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S t o m a c h

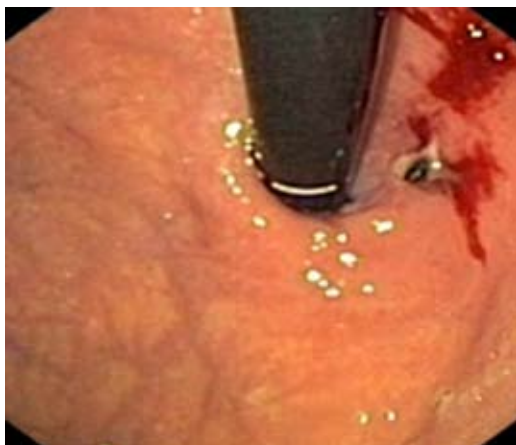
Stomach

Case 1

Surachai Amornsawadwattana, MD.

Rungsun Rerknimitr, MD.

A 79-year-old female, presented with hematemesis, an emergency EGD was performed. The findings are shown as below.



A non-bleeding visible vessel was seen at gastric cardia just below the Z line. No ulcer was detected. Thus, [Dieulafoy's lesion of stomach](#) is the most likely diagnosis in this patient. Then hemoclipping was applied in order to stop the bleeding.

Discussion:

Dieulafoy's lesion, also names cirroid aneurysm or submucosal arterial malformation¹, is one of the uncommon causes of non-variceal GI bleeding characterized by submucosal artery protruding the normal-appearing mucosa². It can be found in almost every part of the GI tract from esophagus to anal canal, but the typical site is the 6 cm. area within esophagogastric junction at proximal part of gastric lesser curvature¹. Lee YT, et al¹. described the endoscopic criteria for the diagnosis of Dieulafoy's lesion as 1) active arterial spurting or micropulsatile streaming of blood from a small mucosal defect or through normal mucosa; 2) direct inspection of a protruding vessel, with or without active bleeding, within a minute mucosal defect or through normal mucosa; or 3) adherent clot with a narrow point of attachment to a small mucosal defect or to normal surrounding mucosa. There is no true gold standard of treatment in the patients with Dieulafoy's lesion². In the past, surgery was the treatment of choice to control bleeding. Nowadays, successful endoscopic thearpies of

this lesion with thermal methods, band ligation, injection and hemoclippping have been described³. The success rate of control beeding ranges from 75% with injection therapy alone to 100% from combined methods². If hemoclippping is applied the success can be relied on either direct obliteration of the vessel or clipping submucosal artery that located distant to the lesion³.

References

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Case 2

Satimai Aniwan, MD.

Naruemon Klakeaw, MD.

Rungsun Rerknimitr, MD.

A 34-year-old-Thai man, previously healthy, presented with abdominal pain and diarrhea for 2 weeks. He had no fever, melena, or hematochezia. His temperature was 36.5°C. Abdominal examination found decreased bowel sound and ascites with generalized rebound tenderness. The leukocyte count was 15,750 cells per cubic millimeter, with 32% of neutrophils, 14% of lymphocytes, 2% of monocytes, and 50% of eosinophils. The hematocrit was 48%. The platelet count was 188,000/mm.³ The result of stool study for ova and parasites was negative. Abdominal paracentesis showed mild turbid straw-colored fluid that contained WBC 4,500/mm.³, eosinophils 90%. The serum ascites albumin gradient (SAAG) was 0.8 with total ascetic fluid protein of 5.38g/dL. Computed tomography of the abdomen demonstrated thickening wall of the small and large intestines and large amount of ascites was also detected.

Endoscopic findings showed mucosal edema and erythema of gastric antrum (A), circumferential mucosal edema and punctate erythema of duodenum (B), patchy area in sigmoid colon with mucosal edema and erosion (C, D) Biopsies from the duodenum and sigmoid colon showed moderate chronic and acute duodenitis with eosinophilic tract infestation (green arrow) (E) and acute colitis with increased eosinophilic infiltration. (F)



A



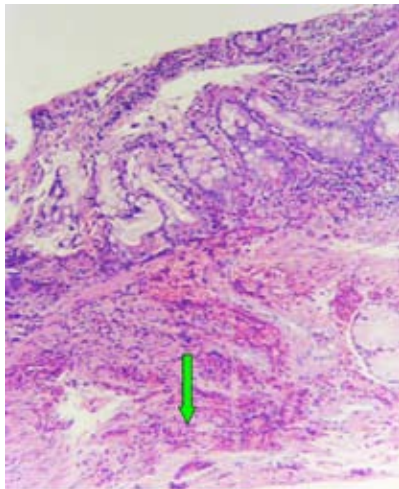
B



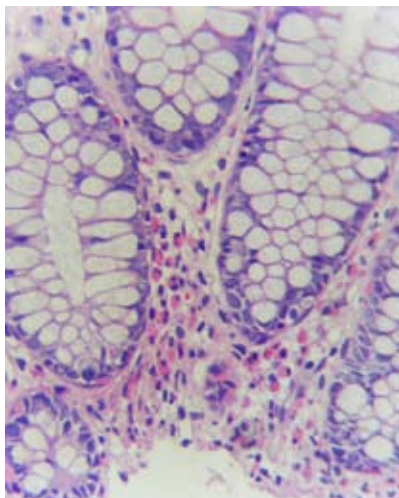
C



D



E



F

Diagnosis:

Eosinophilic gastroenterocolitis (EGE)

Discussion:

EGE is exceedingly rare, lacking epidemiological data to estimate its true frequency. It can affect any age group, but the peak incidence is in the third to fifth decade of life. There is a slight male predominance of about 1.4:1. EGE is a benign disorder, albeit the natural course of the disease is unknown. The Klein classification separates EGE into mucosal, muscular or (sub)serosal disease as the clinical presentation is dependent on the involved layer of the gastrointestinal tract. Approximately 57.5% have mucosal, 30% muscular and 12.5% (sub)serosal disease, respectively.¹ Patients with predominant mucosal disease present with symptoms similar to inflammatory bowel disease. This may include vomiting, abdominal pain, diarrhoea, gastrointestinal bleeding, iron deficiency anaemia, malabsorption, protein-losing enteropathy, or failure to thrive. Disease involving the muscularis propria typically presents with obstructive symptoms. Distinguishing features of serosal involvement are

the presence of ascites (with a low serum: ascites albumin gradient), bloating, a high peripheral eosinophil count, and possibly features of peritonitis. The diagnosis of EGE may be elusive. Symptoms are non-specific. Peripheral eosinophilia is variable; the eosinophil count is normal in 25% of patients. Mucosal disease is the most readily diagnosed form of EGE, given that endoscopy can directly visualize any mucosal changes and acquire biopsies. Endoscopic features are nevertheless rather nonspecific: thickened folds, erythema, friability, nodularity, and abnormal peristalsis. Biopsies show increased eosinophils; however, no standards of diagnosis have been established. Indeed, the “normal” number of eosinophils has not been defined and criteria may differ between pathology departments. Serosal disease may be identified as part of an evaluation for ascites. Laparoscopy may reveal thickening of the peritoneum (both parietal and visceral) and white nodules; serosal biopsies are essential for the diagnosis. Other causes, such as malignancy or tuberculosis, must be

excluded. The rarity of EGE has limited any large prospective randomized therapeutic trials. The mainstay of treatment in non-obstructive disease is corticosteroid therapy. Those with serosal disease appear to experience the greatest response to corticosteroids. Elimination or elemental diets may be helpful in patients with mucosal disease or identified allergic response to foods.^{2,3}

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Case 3

Satimai Aniwan, MD.
Rungsun Rerknimitr, MD.

An 81-year-old Thai man, presented to the hospital with postprandial fullness and vomiting for one week. He developed coffee ground hematemesis one day before admission. Clinical examination demonstrated marked anemia and mild abdominal distension. Endoscopic examination showed moderate amount of food content and circumferential ulcerative mass in the narrowing lumen of gastric antrum (Figures A, B). The endoscope could not be advanced further. Computer tomography scan of the abdomen confirmed the presence of stenosis at the level of gastric antrum. (Figures C, D). The gastric antrum wall was diffusely and circumferentially thickened by showing heterogeneous enhancement and dilatation of the proximal stomach. Biopsy from gastric mass revealed poorly differentiated adenocarcinoma



A



B



C



D

Diagnosis:

Malignant gastric outlet obstruction from poorly differentiated adenocarcinoma of the stomach

Discussion:

The incidence of malignancy in patients presenting with gastric outlet obstruction is greater than 50%. The etiology of gastric outlet obstruction cannot be predicted by age, or history of peptic ulcer disease, or history of non-steroidal anti-inflammatory drug use¹. Gastric cancer is the second leading cause of cancer-related death in the world including Asia. Given the diversity of gastric cancer, it is important to clarify the features of gastric cancer². The most common tumor locations between the two continents (ASIA-WEST) are different; most gastric cancer is located distally in Asia, whereas proximal cancer is dominant in North America. Despite these differences, the overall surgical outcomes for stage-

adjusted gastric cancers are similar between the two regions, indicating that the biologic behaviors of gastric cancer are similar³. Surgery is the primary treatment option for medically fit patients with localized respectable gastric cancer. However in the West, surgery alone is an insufficient therapy for most patients. Subtotal gastrectomy is preferred for distal gastric cancers whereas proximal or total gastrectomy is recommended for proximal tumors².

References

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3. Noguchi Y, Yoshikawa T, Tsuburaya A, Motohashi H, Karpeh MS, Brennan MF. Is gastric carcinoma different between Japan and the United States? *Cancer* 2000;89:2237-46.

Case 4

Satimai Aniwan, MD.
Rungsun Rerknimitr, MD.

A 49-year-old Thai man, presented to the emergency room with hematemesis after a period of retching and emesis for 3 days. Before admission, he consumed a heavy amount of alcohol for 1 week. EGD was performed. During endoscopy, he developed an uncontrolled retching, during which time a large fold of gastric mucosa repeatedly prolapsed upward into the distal esophagus. (Figure A) The retroflex view showed prolapsing gastric fold and subepithelial hemorrhage of proximal stomach. (Figure B) EGD also showed a large sliding hiatal hernia, reflux esophagitis and Mallory-Weiss tear at esophagogastric junction.



Figure A During retching, prolapsed gastric mucosa can be seen from the esophagus (yellow arrow).

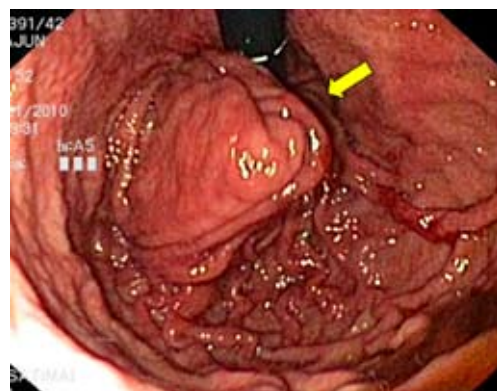


Figure B A Retroflex view showed subepithelial hemorrhage and congested mucosa of proximal stomach (yellow arrow).

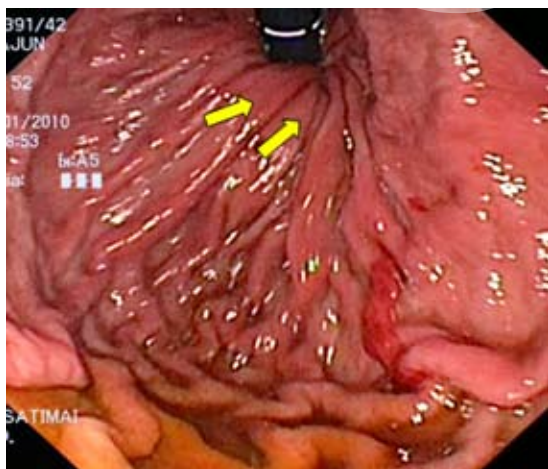


Figure C Showing a sliding type hiatal hernia (yellow arrow).

Diagnosis:

Prolapse gastropathy with a hiatal hernia

Discussion:

A prolapsed stomach causing acute gastric mucosal injury is within the most unusual causes of UGIB, accounting for 2–5% of the upper gastrointestinal episodes. Prolapse gastropathy is a syndrome characterized endoscopically by a focal area with subepithelial hemorrhage and, occasionally, erosions within a few centimeters of the cardioesophageal junction. This mucosal area may be seen to be the apex of a knuckle of gastric mucosa, most commonly coming from the 10 o'clock position which prolapses into the distal esophagus during retching, often prior to hematemesis¹. The retching causes a mucosal prolapse by forcefully stretching mucosa into the esophagus. The active bleeding could be directly related to the in-

carceration of the prolapsed mucosa with the development of mucosal ischemia or causing a mucosal tear liked Mallory-Weiss syndrome. Should such prolapsed gastric mucosa become trapped above the esophagogastric junction? Perhaps by the constricting action of the physiological lower esophageal sphincter. If venous out flow becomes obstructed, progressive engorgement, edema, and bleeding would result².

Shepherd et al described the findings at endoscopic biopsy of 21 cases of prolapse gastropathy, demonstrating inflammation in 85%, submucosal haemorrhage in 38% and superficial ulceration in 10%⁴. Recognition of this lesion should lead to prompt treatment of the underlying cause of the nausea. Antiemetic or prokinetic medications might be beneficial, although data to support this approach are still lacking³.

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Case 5

Rapat Pittayanon, MD.

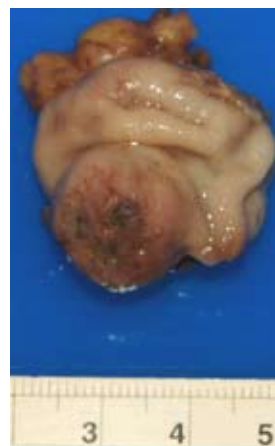
Thiridchai Supasit, MD.

Yudhtana Sattawatthamrong, MD.

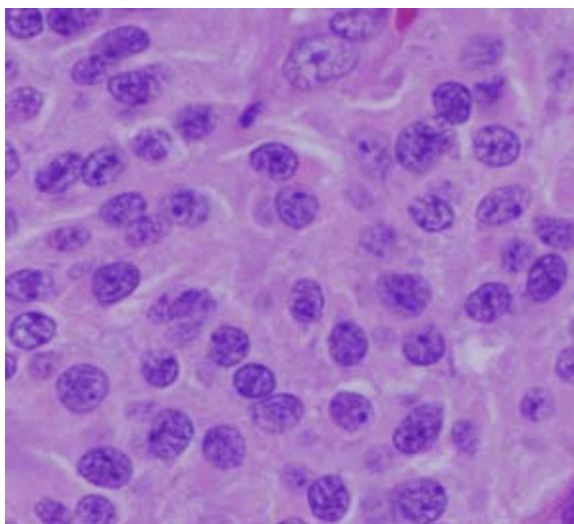
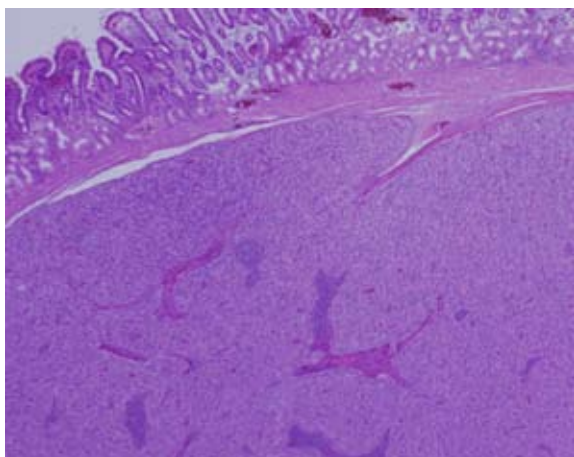
Naruemon Klaikeaw, MD.

Rungsun Rerknimitr, MD.

An 82-year-old Thai woman, presented with recurrent lower GI bleeding for 6 years. The physical examination was unremarkable. EGD revealed a 1.5 cm. submucosal mass with blood staining ulcer in the first part of duodenum. Surgical excision was performed.



Pathology revealed that the tumor was composed of vascularised, uniform round cells with benign appearing nuclei and rosette formation. These were characteristic feature of a carcinoid tumor. There was no evidence of malignant process.



the second least common site for carcinoid, however duodenal carcinoid, most are seen in duodenal cap and approximately 20% are in the second portion of duodenum^{3, 4}. The symptoms are non-specific and may be not associated to the lesion, such as abdominal pain, reflux or dyspepsia, and gastrointestinal bleeding. Moreover, the morphology in endoscopy is non-specific, so it is quite difficult to diagnosis this condition⁴. In the largest series of duodenal carcinoid tumors⁵ there were 3 identified pathologic features as independent risk factors for metastasis: invasion of the muscularis propria, size greater than 2 cm. and the presence of mitotic figures. However, two recent reports debated these features. One from Japan found that 13% of small (less than 1 cm.) duodenal carcinoid tumors were associated with regional lymph node metastases⁶. The other from Texas revealed the presence of regional lymph node metastases cannot be predicted reliably on the basis of tumor size (less than 1-1.5 cm.) or depth of invasion⁴. Endoscopic resection can be curative for the duodenal carcinoids smaller than 1 cm. that are located outside the periampullary region, with no EUS signs of invasion to the muscularis propria. The appropriate treatment for duodenal carcinoids tumors larger than 1 cm. is still controversial⁷. Some authors suggested that for tumors 1-2 cm. in diameter, the full-thickness excision is preferred⁸. In addition, the recent data in 2009⁹ reported the successful endoscopic completely resection of 1.5 cm. duodenal carcinoid tumor and after 1-year follow up, there was no recurrence.

Diagnosis:

Primary duodenal carcinoid tumor.

Discussion:

Primary duodenal carcinoid tumors are very rare. They contribute to only 2–3% of all gastrointestinal carcinoid tumors^{1, 2}. Duodenum is

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Case 6

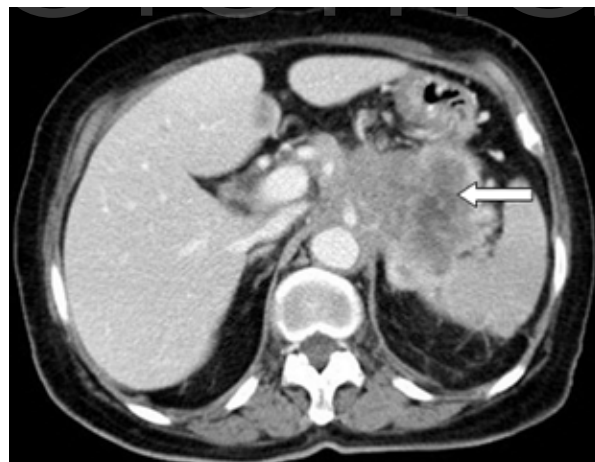
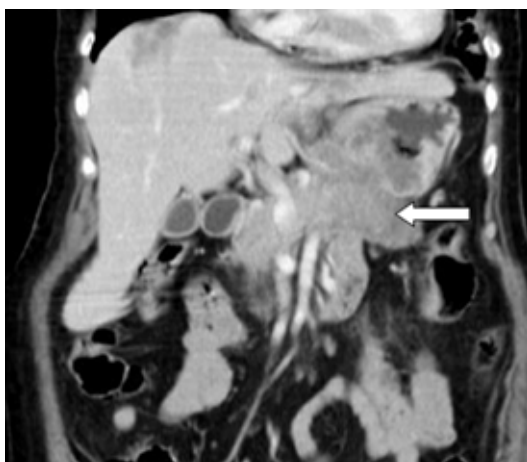
Satimai Aniwan, MD.

Rungsun Rerknimitr, MD.

A 76-year-old-Thai woman, presented with epigastric pain and weight loss for 2 months. She had been well until two months earlier when she began to have epigastric pain. Physical examination revealed a healthy-appearing woman with anemia and left axillary lymph node enlargement. The level of CA 19-9 in the blood was more than 1,000 IU per milliliter; the results of liver function were all within normal ranges. Esophagogastroduodenoscopy (EGD) showed a large ulcerative mass with necrotic tissue on top at gastric body (Figure 1). Computed tomographic (CT) scanning of the abdomen showed an infiltrative hypodense mass involving pancreatic tail, extending to body and cardia of stomach with multiple liver metastasis (white arrow) (Figures 2-3). Gastric biopsy showed poorly-differentiated adenocarcinoma. Left axillary lymph node biopsy confirmed as pancreaticobiliary type adenocarcinoma.



Figure 1 *Ulcerative mass in the gastric body*



Figures 2, 3 CT scan revealed pancreatic mass in the body and tail tumor blending to the posterior wall of stomach

Diagnosis:

Metastatic gastric tumor secondary to pancreatic adenocarcinoma

Discussion:

The stomach is an unusual site for metastasis. De Palma et al, reported that solitary gastric metastases were more common than multiple metastases. The solitary lesions were mainly located in the middle third (40%) or the upper third (40%) of the stomach, and the proportion of the solitary lesions was similar to that of the multiple lesions. Lung, breast, and esophagus are the common primary organs, and malignant melanoma is also associated with the highest rate of metastases¹. Gastric metastases from pancreatic adenocarcinoma are rare clinical events. These metastases are mainly reported from autopsy studies. Feczko et al. mentioned five pathways of secondary involvement of the gastrointestinal tract: 1) direct invasion; 2) intraoperative seeding; 3) hematogenous metastases; 4) lymphatic metastases; and 5) intraluminal or intramural dissemination². Secondary involvement of

the stomach from pancreatic carcinoma was reported to be due to dissemination, because the stomach is an adjacent organ. There are no specific clinical symptoms related to gastric metastases. The most frequent presenting symptom is bleeding, including occult bleeding, and a chronic occlusion syndrome accompanied by pain. Other reports have revealed nonspecific clinical manifestations including weight loss, anorexia, abdominal discomfort, and nausea/vomiting³.

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Case 7

Rapat Pittayanon, MD.

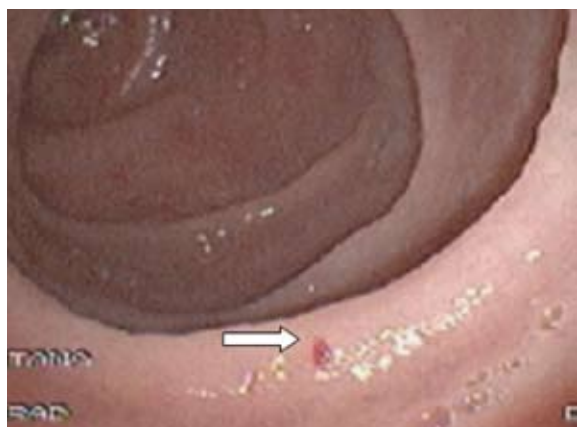
Yudhtana Sattawatthamrong, MD.

Rungsun Rerknimitr, MD.

A 77-year-old Thai female, presented with melena and anemic symptoms. She also had telangiectasia at her tongue. Complete blood count showed the hemoglobin level of 3g/dL.

Her family history revealed cerebral arteriovenous malformation (AVM) in her son and hepato-splenic AVM in her daughter.

The EGD showed multiple diffuse telangiectasia (small, red, well-defined lesions and sometimes surrounded by an anemic halo) (white arrow) in the gastric body and duodenum (Figures 1-3).



Figures 1-3 Demonstrating angiodysplastic lesions distributing in the gastric and duodenal mucosa

Diagnosis:

Hereditary Hemorrhagic Telangiectasia (Osler-Weber Rendu syndrome)

Discussion:

Gastrointestinal menifestration in hereditary hemorrhagic telangiectasia (HHT) or Osler-Weber Rendu syndrome is bleeding via telangiectases which occurs in 10% to 40% of patients with HHT and can be challenging to manage^{1, 2}. It usually occurs at the fifth or sixth decade of life³. The bleeding spot can be localized in the stomach or duodenum in most of the patients¹. The extention of telangiectases correlates well with the severity of a patient's anemia and blood transfusion requirement, particularly when more than 20 telangiectases are visualized on EGD. Therapies for this problem range from laser and cautery to a variety of pharmacologic agents².

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Case 8

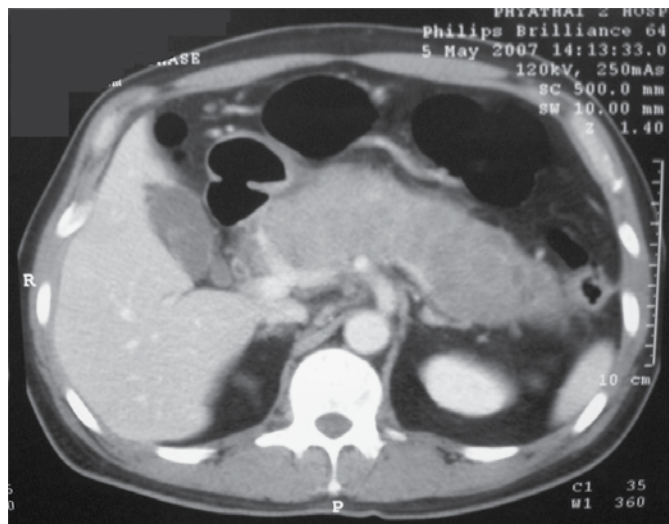
Thawatchai Akaraviput, MD.

Nonthalee Pausawasdi, MD.

A 51-year-old man, presented with abdominal discomfort and progressive jaundice. He lost 4 kg. in a month without any history of GI bleeding. His past medical history revealed malignant melanoma (MM) of the left thumb and he received a thumb amputation in the year 2006. Computer tomography and PET scan revealed multiple metastatic lesions in the liver, adrenal gland, and pancreas (Figures

1&2). Esophagogastroduodenoscopy demonstrated multiple black nodules ranging from 0.5-1 cm. in the stomach and duodenum (Figure 3). Biopsy showed MM metastases. Endoscopic ultrasonography (EUS) revealed a heterogenous pancreatic head lesion measuring 6x9 cm. (Figure 4). ERCP with placement of a plastic stent was performed to relieve biliary obstruction. Interferon alpha 2b were given three times a week as an adjuvant therapy. Unfortunately, he died 6 months after initiation of treatment.

Figure 1 CT scan revealed diffusely enlarged pancreas with peripancreatic lymphadenopathy.



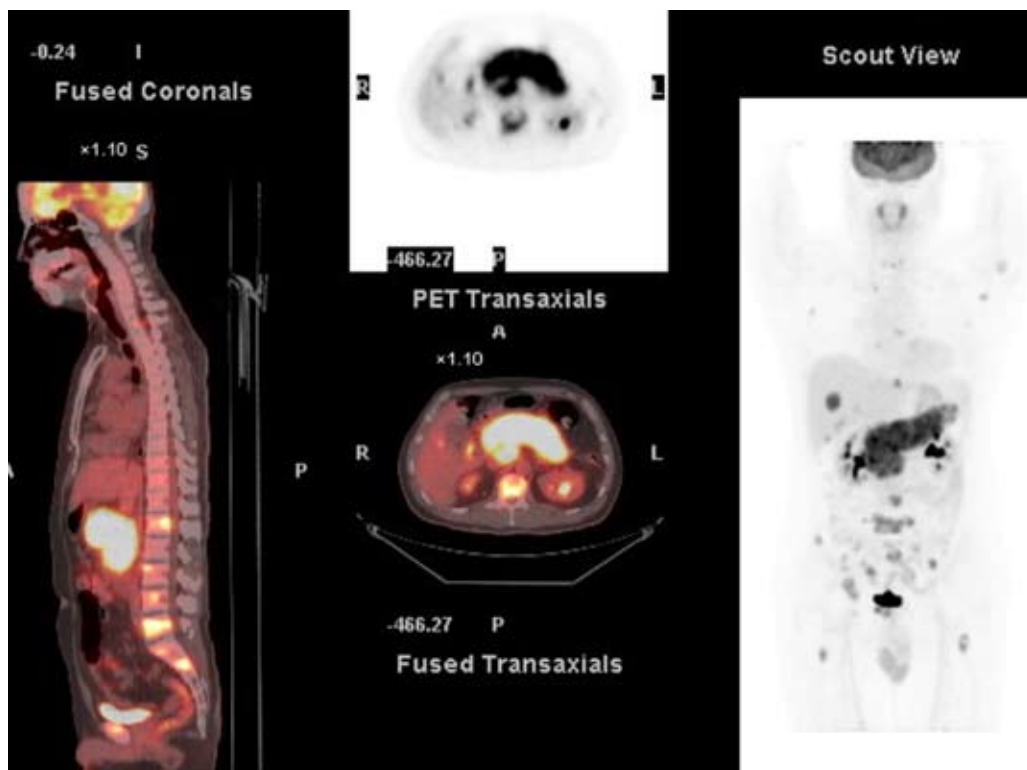


Figure 2 PET scan showed metastatic lesions of the pancreas, liver, left adrenal gland and bones.

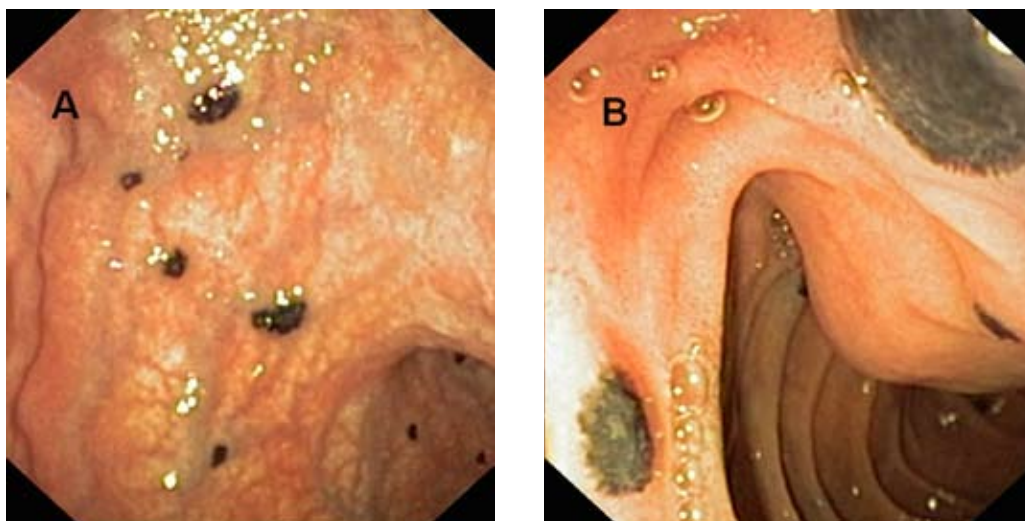


Figure 3 Multiple black nodules varying in size were seen in stomach (A) and duodenum (B).



Figure 4 EUS revealed a heterogeneous lesion measuring 9x6 cm. in the pancreatic head.

Diagnosis:

GI tract metastasis of malignant melanoma

Discussion:

Malignant melanoma (MM) is considered a highly aggressive cancer and it can metastasize to any organ of the body. Gastrointestinal (GI) metastasis has a wide range of clinical features, many of which can mimic primary GI malignancy. 70% of GI metastatic melanoma occurs in small bowel. However, it can occur in any part of the GI tract including stomach (25%), colon (22%), esophagus (5%), and rectum (2%)¹. These can present at the time of primary diagnosis or several years later as the first sign of recurrence^{2,3}. Reported here is a case of metastatic MM of GI tract presented with obstructive jaundice.

MM is a one of most common causes of GI metastases and it can present with non specific symptoms. Most common clinical feature is submucosal lesions causing obstruction or ulceration resulting in GI bleeding⁴. It is important to consider metastatic MM of the GI tract in patients with prior history of MM presenting with acute GI symptoms. Endoscopic procedures including EUS with fine needle aspiration is helpful in evaluating these patients.

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Case 9

Satimai Aniwan, MD.
Naruemin Klakeaw, MD
Rungsun Rerknimitr, MD.

A 57-year-old-Thai woman, presented with anemia, chronic dyspepsia, proteinuria and light chain hypergammaglobulinemia. She was admitted due to hematemesis. During the hospital stay, she developed hematochezia. EGD. and colonoscopy were done as shown. (Figures A, B, C, D and E) Kidney biopsy showed focal segmental glomerulosclerosis with positive Congo red staining in the mesangium and vascular wall. Bone marrow biopsy demonstrated significant plasmacytosis (plasma cell 20%) (Figure F). She was diagnosed as systemic amyloidosis secondary to multiple myeloma.

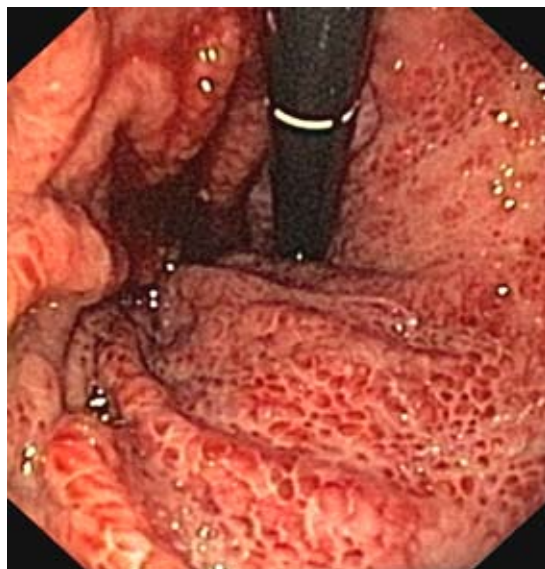


Figure A *submucosal hemorrhage at fundus and body of stomach*

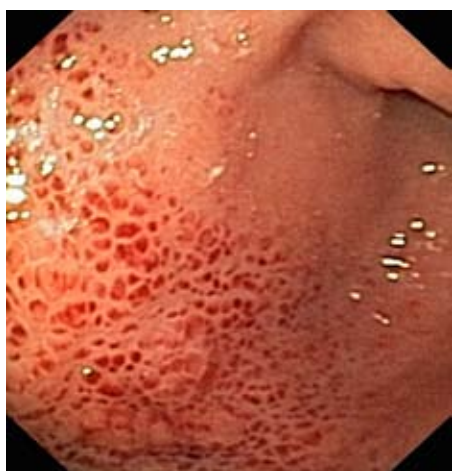


Figure B Demarcated zone of normal and abnormal mucosa

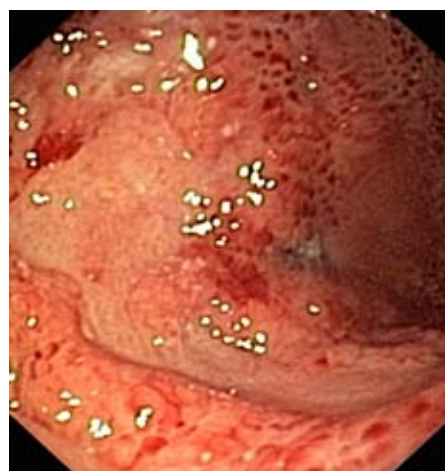


Figure C Small clean base ulcer in the terminal ileum



Figure D Submucosal hematoma in the colon

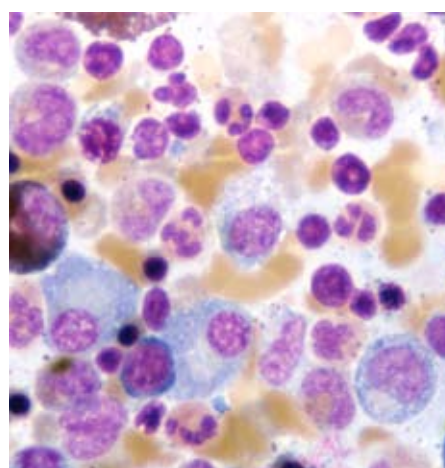


Figure E Bone marrow biopsy showed increased plasma cell (20%)

Gastric biopsy showed chronic active gastritis. Ileocolonic biopsy showed acute organizing ulcer with deposition of eosinophilic material.

Diagnosis:

Systemic AL amyloidosis secondary to multiple myeloma with gastrointestinal tract involvement

Discussion:

Systemic AL amyloidosis, the most common form of amyloidosis, is associated with an underlying but usually subtle clonal dyscrasia of plasma cells or B lymphoid cells. Systemic AL amyloidosis is very heterogenous disease. Renal involvement and cardiac involvement are usually the main manifestations. Typical gastrointestinal manifestations are nonspecific including macroglossia, hemorrhage, motility disorders, disturbance of bowel habit, and malabsorption. Gastric amyloidosis found only 1% of patients with AL amyloidosis. Small intestine is commonly affected in systemic amyloidosis. The symptoms are due to intestinal dysmotility or direct mucosal infiltration. Bleeding, occurs in 25-45% of patients with amyloidosis, may due to ischemia, ulceration or an infiltrated lesion^{1, 2}. Endoscopic findings of the gastrointestinal tract are nonspecific and include erythema, erosion, ulcerations, granular

or plaque-like mucosa of stomach and small intestine³.

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Case 10

Kittiya Setrkraising, MD.
Voranut Chongsrisasawat, MD.

A 5-year-old boy, presented with severe anemia and physical examination revealed arteriovenous malformation on his body. There were multiple raised, bluish-purple lesions at trunk, extremities, both palms and soles which were compatible with angiokeratoma by skin biopsy. He had no overt gastrointestinal bleeding but fecal occult blood test was always positive. The laboratory finding revealed a hematocrit level at 14.2%.

Endoscopic findings:

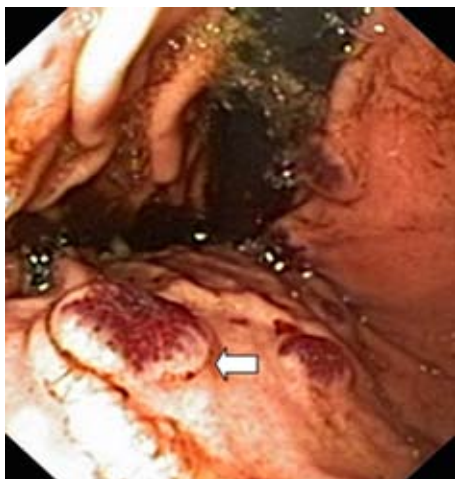
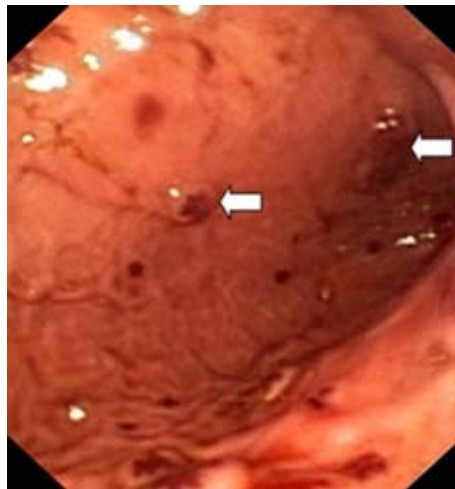
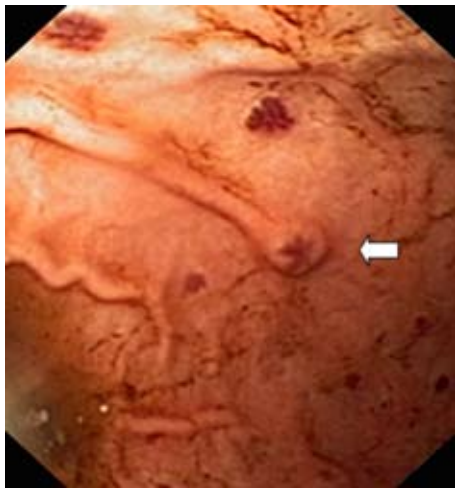
Multiple mucosal nodules with a bluish tinge and bluish polypoid lesions size 0.5–1 cm. were found along the whole gastrointestinal tract involving distal esophagus, stomach, duodenum, terminal ileum, cecum, whole colon, and rectum (white arrows).

Band ligation on the gastric lesion was performed. Argon plasma coagulation (APC) was applied to the lesions in stomach and colon. Stomach biopsy showed several dilated and tortuous small blood vessels in the lamina propria with vascular ectasia (venous dilatation) in which compatible with angiokeratoma as well.

Diagnosis:

Angiokeratoma involving the GI tract





Discussion:

Vascular lesions are a common cause of GI hemorrhage and may be solitary or multiple, benign or malignant, isolated or part of a syndrome or part of systemic disorder. Vascular lesions include angioectasia (angiodysplasia, vascular ectasia), arteriovenous malformation, Dieulafoy's lesion, telangiectasia, hemangioma, hemangioendothelioma.¹ These vascular lesions may be associated with rare diseases and syndromes, eg. blue rubber bleb nevus syndrome, hereditary hemorrhagic telangiectasia (Osler-Weber-Rendu disease), Ehlers-Danlos syndrome, and Klippel-Trenaunay-Weber syndrome. Many types of intestinal vascular lesions are associated with skin lesions. For example, approximately 50 percent of patients with intestinal hemangiomas also have cutaneous hemangiomas. However, angiokeratoma has not been described specifically to any syndrome yet.

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Case 11

Rapat Pittayanon, MD.

Rungsun Rerknimitr, MD.

A 40-year-old Thai woman, presented with anemic symptom and chronic abdominal discomfort. Physical examination revealed moderately pale and hyperpigmented spots at lower lip, 0.3 cm. in diameter. EGD was performed and the findings are shown in the figures 1 and 2.



Figure 1

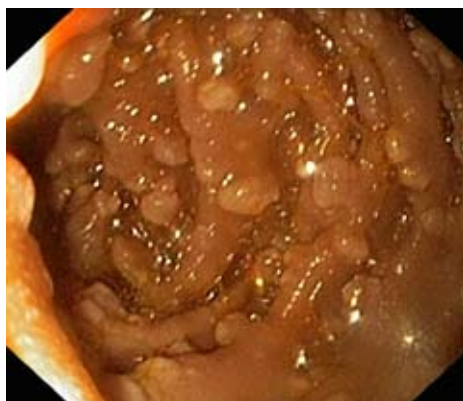


Figure 2

EGD finding:

Stomach and Duodenum

: A 4 cm. in diameter, large irregular lobular polypoid mass at prepyloric area (Figure 1)

: Multiple sessile polyps with whitish nodule on top and velvety surface at duodenal bulb, antrum, predominantly at second part of duodenum (Figure 1, 2)

Diagnosis:

Puetz-Jeghers Syndrome.

Discussion:

This patient was diagnosed as Puetz-Jeghers Syndrome (PJS) with hamartomatous polyps, labial melanin deposits, and small bowel polyposis¹. PJS is an autosomal dominant disease and most of the polyps are seen in the small intestine and colon (64% in each) and less frequent locations that found are stomach (49%), and rectum (32%), respectively². The risk for developing of these cancers (GI in origin) at age 40 years was less than familial polyposis coli (9%)³. However, many experts still recommend that the baseline upper endoscopy and small bowel series to be done at every 2–3 years¹.

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Case 12

Rapat Pittayanon, MD.

Rungsun Rerknimitr, MD.

A 75-year-old Thai woman, presented with chronic dyspepsia. Physical examination was unremarkable. Fujinon intelligence chromoendoscopy (FICE) revealed the villous pattern (Figure 1). Then, EGD with probe-based confocal laser endomicroscopy (pCLE) (Cellvizio, Muana Kea Technologies, Paris, France) and 10% fluorescein injection was performed. The findings in mosaic pattern are shown in figures 2 and 3.

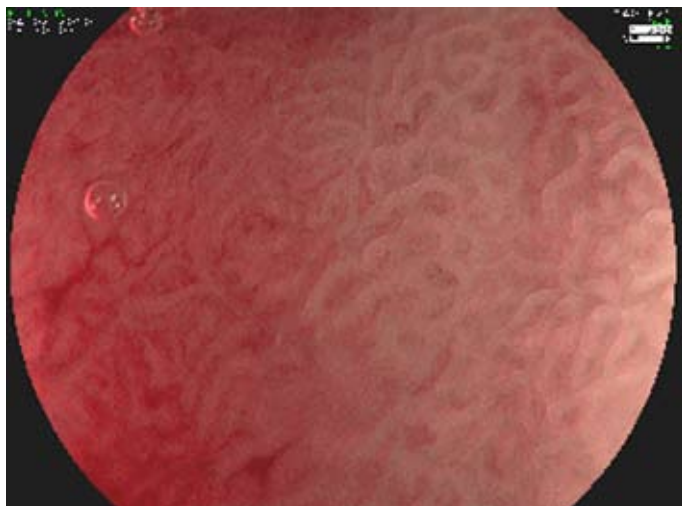


Figure 1 Villous gastric pit pattern by FICE at 415 and 540 nm.

EGD with pCLE finding:

Antrum: Columnar epithelium with mucin-containing goblet cells (arrow)

Capillary with regular shape was seen (arrow head)

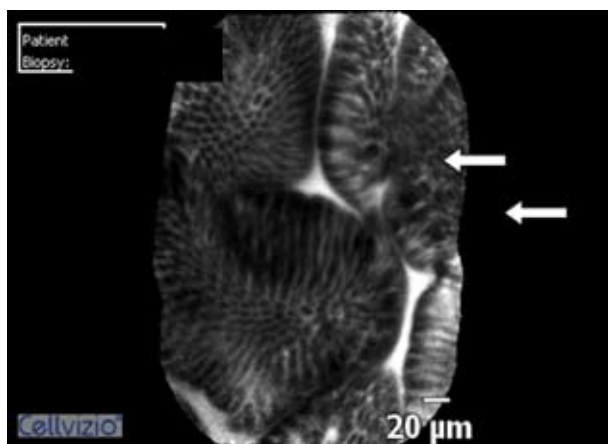


Figure 2 white arrow showed dark mucin content in goblet cell

Diagnosis:

Gastric intestinal metaplasia (GIM)

Discussion:

Confocal laser endomicroscope (CLE) is a powerful instrument for performing high-resolution (x1,000 time) imaging to enable real-time histology and/or optical biopsy at the time of endoscopic examination (in vivo histology)^{1, 2}.

The fluorescein establishes a stable distribution throughout surface epithelial which are mainly contained by regular columnar epithelium with round gland openings and cobblestone pattern including mixture of connective tissue matrix of lamina propria (blood vessels, which are regular shape visible in the deeper mucosa) and red blood cells^{2, 3}. It is not highly visible with mucins, hence mucins in goblet cells, which indicated GIM, will appear as a dark spot². Therefore, this patient was diagnosed as **gastric**

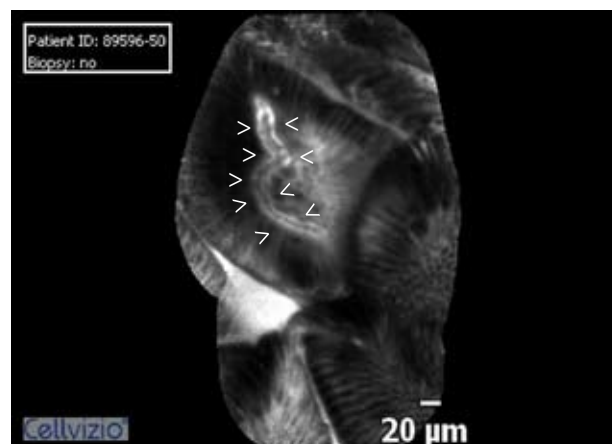


Figure 3 Arrow head showed inter capillary loop

intestinal metaplasia (GIM) and the pathology confirmed the diagnosis.

References

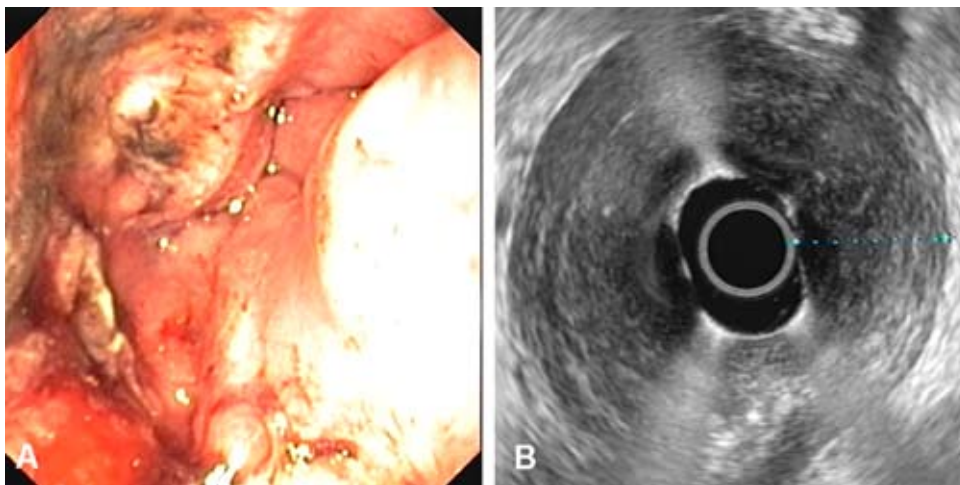
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Case 13

Sirinthip Sridermma, MD.

Supot Pongprasobchai, MD.

A 67-year-old woman with hypertension complained with dyspepsia and early satiety for 1 month. Physical examination revealed an ill-defined rubbery mass at the epigastrium. Esophagogastroduodenoscopy (EGD) and then endoscopic ultrasonography (EUS) were performed.



Endoscopic findings:

EGD showed a marked circumferential thickening of gastric wall starting from upper body to the level of incisura (Figure A). The antrum was normal. There was some ulceration on top of the thickened gastric folds.

EUS revealed a markedly thickened gastric wall measured as 18 mm. in the thickness. The wall was hypoechoic and there was a complete loss of the five distinct anatomic layers of varying echogenicity that could be identified in the

normal gastric wall (Figure B). There were enlarged celiac and porta hepatic lymph nodes and minimal ascites. Gastric linitis plastica was suspected. Gastric biopsy and EUS-FNA of the gastric wall were done.

Diagnosis:

Diffuse large B cell gastric lymphoma

Discussion:

Stomach is the most common site of extranodal non-Hodgkin's lymphomas (NHL). EGD with biopsy is the gold standard for the diagnosis. However, the endoscopic appearance of gastric lymphoma is highly variable and can present as: (a) ulcerative type: single or multiple ulcerations or multiple erosions (b) exophytic type: tumor-like appearance with an irregular or polypoid mass (c) hypertrophic type: large or giant folds, nodular pattern (d) gastric mucosal petechial haemorrhage pattern: a few or several petechial haemorrhages¹

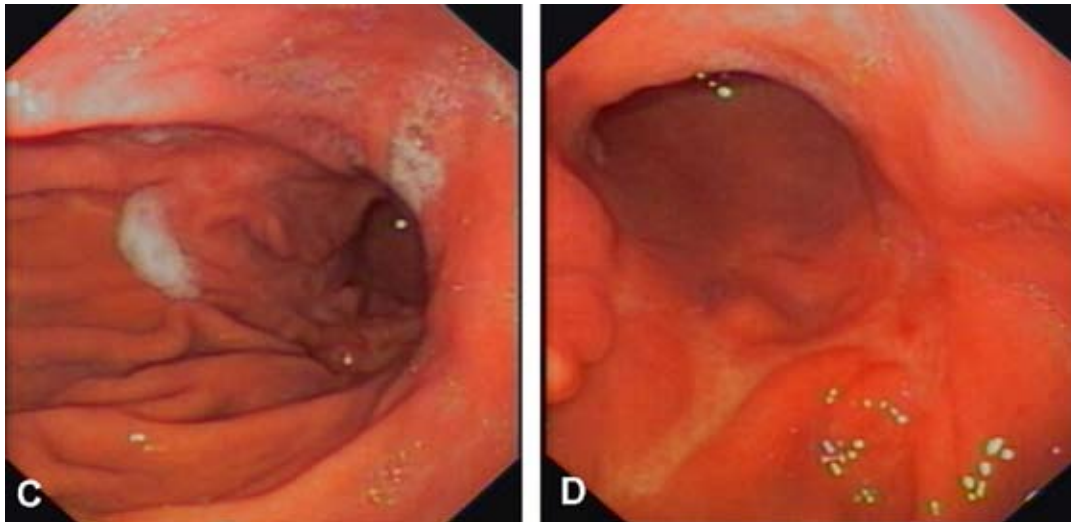
EUS is the most accurate imaging modality for evaluation and locoregional staging of gastric lymphoma and directly impacts the choice of treatment. The accuracy of EUS ranges from 91-95% and 77-83% for T and N staging, respectively.²

The EUS findings of gastric lymphoma are: (a) polypoid pattern with protrusion into the gastric lumen (b) localized thickening of the gastric wall with complete disruption of the various layers and superficial ulceration (c) a diffuse underlying

infiltration appearing as extended longitudinal wall thickening with localized ulcerations of the overlying mucosa like this patient.³ The mucosal involvement is often less extended than the infiltration of the underlying layers. The extended infiltration of the second and third layers with localized mucosal ulcerations is pathognomonic of lymphoma. Infiltrative gastric carcinoma may resemble lymphoma. However, the involvement of the gastric wall is always transmural and more echogenic than in gastric lymphoma, and involvement of the extramural structures and perigastric lymph nodes is much more common.³

EUS is also useful in assessing the surface spread (horizontal extension) of gastric lymphomas when surgery is contemplated. EUS-FNA of the gastric wall should be considered if EUS is abnormal but mucosal biopsy is negative, and consideration should be given to sample-representative lymph nodes regardless of size because up to 25% of metastatic lymph nodes may be <3 mm.

EGD and EUS can be used for monitoring response to medical therapy (*H. pylori* eradication or chemoradiation therapy), with disease regression manifesting as reduction in wall thickness, increase in wall echogenicity, normalization of wall layer pattern like in this patient after treated with chemotherapy (Figure C-D), and absence or reduction in the size or number of lymph nodes.²



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