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Case 1

A 78-year-old female with end stage renal disease, diabetes mellitus, and triple vessels disease, presented with melena. EGD was done and showed as Figure 1. CT scan of the whole abdomen was done and showed as Figure 2. While she was admitted to the intensive care unit, she developed an active gastrointestinal bleeding with hypotension. Subsequently, she underwent a successful angiography with gelfoam embolization (Figure 3).

Diagnosis:

Cavernous hemangioma of the duodenum

Discussion:

Hemangiomas are congenital benign vascular lesions that can be classified as capillary, cavernous, or

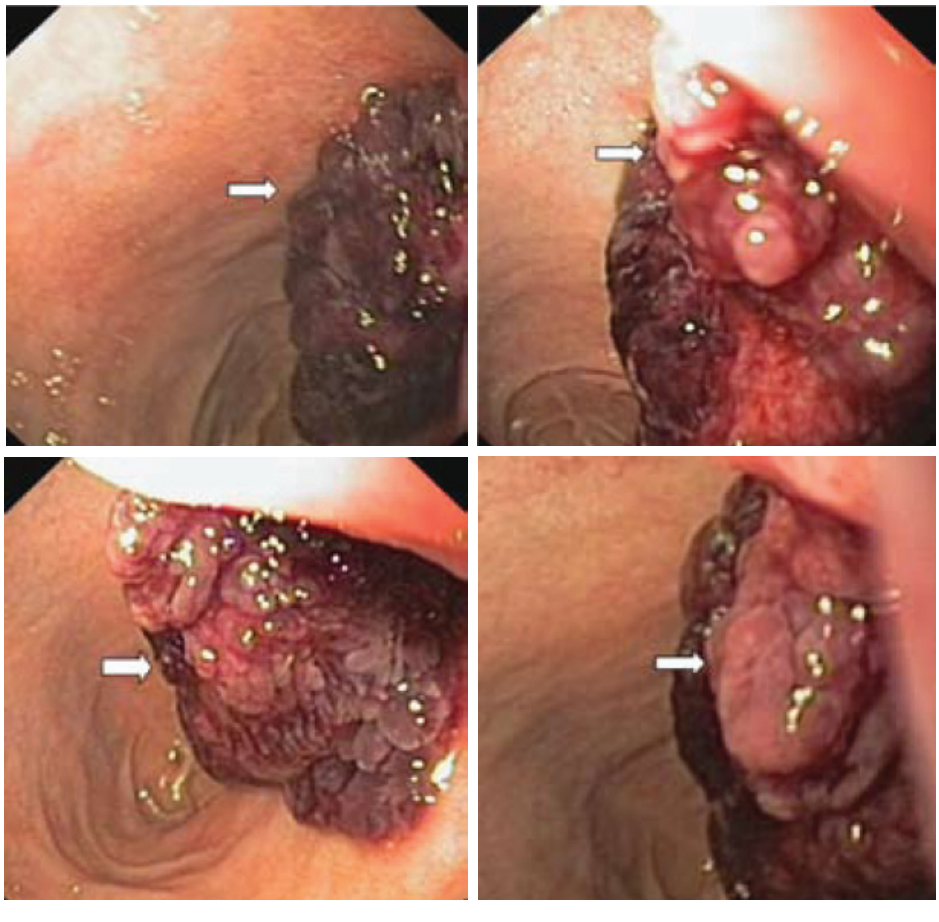

Figure 1. A large reddish-purplish exophytic mass (white arrow) size 5x5 cm. in diameter with blood clot on top occupied half of duodenal bulb and extended to pyloric channel without sign of active bleeding.

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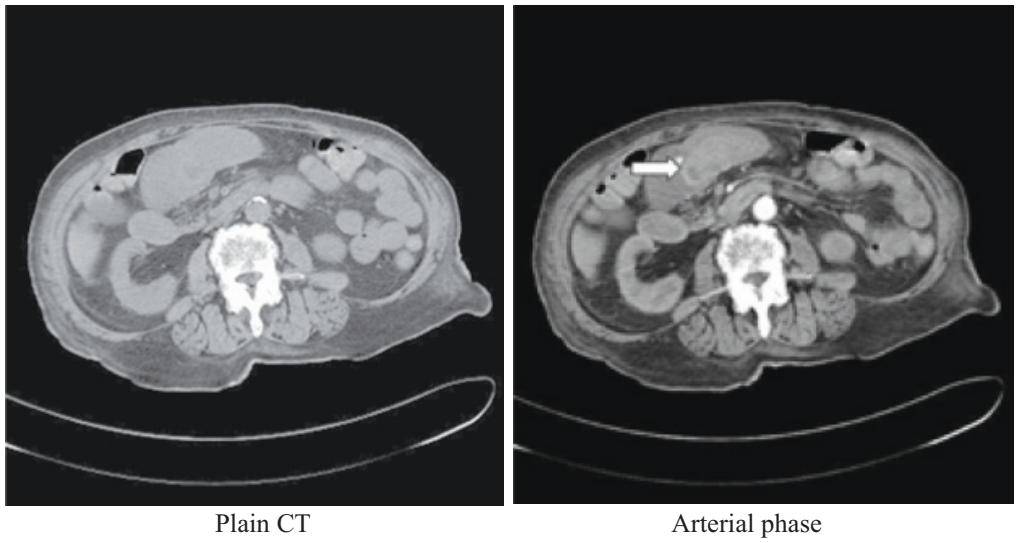
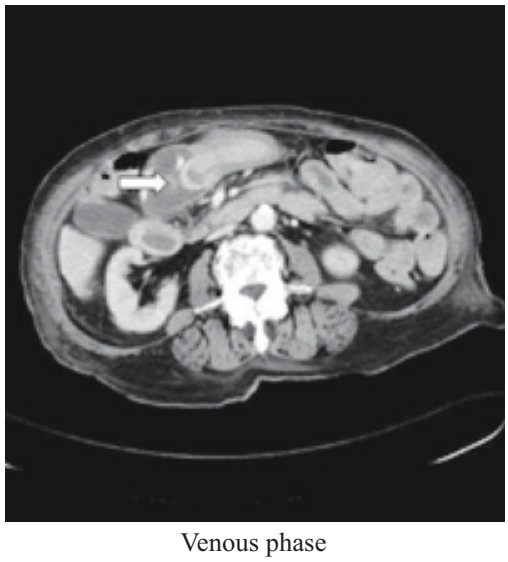


Plain CT Arterial phase



Venous phase

Figure 2. CT scan of the whole abdomen; showing intraluminal mass with cystic component protruding into duodenal bulb. Serpiginous arterial enhancing structures within duodenal bulb were observed (white arrow).

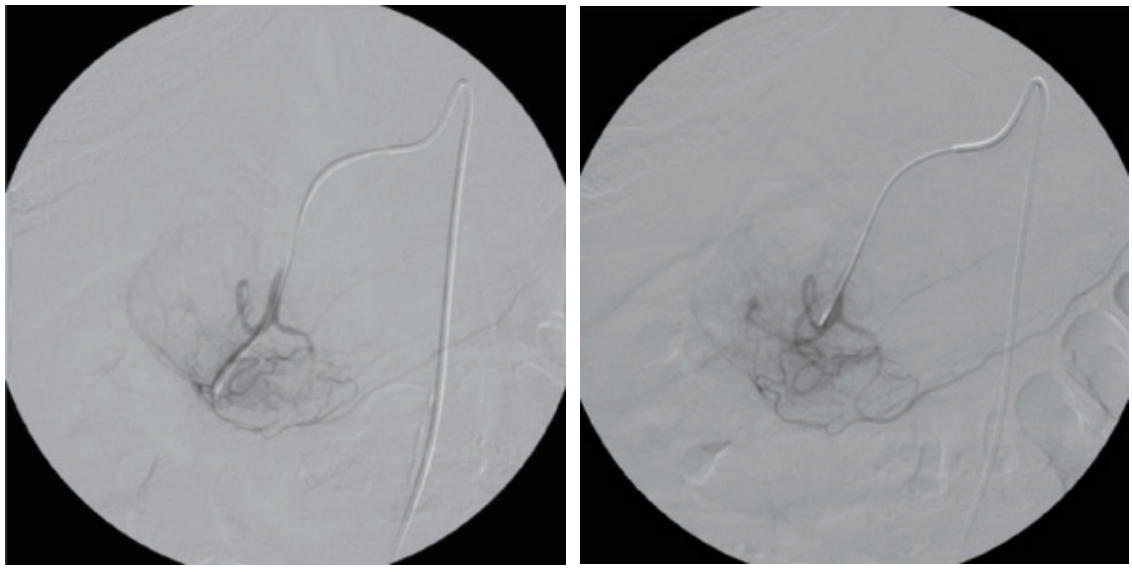


Figure 3. Angiography showed a vascular staining mass at duodenal bulb supplied by multiple capillaries network that originated from a branch of gastroduodenal artery, just distal to the origin of right gastroepiploic artery.

mixed type. Histologically, they are venous malformations and not true tumors. Hemangiomas are well circumscribed but not well encapsulated. Grossly, cavernous hemangiomas appear as polypoid or moundlike, reddish-purplish lesions on the mucosa. Histologically numerous dilatged, irregular, blood-filled spaces can be frequently seen in the two layers of mucosa and submucosa and sometimes extend through the muscular wall to the serosa. Lesions may be single, few, or many and maily located in the GI tract or may occur in association with various lesions in other areas of the body as part of a syndrome such as blue rubber bled nevus syndrome, Klippel-Tr_ naunay-Weber syndrome, Maffucci syndrome, Proteus syndrome, and diffuse neonatal hemangiomatosis. Majority of patients present with evidence of acute or chronic GI bleeding, although obstruction, intussusception, and perforation may occur[1,2]. The small intestine, especially the jejunum, is the most common site of involvement, followed by the colon, especially the rectosigmoid[3]. Focal calcification, thrombi, and hyalinization may be present and phleboliths, especially in clusters. Barium examination of the small intestine typically reveals a compressible polypoid intraluminal mass or a nodular filling defect with mucosal irregularities[1,2]. Resection of hemangioma is the only curative method. In case of acute bleeding, angiography and embolization can be used but bleeding recurrence is common issue[4,5].

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CASE 2

A 34-year-old woman has been diagnosed with familial adenomatous polyposis (FAP). She was undergone total colectomy for 14 years. She was healthy without complaint of abdominal or constitutional symptoms. A surveillance side-view duodenoscopy was performed.

Side-view duodenoscopy revealed a polypoid lesion at the ampulla (Figure 4) and few sessible polypoid lesions at the second part of duodenum (red arrows) (Figure 5). Duodenal and ampulllary biopsies revealed tubular adenoma with low-grade dysplasia.

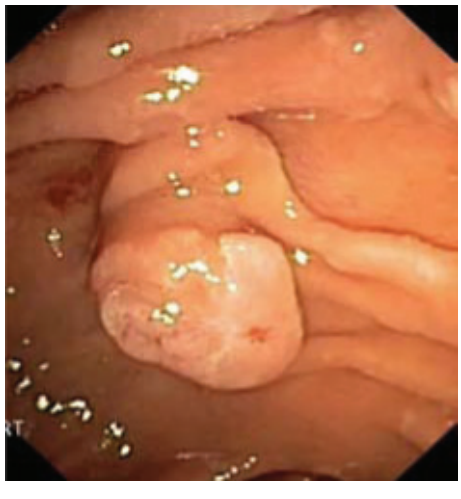

Figure 4.

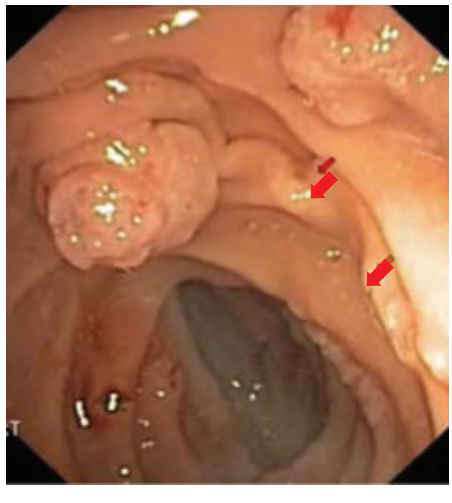

Figure 5.

Diagnosis:

Ampullary and duodenal adenoma in FAP

Discussion:

Germ line mutation in tumor suppressor gene, APC, is the main pathogenesis of familial adenomatous polyposis syndrome. This mutation involves in the initial step of the change from normal mucosa to adenomatous mucosa and a part of adenoma-adenocarcinoma sequence. Patients usually presented with numerous, up to thousand, adematous polyps throughout the colon. Apart from colonic involvement, FAP patients are at risk for desmoid tumor (relative risk; RR = 852), hepatoblastoma (RR = 847), duodenal cancer (RR = 330.8), ampullary cancer (RR = 123.7), thyroid, brain and pancreas[1]. Duodenal polyp in FAP can be found in 50-90%, 12% of this is microadenomatous polyp, which can be diagnosed only by biopsy[2]. Two third of duodenal polyp are found near ampullary area. Duration for encoscopic surveillance of duodenal polyp is based on Spigelman classification and recommendation as shown in Table 1 and Table 2.

Table 1. Spigelman classification for duodenal polyposis in FAP[2].

Criterion	1 point	2 points	3 points
Polyp number	1-4	5-20	> 20
Polyp size (mm)	1-4	5-10	> 10
Histology	tubular	tubulovillous	villous
Dysplasia	mild	moderate	severe

Table 2. Duration of surveillance according to Spigelman staging[2].

Stage	Points	Surveillance interval (yes)
0	0	5
I	1-4	5
II	5-6	3
III	7-8	1-2
IV	9-12	Consider surgery

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CASE 3

A 24-year-old woman, presented with chronic epigastric pain and significant weight loss. An EGD was done.

EGD revealed fungating mass with ulceration at the third-part of duodenum (Figure 6-7). Biopsy from the mass revealed poorly differentiated adenocarcinoma.

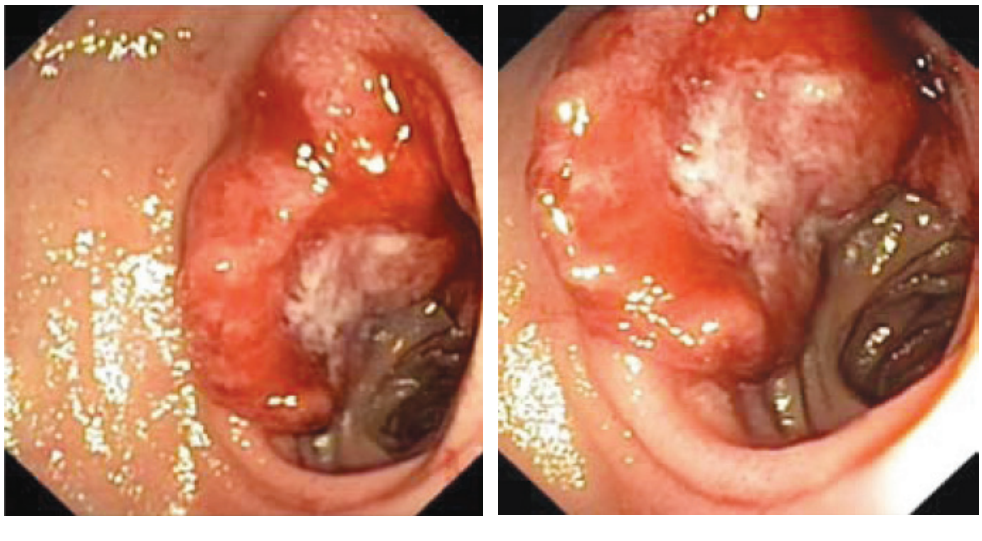

Figure 6-7.

Diagnosis:

Duodenal adenocarcinoma

Discussion:

The leading causes of small bowel tumors are carcinoid 33%, adenocarcinoma 30%, lymphoma 16%, and gastrointestinal stromal tumor (GIST) 7%[1]. By the region of small bowel, adenocarcinoma is the most common tumor found in the duodenum which accounting for 58.7% of duodenal tumors[2]. Duodenal carcinoma is rare, accounting for 0.5% of all gastrointestinal cancers and the incidence is 3 in 1,000,000. The risk for duodenal cancer is increased in FAP, HNPCC, and Peutz-Jegher syndrome[3]. Surgery is the main modality for the treatment in duodenal adenocarcinoma. Medical survival for patient's undergone surgical resection was 41 months with a 5-year survival at 43%. In contrast to a curative resection, a palliative bypass surgery provided a median survival only for 12 months with a 5-year survival at 13%[3].

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Case 4

A 57-year-old woman had recurrent melena for many times over the last 1 year. She had multiple esophangogastroduodenoscopies and colonoscopies performed but no cause was found. Capsule endoscopy (CE) followed by single-balloon enteroscopy (SBE) was done.

Endoscopic fingings:

CE could capture only 1 frame of a smooth submucosal mass around duodenojejunal junction (arrow, Figure 8). SBE showed a 4 cm. Smooth round mass covered with normal mucosa at proximal jejunum (Figure 9) with a stigmata of recent bleeding (arrow,

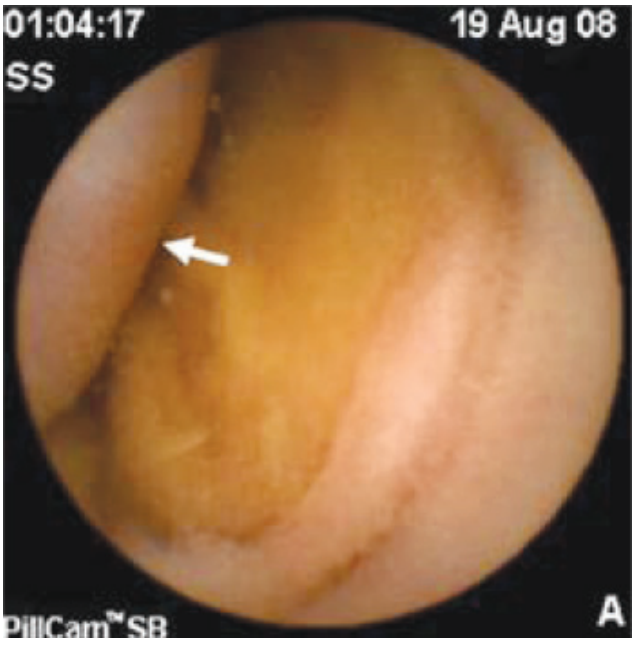

Figure 8.

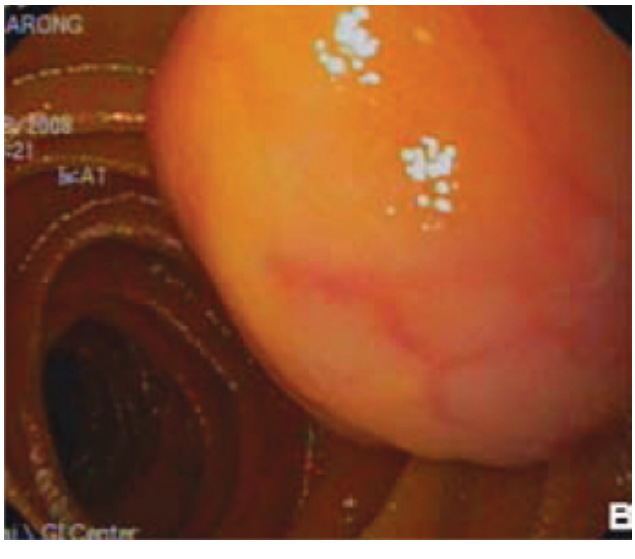

Figure 9.

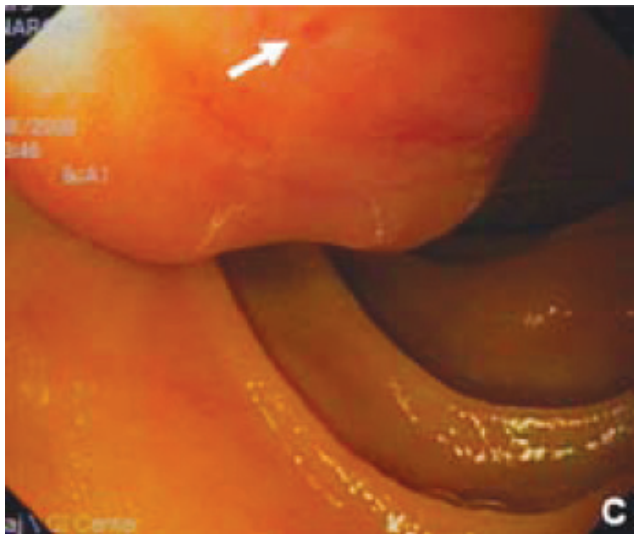

Figure 10.

Figure 10).

Diagnosis:

Gastrointestinal stromal tumor of jejunum

Discussion:

CE is recommended as first-line investigation in patients with obscure gastrointestinal bleeding (OGIB) due to its sensitivity and non-invasiveness[1,2]. Its was suggested that performing CE before push enteroscopy was a more effective strategy than beninning with push enteroscopy[3]. However, meta-analysis showed that CE could miss small bowel tumor in up to 19% of the cases[4]. The reason why CE often miss small tumor is unclear. Thus, patient with negative CE who remains having rebleeding should undergo small bowel enteroscopy.

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