

Introduction

Among gastrointestinal pathologies, gastrointestinal bleeding (GIB) is the most common cause of hospitalization within the United States, and consequently costing the healthcare system \$5 billion.¹ Upper GI bleed (UGIB) is estimated to be six times more frequent than a lower GI bleed.²

Most common causes of UGIB are gastric or duodenal ulcers, gastritis or duodenitis, and esophagitis. Cancers of the upper gastrointestinal (GI) tract account for less than 3 percent of upper GI bleeds. We present a rare case of hepatocellular carcinoma (HCC) extending into the duodenum causing an upper GI bleed (UGIB). Symptoms and risks of UGIB include hematemesis, melena, elevated blood urea nitrogen creatinine ratio, alcohol and nonsteroidal antiinflammatory drug use.

Esophagogastroduodenoscopy (EGD) is used to provide diagnosis and therapy. In an acute setting the Glasgow Blatchford Score (GBS) is used for risk assessment as seen in Figure 1. Additionally, after endoscopy therapies performed, percutaneous embolization and surgery may be necessary performed for refractory cases.

RISK FACTORS AT ADMISSION	SCORE	Systolic blood pressure (mmHg)	
Blood urea nitrogen (mg/dL)		100-109	1
18.2 to <22.4	2	90-99	2
22.4 to <28.0	3	<90	3
28.0 to <70.0	4	Heart rate (beats per minute)	
≥70.0	6	≥100	1
Hemoglobin (g/dL)		Melena	1
12.0 to <13.0 (men); 10.0 to <12.0 (women)	1	Syncope	2
10.0 to <12.0 (men)	3	Hepatic disease	2
<10.0	6	Cardiac failure	2

Figure 1: GBS score; assesses risk and need for endoscopy, with a higher score relating to increased need for intervention

Case Description

64 year old male with history of alcohol abuse, developed multifocal HCC and decompensated cirrhosis presents with fatigue and weakness. Additionally, patient has multiple admissions for UGIB stabilized by gastroduodenal artery embolization as seen in figure 2 after failing endoscopic treatment. At admission, patient was hypotensive at 100/57 and anemic with a hemoglobin 5.8. Computed tomography and angiogram showed a exophytic lesion supplied by the cystic artery eroding into the duodenal bulb (Figure 3 and Figure 4). Band and coil embolization of the tumoral arteries arising from the cystic artery was performed (Figure 2). The patient had worsening hematochezia and

hemodynamic instability, and deemed inoperable. He was not a transplant candidate given his cancer burden and later expired.

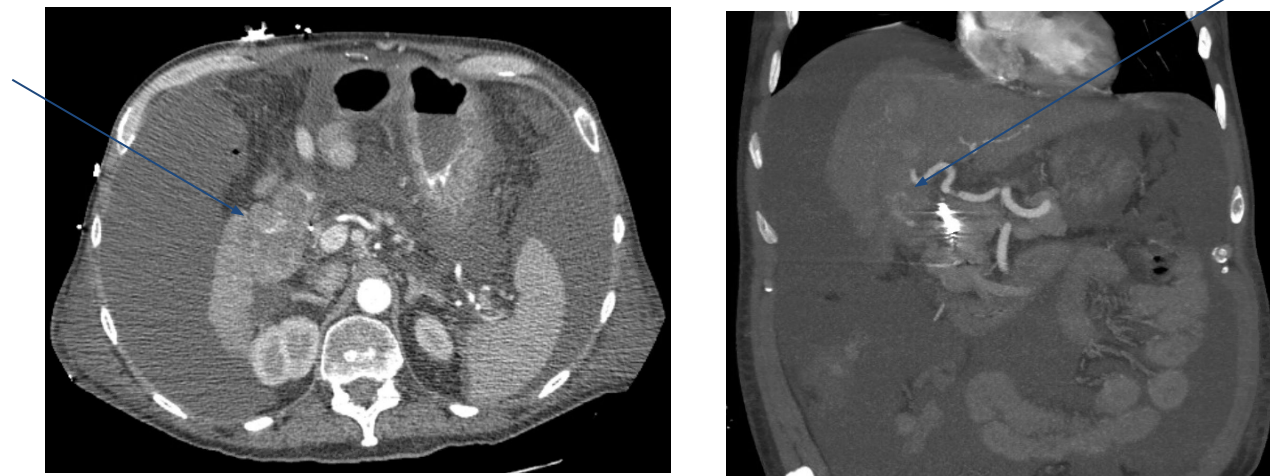


Figure 3 (left): Arrow showing exophytic tumor within the inferior right hepatic lobe which eroded into the proximal duodenum
Figure 4 (right): Arrow demonstrating hypervascularity of the exophytic lesion, it eroding into the duodenum and arterial blushes

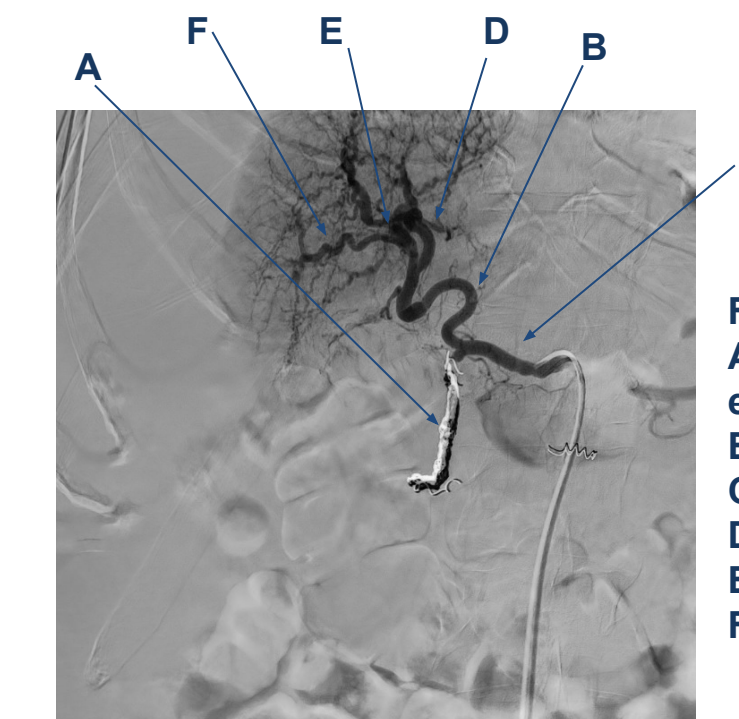


Figure 2
A: Prior gastroduodenal artery embolization
B: Proper hepatic artery
C: Common hepatic artery
D: Left hepatic artery
E: Right hepatic artery
F: Cystic artery

Discussion

Endoscopy and angioembolization play vital roles in treatment of UGIB and surgery is used as salvage therapy. EGD within 24 hours is recommended for patients and within 12 hours for variceal bleeding. Lau et al studied patients with GBS score of >12 comparing mortality rates of patients who received EGD within 6 hours versus 6 to 24 hours. There was no difference in 30 day mortality between the two groups.⁵ A combination of thermal and nonthermal coagulation, submucosal injection, and clipping can facilitate hemostasis.

Thermal therapy controls bleeding by tissue coagulation, collagen contraction and vessel shrinkage. Success rate of 80 to 95% and rebleed

rate of 10 to 20%.⁴ Perforation risk is 0.5%, although dependent on location within GI tract.⁴ For instance, the cecum, thinner part of the GI tract, has more risk of perforation than the thicker stomach. Contact thermal therapy, allows for pressure application at the bleeding point with thermal energy for coagulation. Non-contact thermal technique such as argon plasma coagulation uses ionized argon gas to ablate hemorrhagic tissue. Non thermal techniques including injection sclerotherapy with epinephrine and multiple clips of mucosa, which fall off in 1 to 2 weeks as seen in Figure 5. Additionally, there are over the scope clips as seen in Figure 6.

Angioembolization is generally performed for bleeding if endoscopic interventions fail to control bleeding.

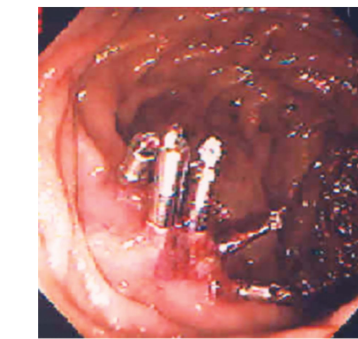


Figure 5



Figure 6

Boros et. al compared prophylactic transcatheter arterial embolization (PTAE) in a patient without active bleeding from non variceal UGIB (NVUGIB) to an addition of endoscopic treatment in NVUGIB. PTAE demonstrated lower chance of rebleeding, need for surgery and further intervention. Although more research needed to compare gastric and duodenal sources of bleeding. Additionally, recommended developing a scoring system to assess for NVUGIB.⁶

Surgery is reserved for patients with hemodynamic instability, bleeding refractory to embolization, high risk for rebleeding and likelihood of risks associated with endoscopic treatment. Two cases of UGIB secondary to HCC performed resection of cancer; one resulted in disease free for seven years while the other died during post operative recover due to liver failure.^{7,8}

Conclusion

HCC causing UGIB is rare. Timely assessment of GIB for endoscopic intervention, embolization or surgery is vital for treatment. Further studies recommend to assess need for prophylactic embolization.

References

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