treatment modalities for gastrointestinal bleeding, polyps, and biliary stones are demonstrated in video clips. **The images shown in this Atlas are also found in Chap. 285 of the book.**

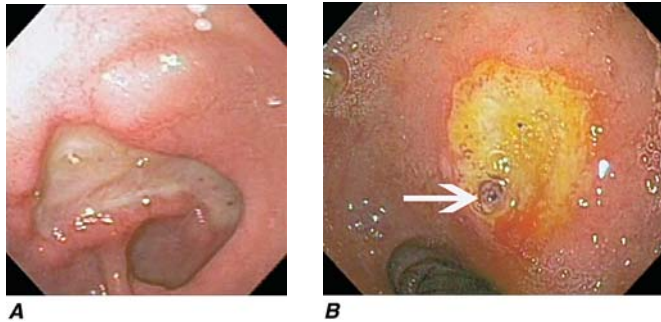


FIGURE e25-1 Duodenal ulcers. **A.** Ulcer with a clean base. **B.** Ulcer with a visible vessel (*arrow*) in a patient with recent hemorrhage.

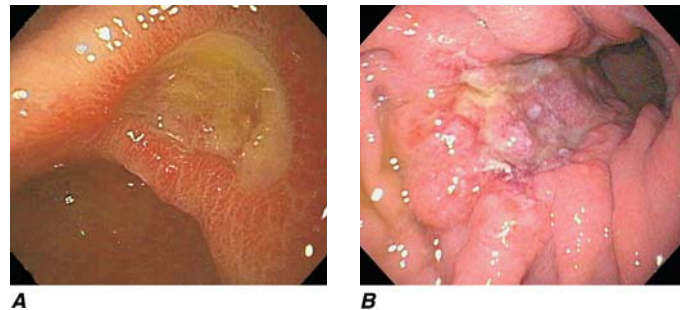


FIGURE e25-2 Gastric ulcers. **A.** Benign gastric ulcer. **B.** Malignant gastric ulcer involving greater curvature of stomach.

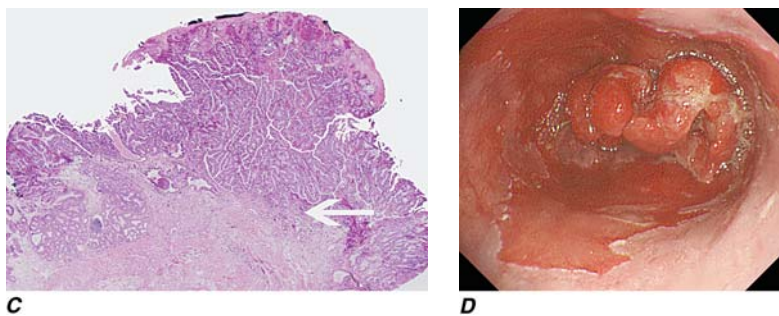
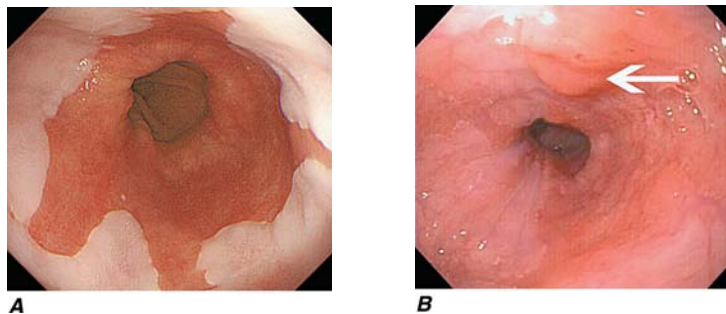


FIGURE e25-3 Barrett's esophagus. **A.** Pink tongues of Barrett's mucosa extending proximally from the gastro-esophageal junction. **B.** Barrett's esophagus with a suspicious nodule (*arrow*) identified during endoscopic surveillance. **C.** Histologic finding of intramucosal adenocarcinoma in the endoscopically resected nodule. Tumor extends into the esophageal submucosa (*arrow*). **D.** Barrett's esophagus with locally advanced adenocarcinoma.

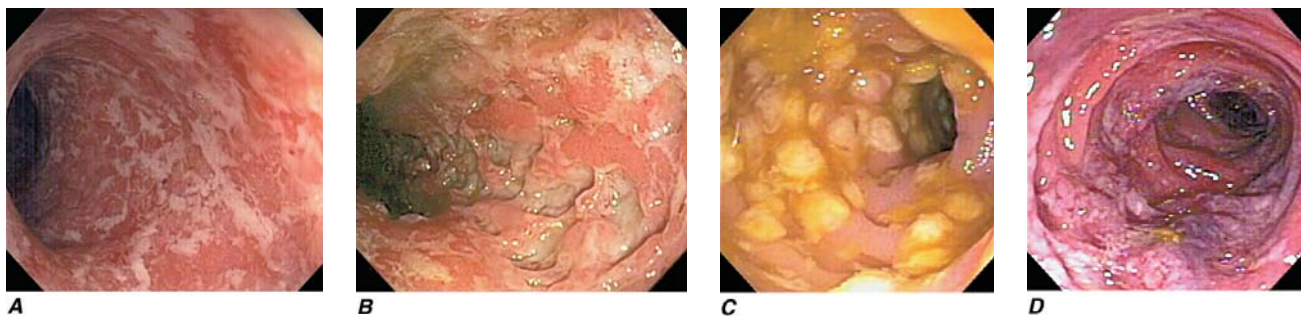


FIGURE e25-4 Causes of colitis. **A.** Chronic ulcerative colitis with diffuse ulcerations and exudates. **B.** Severe Crohn's colitis with deep ulcers. **C.** Pseudomembranous colitis with yellow, adherent pseudomem-

branes. **D.** Ischemic colitis with patchy mucosal edema, subepithelial hemorrhage, and cyanosis.

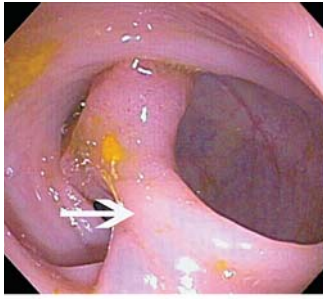


FIGURE e25-5 Colonic polyps. **A.** Pedunculated colon polyp on a thick stalk covered with normal mucosa (*arrow*). **B.** Sessile rectal polyp.

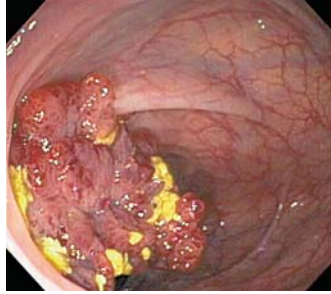


FIGURE e25-6 Colon adenocarcinoma growing into the lumen.



FIGURE e25-7 Capsule endoscopy image of jejunal vascular ectasia.

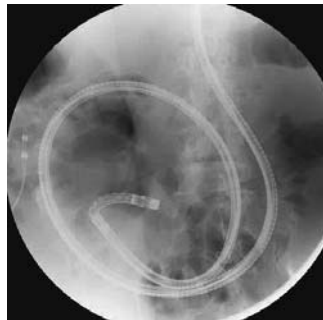


FIGURE e25-8 Radiograph of a double-balloon enteroscope in the small intestine. (Image courtesy of Dr. Ananya Das; with permission.)

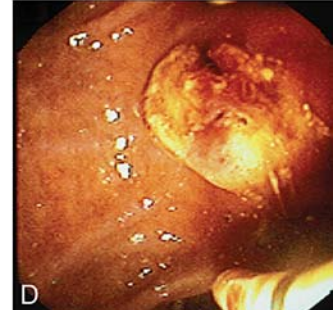
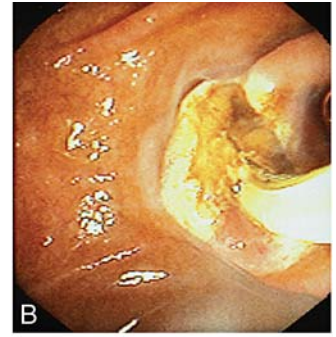
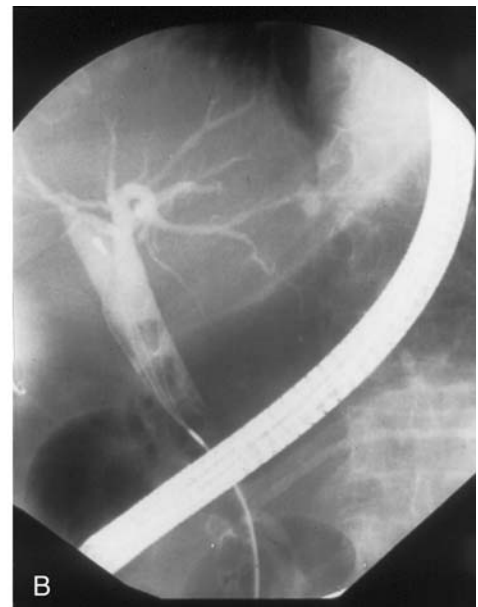
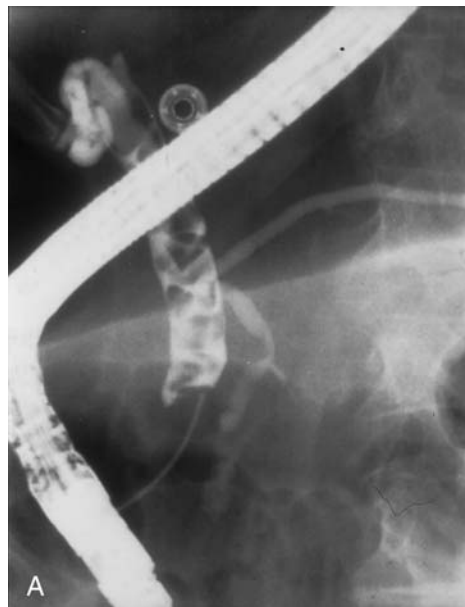


FIGURE e25-10 Endoscopic sphincterotomy. **A.** A normal-appearing ampulla of Vater. **B.** Sphincterotomy is performed with electrocautery. **C.** Bile duct stones are extracted with a balloon catheter. **D.** Final appearance of the sphincterotomy.

FIGURE e25-9 Endoscopic retrograde cholangiopancreatography (ERCP) for bile duct stones with cholangitis. **A.** Faceted bile duct stones are demonstrated in the common bile duct. **B.** After endoscopic sphincterotomy, the stones are extracted with a Dormia basket. A small abscess communicates with the left hepatic duct.



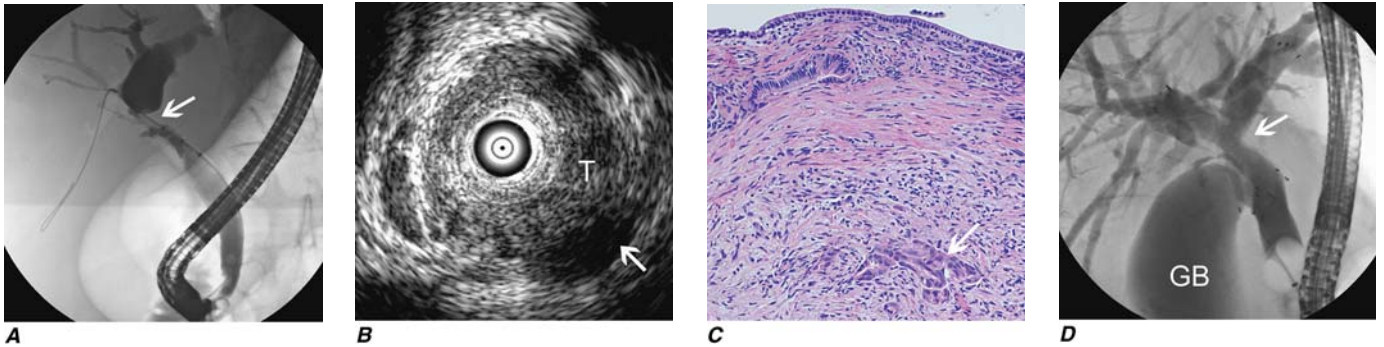


FIGURE e25-11 Endoscopic diagnosis, staging, and palliation of hilar cholangiocarcinoma. **A.** ERCP in a patient with obstructive jaundice demonstrates a malignant appearing stricture of the biliary confluence extending into the left and right intrahepatic ducts. **B.** Intraductal ultrasound of the biliary stricture demonstrates marked bile

duct wall thickening due to tumor (T) with partial encasement of the hepatic artery (*arrow*). **C.** Intraductal biopsy obtained during ERCP demonstrates malignant cells infiltrating the submucosa of the bile duct wall (*arrow*). **D.** Endoscopic placement of bilateral self-expanding metal stents relieves the biliary obstruction.



FIGURE e25-12 Bile leak (*arrow*) from a duct of Luschka after laparoscopic cholecystectomy. Contrast leaks from a small right intrahepatic duct into the gallbladder fossa, then flows into the pigtail of a percutaneous drainage catheter.

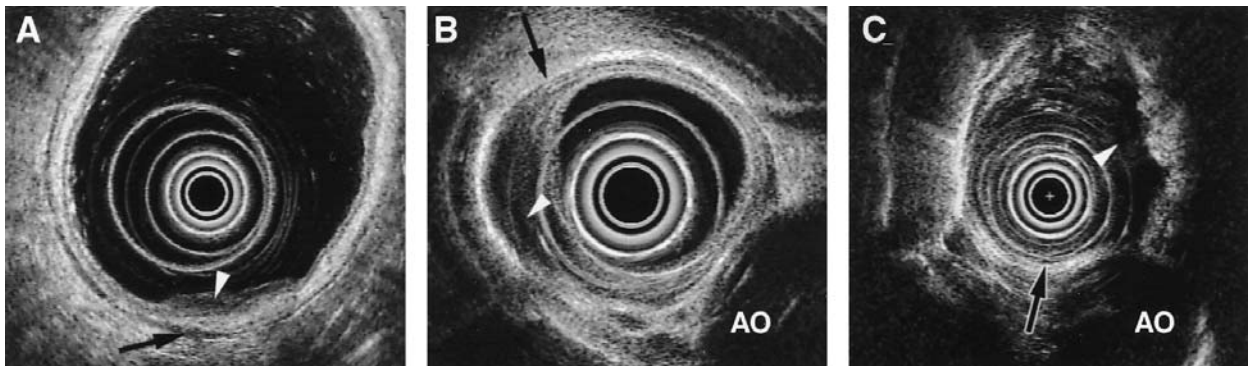


FIGURE e25-13 Local staging of gastrointestinal cancers with endoscopic ultrasound. In each example the white arrowhead marks the primary tumor and the black arrow indicates the muscularis propria (mp) of the intestinal wall. "AO" indicates aorta. **A.** T1 gastric can-

cer. The tumor does not invade the mp. **B.** T2 esophageal cancer. The tumor invades the mp. **C.** T3 esophageal cancer. The tumor extends through the mp into the surrounding tissue, and focally abuts the aorta.

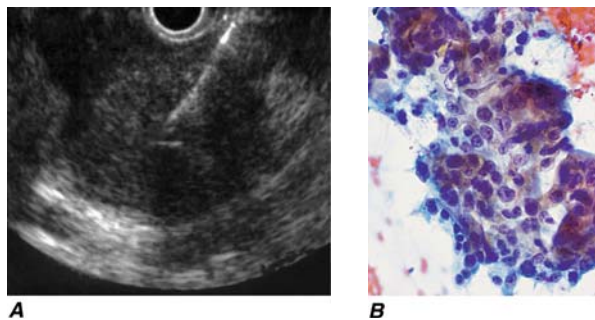


FIGURE e25-14 Endoscopic ultrasound (EUS)-guided fine-needle aspiration (FNA). **A.** Ultrasound image of a 22-gauge needle passed through the duodenal wall and positioned in a hypoechoic pancreatic head mass. **B.** Micrograph of aspirated malignant cells. (*Image B courtesy of Dr. Mary S. Chacho; with permission.*)

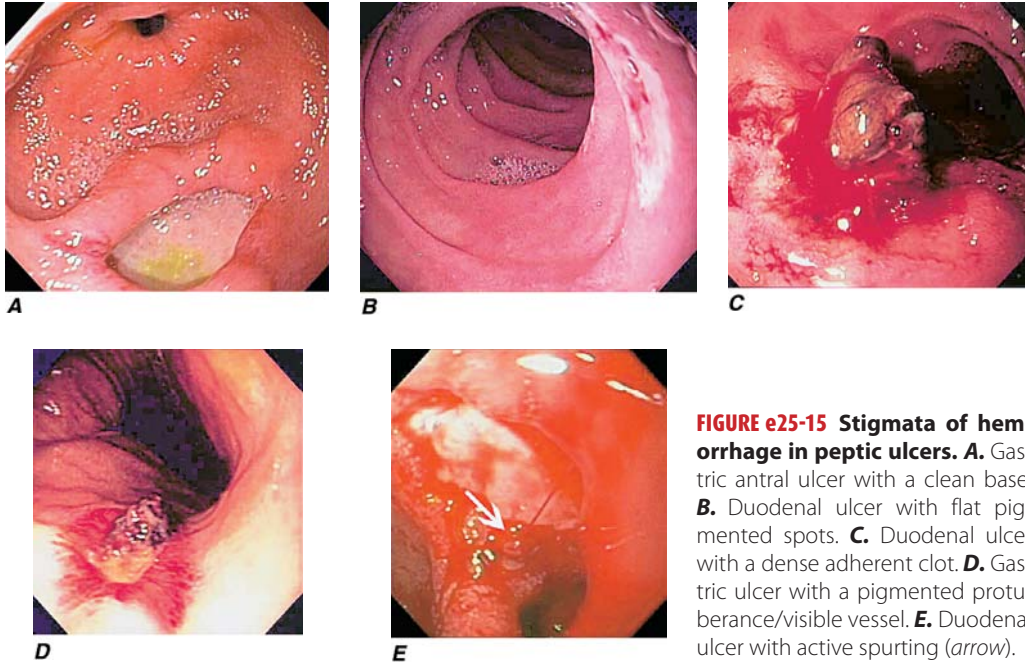


FIGURE e25-15 Stigmata of hemorrhage in peptic ulcers. **A.** Gastric antral ulcer with a clean base. **B.** Duodenal ulcer with flat pigmented spots. **C.** Duodenal ulcer with a dense adherent clot. **D.** Gastric ulcer with a pigmented protuberance/visible vessel. **E.** Duodenal ulcer with active spurting (arrow).

VIDEO e25-1 ([Play video](#)) Actively bleeding duodenal ulcer treated with endoscopic epinephrine injection, thermal probe application, and hemoclips. (Video courtesy of Dr. Navtej Buttar; with permission.)

VIDEO e25-4 ([Play video](#)) Dieulafoy's lesion treated endoscopically.

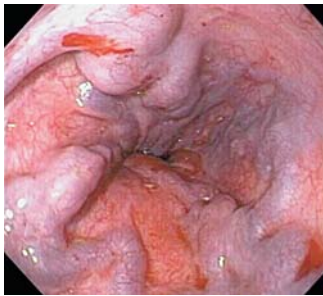


FIGURE e25-16 Esophageal varices.

VIDEO e25-2 ([Play video](#)) Actively bleeding varices treated with endoscopic band ligation.

VIDEO e25-3 ([Play video](#)) Large, actively bleeding gastric varix treated with endoscopic cyanoacrylate injection.



FIGURE e25-18 Mallory-Weiss tear at the gastroesophageal junction.

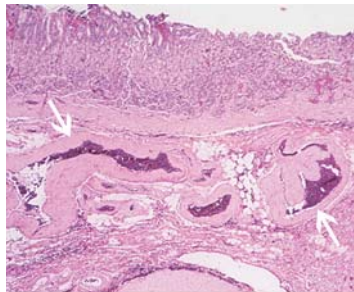
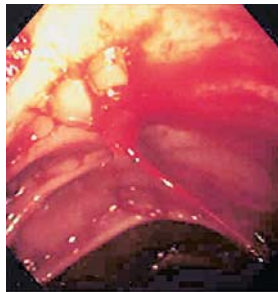


FIGURE e25-17 Dieulafoy's lesion. **A.** Actively spurting jejunal Dieulafoy's lesion. There is no underlying mucosal lesion. **B.** Histology of a gastric Dieulafoy's lesion. A persistent caliber artery (arrows) is present in the gastric submucosa, immediately beneath the mucosa.

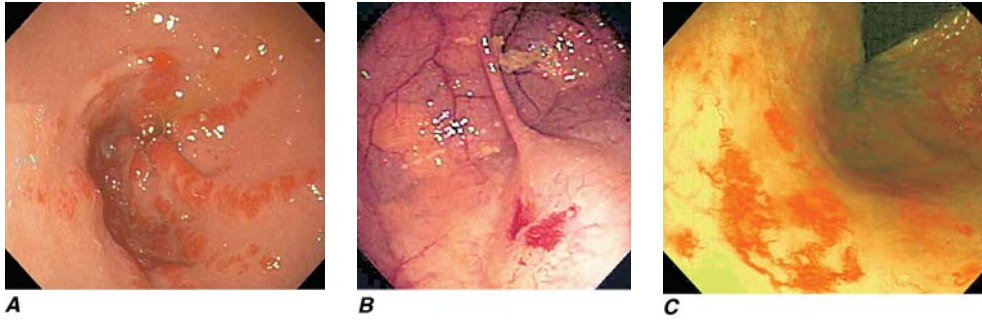


FIGURE e25-19 Gastrointestinal vascular ectasias. **A.** Gastric antral vascular ectasias, or “watermelon stomach,” characterized by prominent flat or raised red angioectatic stripes radiating in a spoke-like fashion from the pylorus to the antrum. **B.** Cecal vascular ectasias. **C.** Radiation-induced vascular ectasias of the rectum in a patient previously treated for prostate cancer.

VIDEO e25-5 (Play video) Actively bleeding colon diverticulum treated with dilute epinephrine injection.



FIGURE e25-20 Sigmoid volvulus with the characteristic radiological appearance of a “bent inner tube.”

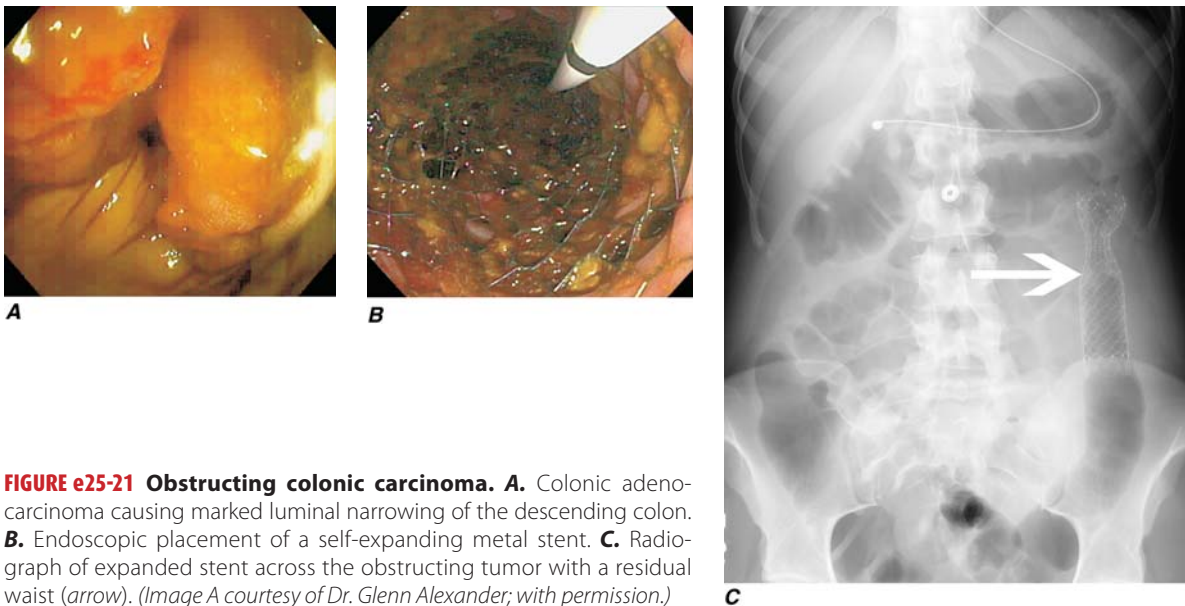


FIGURE e25-21 Obstructing colonic carcinoma. **A.** Colonic adenocarcinoma causing marked luminal narrowing of the descending colon. **B.** Endoscopic placement of a self-expanding metal stent. **C.** Radiograph of expanded stent across the obstructing tumor with a residual waist (arrow). (Image A courtesy of Dr. Glenn Alexander; with permission.)

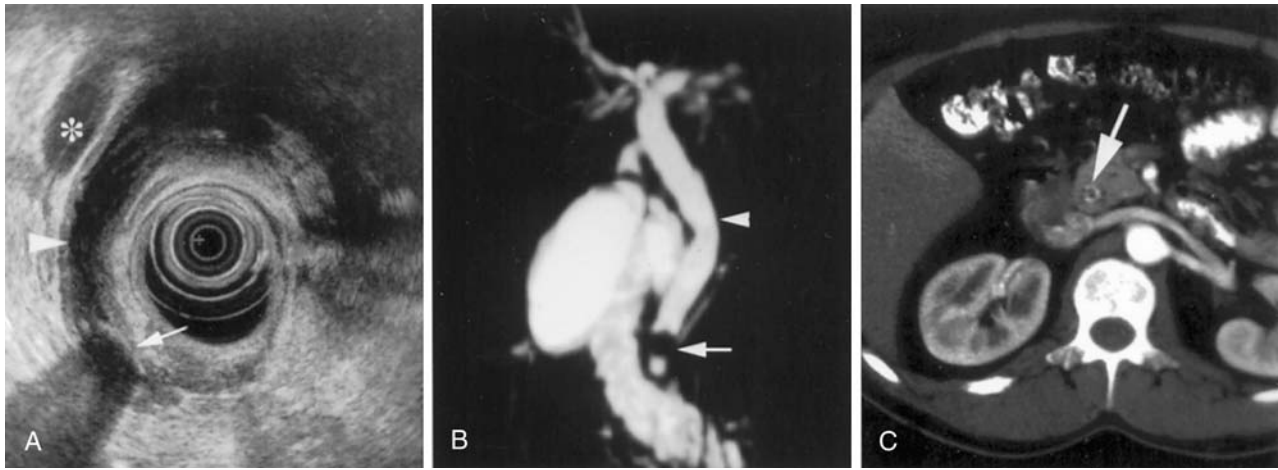


FIGURE e25-22 Methods of bile duct imaging. Arrows mark bile duct stones. Arrowheads indicate the common bile duct, and the asterisk marks the portal vein. **A.** Endoscopic ultrasound (EUS). **B.** Magnetic resonance cholangiopancreatography (MRCP). **C.** CT.

VIDEO e25-6 (Play video) Impacted biliary stones removed during endoscopic retrograde cholangiopancreatography.

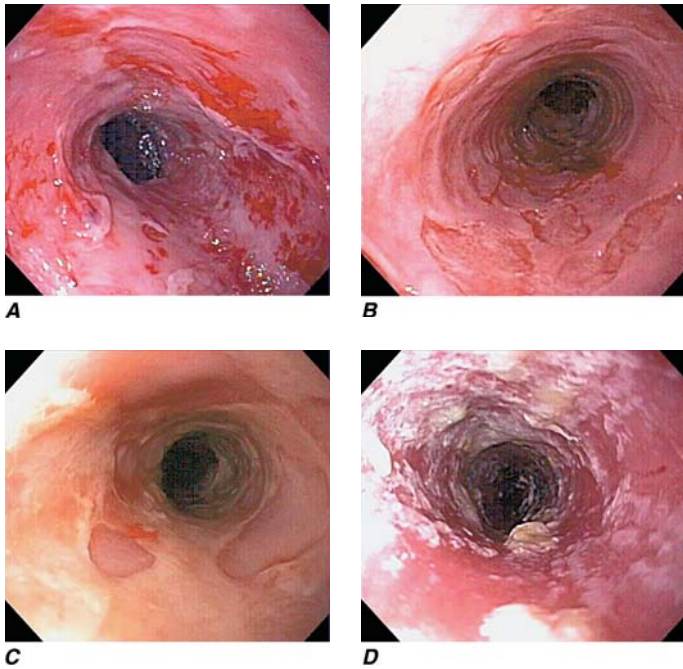


FIGURE e25-23 Causes of esophagitis. **A.** Severe reflux esophagitis with mucosal ulceration and friability. **B.** Cytomegalovirus esophagitis. **C.** Herpes simplex virus esophagitis with numerous shallow ulcers. **D.** Candida esophagitis with white plaques adherent to the esophageal mucosa.



FIGURE e25-24 Peptic esophageal stricture associated with ulceration and scarring of the distal esophagus.

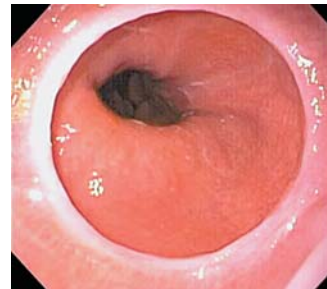


FIGURE e25-25 Schatzki's ring at the gastro-esophageal junction.



FIGURE e25-26 Eosinophilic esophagitis with multiple circular rings of the esophagus creating a corrugated appearance, and an impacted grape at the narrowed esophagogastric junction. The diagnosis requires biopsy with histologic finding of ≥ 20 eosinophils/high power field.



FIGURE e25-27 Scalloped duodenal folds in a patient with celiac sprue.

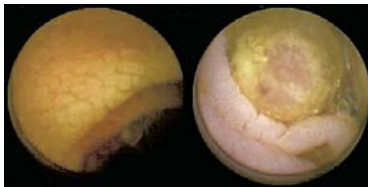


FIGURE e25-28 Capsule endoscopy images of a mildly scalloped jejunal fold (*left*) and an ileal tumor (*right*) in a patient with celiac sprue. (Images courtesy of Dr. Elizabeth Rajan; with permission.)

VIDEO e25-7 ([Play video](#)) Pedunculated colonic polyp removed with snare cautery during colonoscopy.



FIGURE e25-29 Innumerable colon polyps of various sizes in a patient with familial adenomatous polyposis syndrome.

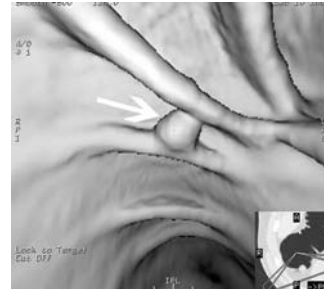


FIGURE e25-30 Virtual colonoscopy image of a colon polyp (*arrow*). (Image courtesy of Dr. Jeff Fidler; with permission.)



FIGURE e25-31 Internal hemorrhoids with bleeding (*arrow*) as seen on a retroflexed view of the rectum.

VIDEO e25-8 ([Play video](#)) Organized pancreatic necrosis treated by transduodenal endoscopic drainage.

