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Case Report: Unusual Case of Gastrointestinal Bleeding Caused by Gastric Lleiomyoma

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Abstract

Leiomyomas, commonly known as fibroids when located in the uterus, are submucosal tumors originating from smooth muscle cells, and could involve the entire gastrointestinal (GI) tract, mostly the esophagus. Rarely have gastric leiomyomas (GLMs) been reported. GLMs are usually small but could produce symptoms when they grow larger. Herein, we document a 60-year-old woman with a solitary GLM detected during esophagogastroduodenoscopy (EGD) due to tarry stool passage. The following will provide a brief history and discuss the epidemiology, clinical manifestations, diagnosis, and treatment of GLMs.

Introduction

Though in a less frequent manner, leiomyomas can affect the gastrointestinal (GI) tract, with a predominance in the esophagus[1]. Gastric leiomyomas (GLMs) are submucosal tumor with smooth muscle fiber component, representing about 2.5% of all gastric neoplasms[2]. GLMs have an equal influence on both genders, with a peak incidence in their sixties[3].

Most GLMs are asymptomatic but could result in abdominal mass, obstruction, intussusception, volvulus, GI bleeding, or abdominal pain[4]. In the next part of this article, we report a case of symptomatic GLM in a 60-year-old woman presenting with chronic epigastric pain and a non-healing gastric ulcer.

Case report

A 60-year-old female who had been healthy previously presented with intermittent tarry stool passage with associated chronic epigastric pain for more than 2 years. She didn't have fever, body weight loss, or other discomfort. Initial physical examination, laboratory data, and plain film were all unremarkable. EGD revealed a protruding mass at least 3cm in size at antrum, with overlying central ulceration and tented mucosal fold (Figure 1, 2). Extensive biopsy at the base and edge was conducted but didn't show any significant result. In the following 2 years, she had received proton pump inhibitor (PPI) treatment and underwent follow-up EGD 3 times where this mass lesion combined with overlying ulceration

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still existed. Besides, all biopsy results were unremarkable and without Helicobacter pylori (H. pylori) infection. Due to non-healing nature of this lesion, contrast enhanced abdominal computed tomography (CT) was arranged. A 5cm-sized heterogeneously enhanced antral mass (Figure 3) in the absence of metastasis was detected.

Because the risk of malignancy is high, da Vinci-assisted laparoscopic subtotal gastrectomy with Billroth-I anastomosis was performed. Surgical pathology demonstrates smooth muscle proliferation, with fusiform and epithelioid morphology; immunohistochemical(IHC) stains are positive for smooth muscle actin (SMA) but negative for both CD117 and S100, supporting a diagnosis of leiomyoma (Figure 4, 5). The patient has satisfactory recovery after the operation and accepts vitamin B12 supplement since then, without unexpected complications. Till now, follow-up EGD 2 twice didn't show any anastomosis site ulceration or bleeding.

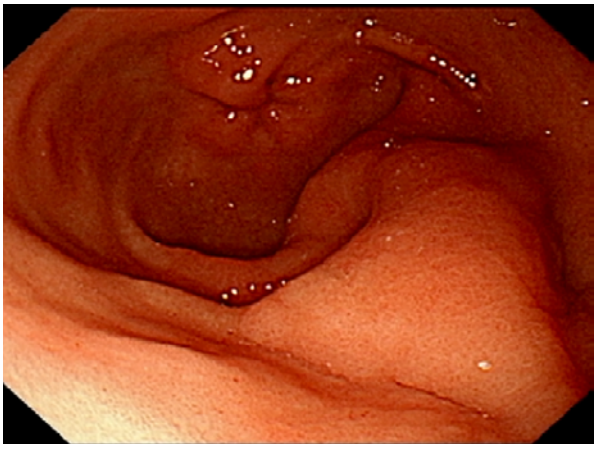

Figure 1. A protruding antral mass more than 3 cm in size in the antrum

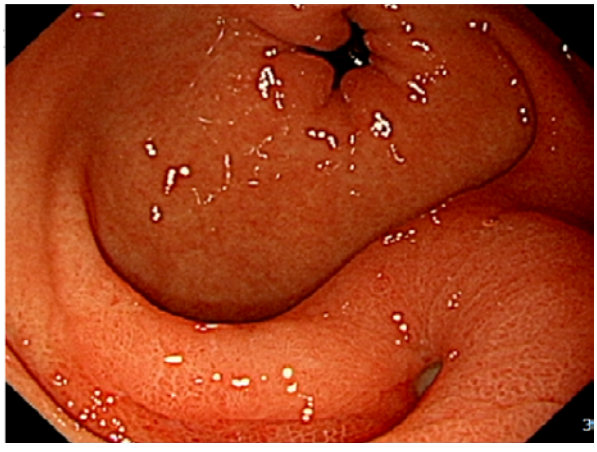

Figure 2. Close-up view demonstrating overlying central ulceration with tented mucosal fold

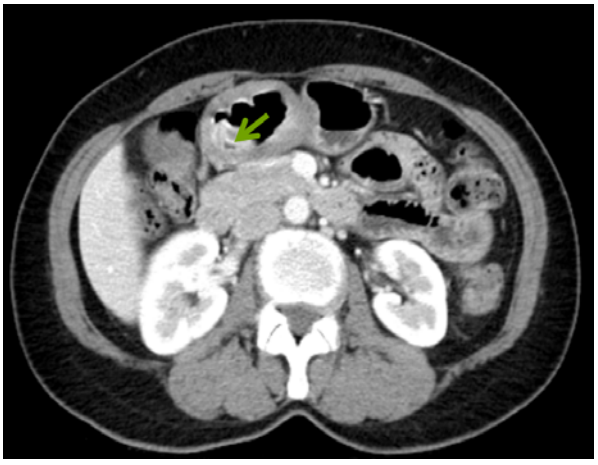

Figure 3. Computed tomography with contrast reveals a heterogeneously enhanced mass 5cm in size at antrum (green arrow).

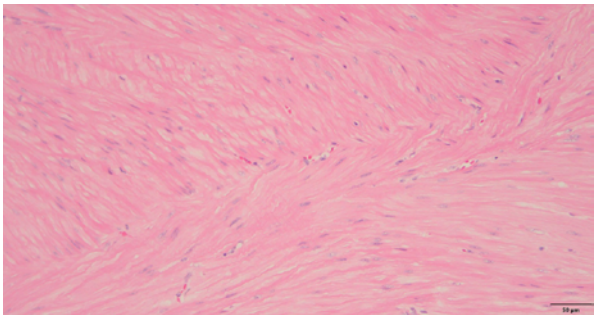

Figure 4. Surgical pathology shows smooth muscle proliferation with fusiform and epithelioid morphology, under x 100 magnification.

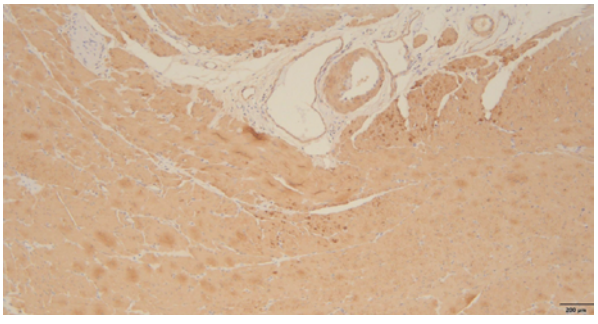

Figure 5. Immunohistochemical stains are positive for smooth muscle actin (SMA).

Discussion

GLMs were first delineated by Morgnai in 1762, and 300 cases confirmed in 1981 by Mambrini[5]. Generally slow-growing and asymptomatic, they could expand to more than 2 cm in size, thus leading to central ulceration[6]. Microscopically, there are smooth muscle hyperplasia with low c-kit expression, which guarantees a benign clinical course[7]. On endoscopic study, they possess a smooth and well-defined contour with effaced folds, referred to as the Schindler's sign[8]. CT of GLMs bears no particular characteristics, thus causing unnecessary surgical removal[9]. Endoscopic ultrasound (EUS) improves the diagnostic ability for differentiating between GLMs from other sub-epithelial lesions (SELs), such as gastrointestinal stromal tumors (GISTs)[10]. In one single-center, retrospective study, it is concluded that GLMs originate primarily in the muscularis mucosa and manifest as hypoechoic masses with clear border on EUS[11]. However, the small number of cases poses major limitations on making high quality interpretations. It is crucial to distinguish GLMs from GISTs because the latter may display malignant potential[12]. In patients presenting with gastric SELs with inconclusive diagnosis, EUS evaluation and tissue acquisition using mucosa-incision/stacked biopsy or EUS-guided fine needle aspiration (FNA) are recommended before surgical intervention. IHC stains suffice the role of differentiating between these two entities.

In our case, due to patient preference, she refused initial EUS study for the mass lesion and proceeded to surgery to minimize risk of malignancy. Although lack of EUS image in our report poses great limitation, we should use discretion and incorporate thorough pre-operative survey, mainly EUS, to avoid overtreatemnt. Although the patient has favorable outcome and the prognosis of GLMs is excellent, more research is needed to establish standardized methods of detecting this rare disease.

Conclusion

Gastric leiomyomas are rare and pose diagnostic challenges. In addition, we should take GLMs into consideration when approaching patients with chronic epigastric pain and non-healing gastric ulcers. Our case calls for an appropriate screening protocol, and further investigation is required to delineate the endoscopic and radiologic characterisitcs of the disease.

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個案報告：
胃平滑肌瘤導致不尋常的腸胃道出血

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摘要

平滑肌瘤屬於黏膜下腫瘤，最常發生在子宮；消化道的平滑肌瘤不常見，好發於食道，至於胃的平滑肌瘤則非常少見。平滑肌瘤通常沒有症狀，但仍有可能在變大的過程中，引起腹痛或消化道出血；本文介紹一個 60 歲女性因著解黑便和慢性腹痛，發現一個久不癒合的胃潰瘍，進而在術後確診胃平滑肌瘤。