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Case Report

Liver Mass Due to Penetration of a Silent Duodenal Ulcer

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Liver penetration is a rare but serious complication of peptic ulcer disease. We report a 60-year-old man, without any serious risk factor for peptic ulcer, presented with mild abdominal discomfort, food-related vomiting and weight loss, and a mass in the left hepatic lobe, which was the result of a silent duodenal ulcer penetration. The diagnosis was based on histological examination of the endoscopicl biopsies.

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Introduction

Peptic ulcer diseases (PUD), which are common diseases, can be complicated by inflammation, ulceration, or perforation. The diagnosis is easier to make when a history of ulceration or acute characteristic pain in abdomen is present.

In order of decreasing frequency, penetration occurs into the pancreas, gastrohepatic omentum, biliary tract, and liver.[1] Penetration into the liver is a rare complication of PUD and may lead to severe complications such as upper gastro-intestinal (GI) hemorrhage or abscess formation.[2] Fifteen cases of endoscopically and histologically diagnosed liver penetration by PUD have been previously reported, two of which were presented with GI bleeding.

We present a 60-year-old man, on no medication, who developed a silent duodenal ulcer penetrated into the liver. The diagnosis was made by histological examination of the endoscopicl biopsies.

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Case Report

A 60-year-old male patient presented with a one-year history of discomfort in the upper abdomen with a negative history of heartburn or severe pain. The pain was aggravated by vomiting (related to food ingestion) since one month prior to presentation. He had been loosing weight during that period, which was associated with evening fever (up to 38.5ºC). The patient was not taking any medication and his family history was unremarkable.

The patient was admitted to a provincial hospital, while his body temperature was 38.5ºC and his heart rate was 105 beats/min. The following laboratory parameters were of note: white blood cells count: 18.6 x 10^{12} /L (89% neutrophils, 11% lymphocytes), hemoglobin: 13.3 g/dL, hematocrit: 40%, total bilirubin: 1.6 mg/dL, and direct bilirubin: 1.4 mg/dL. Blood urea, creatinine, and sugar concentrations were within normal ranges. Wright and Widal agglutination tests were negative. Liver function tests were mildly altered: SGOT: 94 U/L, SGPT: 107 U/L, alkaline phosphatase: 395 U/L, and amylase: 255 U/L.

Abdominal ultrasonography (Figure 1) showed a hypoechoic ill-defined mass (96 x 56 mm) in the left lobe of the liver, with lower echo in the center, probably due to necrosis, and five echogen nodules (26 mm in greater diameter) in the left lobe. An abdominal computed tomography, which was performed one week later, confirmed the findings.

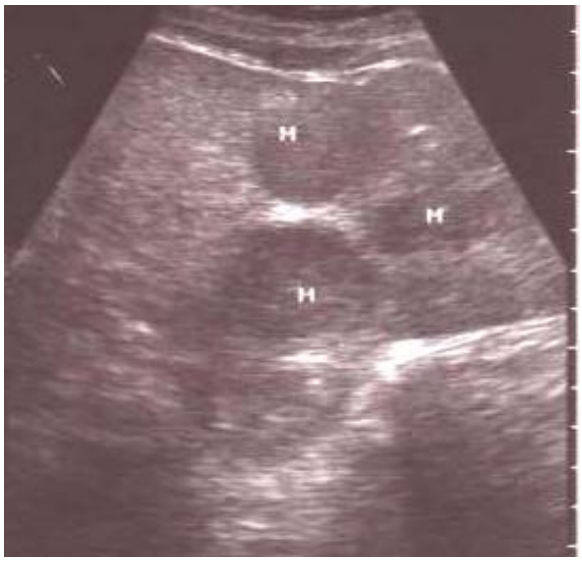

Figure 1. Longitudinal ultrasound scan showing masses in the liver.

The tomogram showed a low-density lesion (120 x 80 mm) and a little fluid next to the liver (Figure 2).

The characteristics of the lesions suggested neoplastic lesions (e.g., hepatocellular carcinoma and metastasis) as the first differential diagnosis, or abscess with hemangiomas. The gall bladder, pancreas, kidneys, and spleen were normal.

The patient was referred to our hospital for further evaluation. He was ill and mildly pale, but had no adenopathies. Regardless of a mild deep tenderness without peritoneal sign in the upper abdomen, the physical examination was normal.

Because of upper GI symptoms and to seek a probable neoplastic origin, a gastroduodenoscopy was carried out. There was a linear ulcer in the distal esophagus. The stomach was normal. A deep and necrotic ulcer at the anterior wall of the duodenum (about 1.5 cm in diameter) was revealed in the bulb, extending to the prepyloric region with irregular margins. Biopsies from proximal and distal parts of the ulcer were taken.

Histological examination of the specimens revealed glycogenic acanthosis in the esophageal mucosa, duodenal ulceration, and normal-appearing hepatocytes attached to the ulcerated area, which showed nonspecific inflammation as well (Figure 3).

Before receiving the histological report, due to the severe and continuous symptoms, the patient was operated with primary diagnosis of hepatic abscess (through a midline incision in the upper abdomen).

The abscess was firmly adhered to the anterior wall of the duodenum and a healed ulcer scar was also noted. Evaluation of the liver specimens revealed reactive inflammatory changes and granulation tissue.

The patient received treatment for *Helicobacter pylori* eradication. Upper GI endoscopy and ultrasonography were repeated after 40 days. The ulcers were cured completely and the ultrasonic pattern was normal except for the hypoechoic lesion in the left hepatic lobe (8 mm) suggesting hemangiomas. Liver functional tests were repeated, which all were in normal ranges.

Discussion

We reported a rare case of endoscopically and histologically proven liver penetration by a

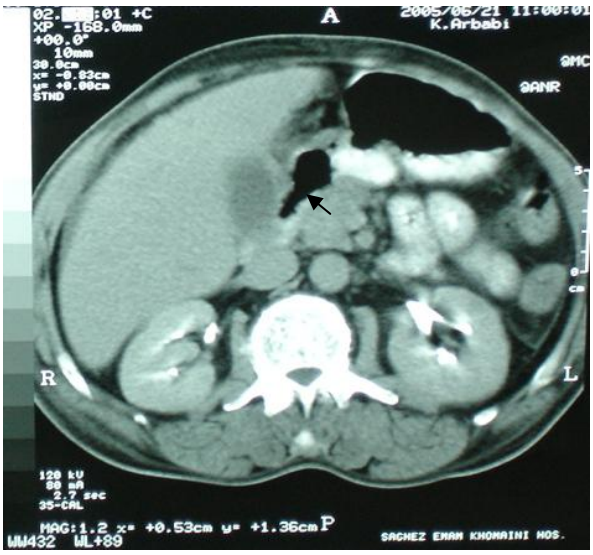

Figure 2. Tomogram; the ulcer penetrated to the liver (arrowed) and expanded to the right lobe.

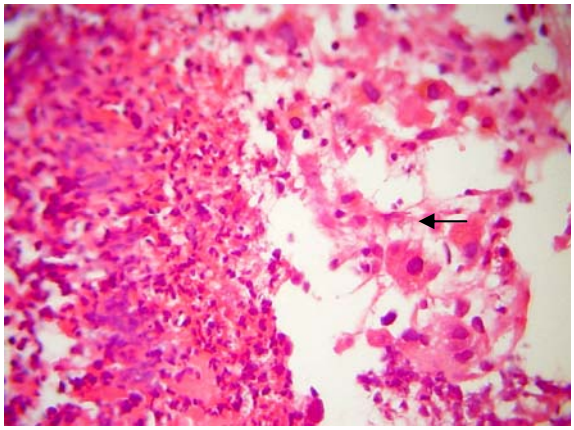

Figure 3. Endoscopic biopsy showing granulation tissue adjusted to normal-appearance hepatocytes (arrowed).

Table 1. Characteristics of the reported cases of peptic ulcer penetration to the liver.

Source	Age/Gender	Epigastric pain/Tenderness	Main clinical feature	Location	Endoscopic appearance
Kayacetin[2]	61/ Male	—	GI bleeding	Anterior wall of gastric antrum	Giant ulcer
Jimenez-Perez[3]	61/Male	Tenderness	GI bleeding	Lesser curve of corpus	Ulcer with mass
Sperber[4]	69/Male	Tenderness	GI bleeding	Lesser curve of corpus	Ulcer
Park[5]	52/Male	—	GI bleeding	Lesser curve of antrum	Giant ulcer
Padda[6]	78/Male	—	GI bleeding	Anterior wall of duodenal bulb	Mass without ulcer
Goldman[7]	65/Male	Tenderness	Nausea, anemia	Lesser curve of stomach	Ulcer with mass
Brullet[8]	89/Female	Epigastric pain	GI bleeding	Anterior wall of gastric antrum	Ulcer with mass
Novacek[9]	33/Female	Epigastric pain	GI bleeding	Posterior wall of duodenal bulb	Ulcer
Guerrieri[10]	53/Male	—	GI bleeding	Lesser curve of antrum	Ulcer
Martinez-Onsurbe[11]	91/Female	—	GI bleeding	Anterior wall of antrum	Ulcer
Castellano[12]	77/Male	—	GI bleeding	Posterior wall of duodenal bulb	Ulcer
Castellano[12]	70/ Male	Epigastric pain	GI bleeding	posterior wall of antrum	Ulcer
Matsuoka[13]	53/Male	Tenderness	GI bleeding	Lesser curve of corpus	Giant ulcer
Mostbeck[16]	53/Male	Epigastric pain	—	Anterior wall of duodenal bulb	Ulcer
Present case	60/Male	Epigastric pain	Anemia, weight loss	Anterior wall of duodenal bulb	Ulcer

duodenal ulcer. To date, only fifteen cases of peptic ulcer penetration into the liver — diagnosed by endoscopic biopsy, have been reported.[2 – 16] The available data about thirteen cases are summarized in Table 1.

The main clinical presentation in most of the cases was severe GI bleeding; however, there was no evidence of dominant GI bleeding in our case. Abdominal pain and/or tenderness was reported in about half of the cases, including the present subject. Most of these cases had gastric ulcers.

The size of the ulcers ranged from 2.5 × 2 cm in diameter to 9 × 3 cm. Malignancy was suspected due to the ulcer ground and irregular margin. In our case, a smaller ulcer was the cause, and the operation was done primarily to rule out malignancy.

The presence of liver tissue in the histological examination of endoscopic biopsies led to the correct diagnosis in all the cases. None of them was clinically or radiologically recognized prior to endoscopy. Unspecific inflammatory infiltration in the liver tissue was the most common report in almost all of the cases, and the local inflammation was considered to be the reason of the mild elevation of liver function tests.[10]

The diagnostic value of the liver function tests in cases of the ulcer penetrating into the liver seems to be very limited. Liver function tests, which were normal in all but two reported cases, did not lead to the diagnosis. [7, 10]

Liver penetration by a peptic ulcer often necessitates operative management, but generally a good outcome is expected. Successful treatment without operation was achieved in only two of the patients; one treated with histamine H2-receptor antagonist and the other one with a proton pump inhibitor.[2, 5] While all previously described patients were managed by an operation, the operation was indispensable in the present case because of severe and continuous symptoms due to the liver abscess.

Unlike the other cases, lack of prior GI symptoms or history of peptic ulcer and absence of bleeding or use of nonsteroidal antiinflammatory drugs (NSAIDs) in our patient, led us to use ultrasonography, despite unremarkable liver

function tests, as the first diagnostic tool. But the diagnosis was in favor of malignant etiologies and, therefore, an upper GI endoscopy was done seeking a probable source.

In conclusion, liver penetration may be followed by a silent ulceration (even a small ulcer) in elderly and needs a high index of suspicion to make the diagnosis on time and to avoid further complicated problems.

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