Hepatocellular carcinoma masquerading as a bleeding gastric ulcer: A case report and a review of the surgical management

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Abstract

Hepatocellular Carcinoma (HCC) is a common malignancy worldwide. While bleeding from the gastrointestinal tract (BGIT) has a well known association with HCC, such cases are mainly due to gastric and esophageal varices. BGIT as a result of invasion of the gastrointestinal tract by HCC is extremely rare and is reportedly associated with very poor prognosis. We describe a 67-year-old male who presented with BGIT. Endoscopy showed the site of bleeding to be from a gastric ulcer, but endoscopic therapy failed to control the bleeding and emergency surgery was required. At surgery, the ulcer was found to have arisen from direct invasion of the gastrointestinal tract by HCC of the left lobe. Control of the bleeding was achieved by surgical resection of the HCC en-bloc with the lesser curve of the stomach. The patient remains alive 33 mo after surgery. Direct invasion of the gastrointestinal tract by HCC giving rise to BGIT is very uncommon. Surgical resection may offer significantly better survival over non-surgical therapy, especially if the patient is a good surgical candidate and has adequate functional liver reserves. Prognosis is not uniformly grave.

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Key words: Hepatocellular carcinoma; Gastrointestinal bleeding; Stomach invasion; Hepatectomy

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referral to the surgical service was made. Esophageal-
gastroduodenoscopy and colonoscopy were suggested but
the patient declined referral or admission and discharged
himself from the hospital against medical advice.
One month later, he presented himself at the outpatient
specialist surgical clinic. Hemoglobin level on arrival was 9.4
g/dL. He finally consented to endoscopic examination as
an outpatient procedure. Esophageal-gastroduodenoscopy
was carried out on the same afternoon, during which
an actively bleeding ulcer was seen in the lesser curve
(Figure 1). Repeated injection with adrenaline failed to
stop the bleeding and he was immediately transfused with
packed cells and prepared for emergency surgery.
At celiotomy, a 10 cm tumor arising from segments
II and III of the liver was found; the tumor involved
the lesser curve of the stomach and had eroded into the
lumen. On-table referral to the hepato-biliary surgical
service was made. Resection of segments II and III of the
liver with en-bloc wedge resection of the lesser curve of
the stomach was carried out both to control the hemorrhage
and as a definitive therapy for the tumor (Figure 2).
The patient’s post-operative recovery was uneventful.
He was discharged from the surgical intensive care unit on
the 2nd post-operative day. An early post-operative CT scan showed no residual tumor, but a
repeat CT scan performed 9 mo later showed multiple
new lesions of HCC in the liver (Figure 3). He opted for
conservative management and was still alive 2 years and
nine months after surgery.

FIGURE 1 Endoscopic picture showing active bleeding from the lesser curve of the stomach.

FIGURE 2 Inferior view of the resected tumor specimen with adherent stomach wall.

FIGURE 3 HCC recurrence in the right lobe. Enhanced axial hepatic arterial-phase CT performed on follow-up after initial resection shows a hypervascular lesion in segment 5/6 suspicious for HCC recurrence (arrow). Incidental note is made of a small cyst in the right kidney.

DISCUSSION
HCC is a highly malignant type of tumor. Extrahepatic
metastases occur in 30%-75% of patients, commonly
affecting the lungs, regional lymph nodes, bones and
adrenal glands. Direct gastrointestinal tract involvement
is rarely seen. In a clinical study, Chen et al. reported
8 out of 396 patients (2%) with HCC who developed
gastrointestinal involvement during the course of the
disease. Lin et al. similarly reported gastrointestinal
metastases in 11 out of 2237 patients with HCC (0.5%).
Only 10 cases of HCC invading directly into the stomach
could be found in the literature. Eight of these presented
with BGIT, and only one of the 10 subsequently
underwent surgical resection of the HCC.

Of these 10 cases reported, 6 had received
some form of regional therapy, such as trans-arterial
chemoembolization (TACE), intra-arterial chemotherapy
or radiotherapy, either alone or in combination, prior
to the HCC invading the gastro-intestinal tract. This
includes 4 of the 5 patients with direct invasion of the
gastrointestinal tract by contiguous HCC reported by
Chen et al. Chen et al. postulated a relationship between
regional therapy and the development of direct invasion
of the gastrointestinal tract by HCC. It was proposed that
when a large, subcapsular, massive-type HCC adjacent
to the gastrointestinal tract is treated with TACE, the
wall of the gastrointestinal tract could be affected by the
inflammatory response secondary to TACE and become
adherent to the tumor capsule. Viable tumor tissue could
then invade the GI tract.

Our patient presented with non-specific symptoms
and only a very low hemoglobin level, suggesting
gastrointestinal bleeding. He was not known to be
a hepatitis B carrier or a patient with HCC at initial
presentation and, thus had no history of regional
therapy for HCC. However the resected tumor was
large, measuring 10 cm × 9 cm × 9 cm. In the published literature, of the 19 cases of HCC with gastrointestinal tract involvement (both direct invasion and distant metastasis) reported by Lin et al.\textsuperscript{9} and Chen et al.\textsuperscript{12}, 14 tumors were considered to be large and 17 were larger than 6 cm, with the tumor sizes of the remaining 2 cases not being described. A casual relationship between tumor size and the probability of direct invasion to the surrounding viscera should therefore be considered.

In previously reported cases of HCC with gastro-intestinal tract involvement, treatments have included surgery, TACE and local injection with ethanol. Results of treatment have been poor, with almost all patients dying within 5 mo except for 1 case described by Nicoll et al.\textsuperscript{8}. In this reported case, the HCC invaded the stomach and the patient was treated with surgical resection. He was reported to be still alive 7 mo after resection. Our patient similarly had surgical resection with clear margins and remains alive 33 mo after surgery. Thus, such contiguous invasion of the stomach does not always represent terminal disease. Surgery should be considered wherever feasible as other modalities of treatment for HCC, including chemotherapy, are poorly efficacious\textsuperscript{13}.

Large HCCs may have a predisposition towards contiguous involvement of the gastro-intestinal tract, including the stomach. Diagnosis is difficult as most patients are asymptomatic and diagnosis by endoscopy is rarely achieved as these lesions have no special or characteristic endoscopic features. In our patient, diagnosis was made during emergency surgery to control bleeding from a supposed gastric ulcer. Based on limited case reports, the accepted paradigm is that an HCC directly invading the gastrointestinal tract is associated with very poor prognosis and that it may not be worthwhile to pursue an aggressive treatment policy. However, the scientific basis of this belief is limited, and this case report shows that aggressive resection can both resolve the acute clinical problem (gastrointestinal bleeding) as well as result in a relatively long-term survival. Surgery remains a viable option in patients with HCC and presenting with bleeding from the upper gastrointestinal tract as a result of direct invasion by a tumor.

Invasion of the upper gastrointestinal tract by HCC is extremely uncommon. In our case, the patient did not present with any signs and symptoms of chronic liver disease or hepatomegaly suggestive of hepatocellular carcinoma. The discovery of hepatocellular carcinoma invading directly into the stomach was an incidental finding from laparotomy performed for a bleeding peptic ulcer. Resection of segments II and III of the liver with en-bloc wedge resection of the lesser curve of the stomach was performed as a definitive procedure. This report demonstrates that the prognosis is not necessarily dismal in such cases if there are no distant metastases. Surgical resection may offer a significantly better survival over nonsurgical therapy, especially if the patient is a good surgical candidate and has adequate functional liver reserves.

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