

Case Report

A mass seen under gastroscopy “disappeared” during laparotomy

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Abstract: We describe here a case of 36-year-old man with a hepatic cavernous hemangioma that was misdiagnosed as a gastric submucosal tumor (SMT) with endoscopic ultrasound (EUS) and CT scan. On gastroscopy, a submucosal tumor was found on the cardia of the stomach. Based on EUS and abdominal CT scan, the lesion was diagnosed as a gastric duplication cyst. The patient underwent gastroscopy after receiving laparotomy at the median point of the abdomen. A spherical mass arising from the left triangular ligament of the liver region was found. There was no abnormal finding at the cardia of the stomach.

Keywords: Gastric submucosal tumor, gastroscopy, endoscopic ultrasound, CT, diagnostic, hepatic cavernous hemangioma

Introduction

Endoscopic ultrasound (EUS) is one of those diagnostic methods in gastrointestinal endoscopy which has developed rapidly in the last decade and has become exceedingly available to visualize the walls of the internal organs in details corresponding to histological layers, or analyze the adjacent structures [1]. It has been widely used as a modality for the evaluation and diagnosis of duplication cysts. EUS is the diagnostic tool of choice to investigate duplication cysts since it can distinguish between solid and cystic lesions [2].

Submucosal lesion (SML) or submucosal tumor (SMT) includes a wide spectrum of non-neoplastic and neoplastic conditions (benign and malignant) and is used to define an intramural growth underneath the mucosa [3]. EUS and CT scan can accurately differentiate extragastric compression from true SMTs. However, cases may arise that cannot be differentiated even after various methods are used. We report here a case of a cavernous hemangioma which was misdiagnosed as a gastric submucosal tumor in a patient undergone various diagnostic modalities, including endoscopy, EUS and abdominal CT scan.

Case report

A 36-year-old man was admitted to hospital for further treatment of a stomach mass discovered during a health evaluation. Physical examination and blood test results were unremarkable. Gastroscopy: After inserting the endoscope and reverse observation, there showed no abnormality in the gastric fundus. However, when withdrawing the endoscope, a round gastric bulge was noted in the anterior wall of the gastric fundus that measured approximately 2.0 cm × 2.0 cm in size (**Figure 1**). EUS: Initially, EUS detected no mass and nothing abnormal. However, a smooth bulge (24.6 mm × 18.6 mm) was subsequently detected in the anterior wall of the greater curvature in the gastric fundus. Stromal tumors were clinically diagnosed (**Figure 2**). CT imaging also showed a tumor in the stomach (**Figure 3**) and gastric surgery was recommended to the patient.

Laparoscopic and endoscopic examinations showed the tumor adjacent to the cardia in the gastric fundus. However, it was difficult to locate the gastric tumor precisely using laparoscopy and the procedure was thus converted to laparotomy. The patient underwent gastroscopy

A mass seen under gastroscopy “disappeared”

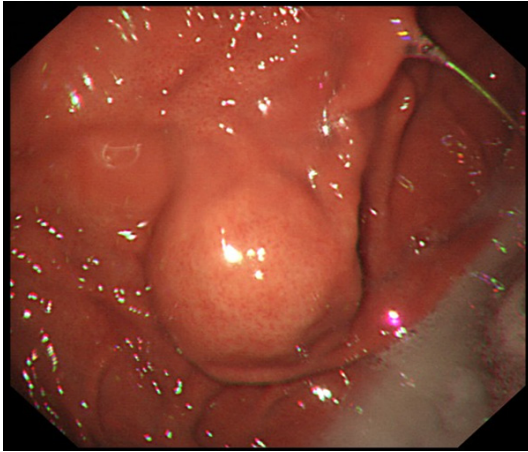


Figure 1. Gastroscopy showed a mass in the stomach.

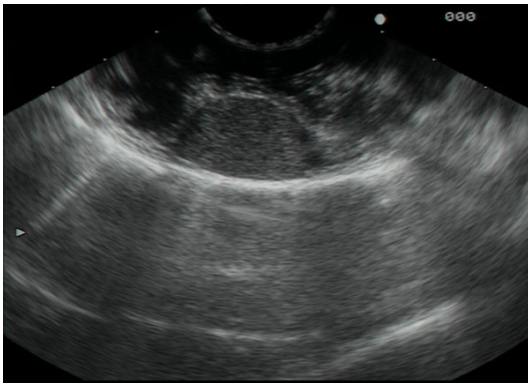


Figure 2. EUS showed a mass in the stomach.

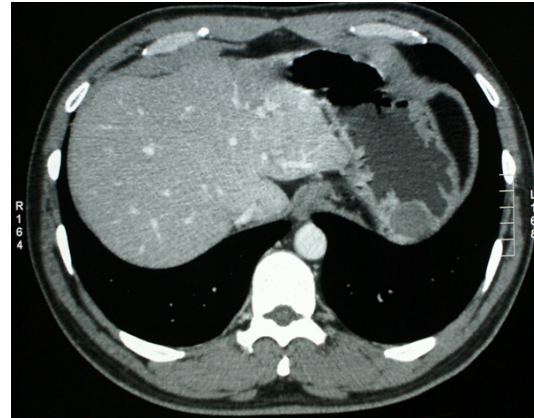


Figure 3. CT showed a mass in the stomach.

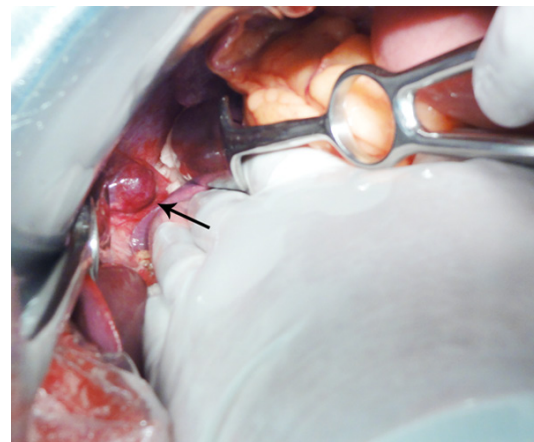


Figure 4. During the operation, we found a spherical mass measuring about 2.0 cm × 2.0 cm at the left triangular ligament of the liver region.

after receiving laparotomy at the median point of the abdomen. No palpable tumors were detected. After consultations with an endoscopic physician, a EUS physician and a professor of surgery, we still did not find any palpable stomach mass. Where was the tumor?

Meticulous observation of the abdominal cavity showed a spherical mass measuring about 2.0 cm × 2.0 cm at the left triangular ligament of the liver region (**Figure 4**). Intraoperative ultrasound showed a hypoechoic solid mass. When fingers were placed between the mass and the diaphragm, and gradually moved towards the gastric fundus, an image in accordance with that obtained preoperatively was observed. Therefore, the liver mass was resected and confirmed to be a solid substance after dissection. Postoperative pathological examination showed a cavernous hemangioma appearing in the liver region (**Figure 5**).

Discussion

Tumors that originate from intragastric sites are usually diagnosed with gastroscopy and EUS [1, 2, 4-6]. However, why in this case did the images mistakenly depict a tumor originating from an intragastric site? The paradox between before and after laparotomy was attributed to the fact that the liver mass invaded the gastric cavity due to the limited abdominal space from compression with an inflatable gastroscopy. However, even though an inflatable gastroscopy was performed, the abdominal cavity was not constrained after laparotomy. Accordingly, no intragastric mass was found. Furthermore, more attention should be paid to the impermanent nature of a stomach mass observed during gastroscopy combined with EUS examination. The possibility of lesions

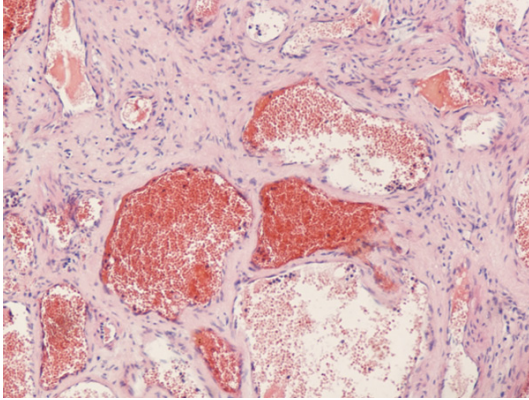


Figure 5. Postoperative pathological examination demonstrated that the mass was a cavernous hemangioma appearing in the liver region.

outside of the stomach should not be neglected. When carrying out EUS examination in the diagnosis of submucosal tumors in the gastric fundus, emphasis should be placed on discriminating the continuity of the stomach and diaphragm, so as to determine whether the tumors originate from intragastric or extragastric sites. In addition, whether the lesion is due to intramural or extrinsic compression can be distinguished by changing the patient's position to see if the location and appearance of the mass change.

Our case was not the first report of a patient with asymptomatic left hepatic mass that was misdiagnosed as a SMT, Park et al [5] have reported a case of hepatic cyst which was misdiagnosed as a gastric submucosal tumor in a patient undergone various diagnostic modalities, including endoscopy, EUS and abdominal CT scan. Compared with their report, our case was a solid tumors rather than a cystic mass which was more difficult to discriminate.

In conclusion, a left liver mass was described and diagnosed as a SMT arising from the gastric cardia. For such a case, more attention should be paid to the impermanent nature of a stomach mass observed during gastroscopy combined with EUS examination.

Disclosure of conflict of interest

None.

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