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Acute gastrointestinal bleeding from a submucosal gastric mass

Khalida Soufidi, Robert J.F. Laheij, Jan F. Monkelbaan

University Medical Center of Utrecht, The Netherlands

Abstract

We report a case of a 44-year-old male patient who presented with melena and hemodynamic instability. The endoscopic investigation of the upper and lower gastrointestinal tract was initially negative, but a repeat gastroduodenoscopy revealed a submucosal mass in the lesser curvature of the stomach with central erosion, primarily perceived as ectopic pancreas, but it was later discovered that it pertained to a gastrointestinal stromal tumor.

Keywords melena, acute gastrointestinal bleeding, submucosal gastric mass, ectopic pancreas, gastrointestinal stromal tumor

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Introduction

Gastrointestinal stromal tumors (GISTs) are uncommon subepithelial mesenchymal neoplasms of the gastrointestinal tract mainly occurring in the stomach (60%) and proximal small intestine (30%) [1]. Other locations such as colorectal and extra-gastrointestinal locations have been reported. The majority of GISTs are symptomatic (69%) and the main clinical features are gastrointestinal bleeding (30-50%), abdominal mass (20%) and abdominal pain (20%) [2,3].

We herein report a case of melena and hemodynamic instability, the endoscopic investigation of which was initially negative, but a repeat gastroduodenoscopy (GDS) revealed a submucosal mass in the lesser curvature of the stomach with central erosion primarily perceived as ectopic pancreas, but it was later discovered that it pertained to a GIST.

Case report

A 44-year-old male with a history of hypertension, chronic kidney disease and reflux disease, presented with upper gastrointestinal bleeding and hemodynamic instability. A month prior to admission he underwent GDS and colonoscopy because of melena. No bleeding source was found, but GDS did reveal a submucosal mass in the lesser curvature of the stomach with central erosion suggestive for ectopic pancreas therefore no biopsies or endoscopic ultrasound (EUS) were performed. Figure 1 shows the submucosal mass in the lesser curvature of the stomach with central erosion (black arrow).

At the time of admission the patient complained about melena and syncope. Physical examination revealed hypotension and tachycardia, but was otherwise unremarkable. Laboratory tests revealed low hemoglobin 5.1 mg/dL. Subsequent GDS revealed a submucosal protruding mass in the lesser curvature of the stomach with an eroded surface and bleeding stigmata, which is shown in Figure 2 (black arrow).

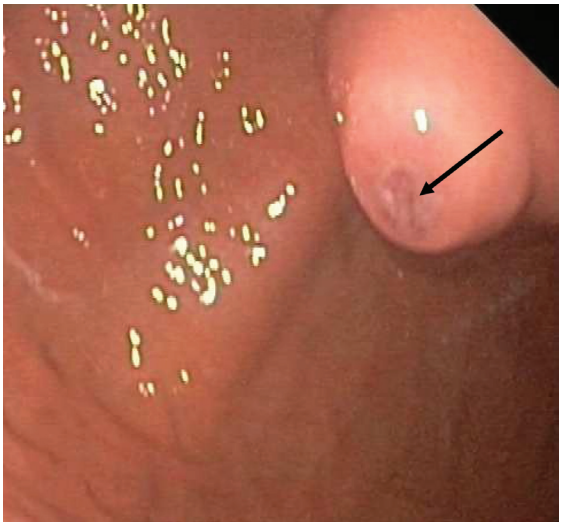

Figure 1 Initial endoscopy showed a submucosal mass in the lesser curvature of the stomach with central erosion (black arrow), suggestive for ectopic pancreas

Department of Gastroenterology, University Medical Center of Utrecht, The Netherlands

Conflict of Interest: None

Correspondence to: Khalida Soufidi, University Medical Center Utrecht; Dept. of Gastroenterology and Hepatology; PO Box 85500, 3508 GA Utrecht, The Netherlands, Fax: +31887555533, e-mail: k.soufidi-2@umcutrecht.nl

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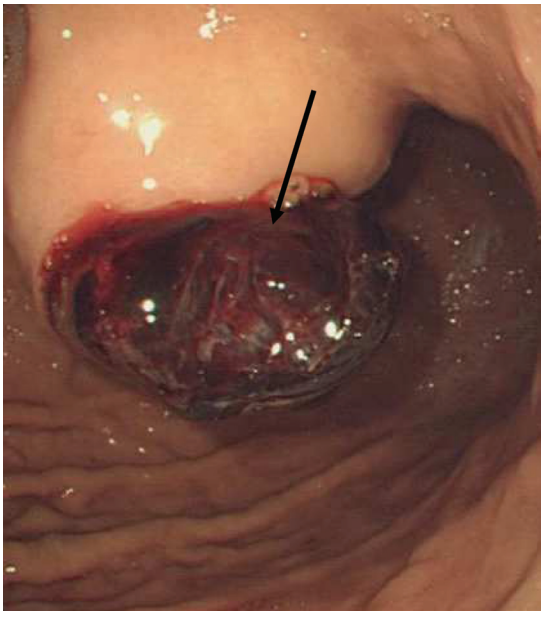

Figure 2 Gastroduodenoscopy during active bleeding revealed a submucosal mass with an eroded surface and bleeding stigmata (black arrow)

This was treated with epinephrine injection and hemoclips. Computed tomography (CT) showed a mass in the stomach with a diameter of 3 x 7 cm without lymphadenopathy or signs of distant metastases. The patient was admitted to the ICU and continuous intravenous proton pump inhibitor was started. However, fluid resuscitation and blood transfusion remained necessary. Therefore, two days after admission, the patient underwent a partial gastrectomy. Figure 3 shows the wedge resection of the gastric mass with central hemorrhage (black arrow).

The submucosal mass with central erosion seen with endoscopy and CT scan was characteristic for a GIST. Histopathologic examination confirmed the diagnosis, describing an epithelioid type GIST with focal necrosis and hemorrhage with clear resection margins. Immunohistochemical examination demonstrated partial positive CD117 and CD34. Figure 4 shows the brown coloration of the CD117 positive tumor cells. Twelve days after admission the patient was discharged. GDS, two months after partial gastrectomy, showed no signs of recurrent disease. Seven months later the patient remains recurrence free.

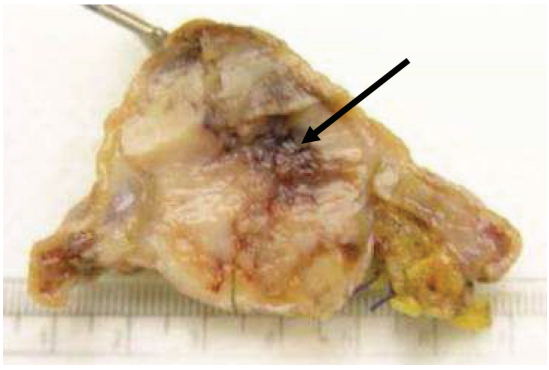

Figure 3 Wedge resection of the gastric mass with central hemorrhage (black arrow)

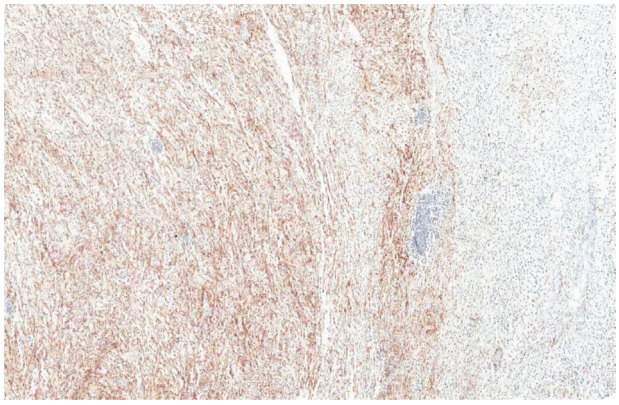

Figure 4 Immunohistochemical examination with brown coloration of the C-kit expression by the tumor cells

Discussion

Our case report is important for the clinicians because it underscores the fact that it can be challenging to differentiate submucosal neoplasms from benign submucosal tumors such as ectopic pancreas or lipomas, mainly because submucosal masses usually have a normal overlying mucosa surface. Therefore, EUS has been proposed as an alternative to conventional endoscopy (through which only superficial biopsies can be obtained by forceps), not only to visualize the layer of origin, but also to obtain deeper EUS-guided biopsies [4].

The clinical course in our patient was remarkable because in retrospect the GIST was already seen during initial GDS, but was interpreted as benign ectopic pancreas. Ectopic pancreas (also named aberrant pancreas, heterotopic pancreas, pancreatic rest) are uncommon and usually benign submucosal tumors consisting of pancreatic tissue. Ectopic pancreas is mostly seen in the proximal gastrointestinal tract (stomach, duodenum and jejunum, respectively). The majority is asymptomatic, but obstruction, bleeding or malignant development have been reported. Endoscopic view typically shows a central umbilication representing the draining duct [5]. In our case, the central erosion seen during initial endoscopy did not reveal any signs of bleeding and was interpreted as a central umbilication of an ectopic pancreas. Therefore no biopsies or EUS were performed.

GISTs appear endoscopically as submucosal masses with usually central ulceration. Three types of GIST are differentiated: spindle cell, epitheloid and mixed. Immuno-

phenotypic features distinguish GISTs from other mesenchymal neoplasms (for example leiosarcomas, lipomas and liposarcomas). GISTs typically express the tyrosin kinase receptor c-kit (CD117) in more than 90% of the cases and have KIT (80%) or PDGFRA mutations (10%), another tyrosine kinase receptor. Transmembrane receptor tyrosine kinase acts as a proto-oncogene. The majority of the GISTs also express CD34 which links them to the interstitial cells of Cajal (pacemaker cells of the gastrointestinal tract). Risk stratification is recommended for GIST using tumor size and mitotic count, but also tumor site [6]. GISTs located in the small intestine or rectum, lower mitotic count and smaller size are associated with a favorable clinical behavior. To determine the local extent of GIST and presence of metastasis, a CT scan is recommended. Surgery is the treatment of choice. In case of unresectability, metastasis or recurrent disease tyrosin kinase inhibitors (imatinib or sunitinib) are recommended. After complete resection adjuvant tyrosin kinase inhibitors should also be considered in case of high risk GISTs. Radiotherapy and chemotherapy are not effective in treating GISTs. A computed tomography (CT) scan is recommended for the follow up and detection of recurrent disease. Follow-up schemes depend on risk stratification mentioned earlier, presence of metastasis and surgical resectability [6-8].

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