Case Report

Gastric leiomyoma mimicking a carcinoma

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Introduction

Gastric leiomyomas, though the commonest benign tumour of the stomach, can mimic a carcinoma both clinically and also upon histopathological examination (1). This can lead to needless anxiety for the patient, possibly a diagnostic dilemma for the physician, and even a source of embarrassment for the pathologist. The clinical features are notorious for their varied spectrum, and limited endoscopic biopsy may often be non-diagnostic or even erroneous, thus compounding the diagnostic challenge (2). We present a case to illustrate some of these facts.

Case Report

A 70 year old gentleman was admitted with three days history of anorexia, epigastric pain, vomiting, melena, and one day history of hematemesis. There was history of peptic ulcer disease for the last two years, with anorexia, weight loss, and complaints of melena on and off for the last 6 months, and also bleeding hemorrhoids for the last 6 years. There was no other significant past history; specifically no history of jaundice, fever, abdominal pain, distension, previous blood transfusions, or surgery. He was a non-smoker. On examination, he was a markedly pale elderly ill looking and emaciated gentleman, fully conscious and oriented, afebrile with blood pressure of 130/90, regular pulse of 78 beats/min, and respiratory rate of 24/min. Systemic and external genitalia examination revealed no abnormality.

The patient was investigated with a possibility of an underlying malignancy, specifically that of upper gastro-intestinal tract. Laboratory data showed a microcytic hypochromic anemia with hemoglobin of 6.8gm/dl, with normal white cells and platelet count, renal and liver function tests, blood sugar, bleeding profile, and urine examination.. Chest x-ray was normal and ultrasonography of abdomen revealed no abnormal findings. A computerised tomographic (CT) scan was suggestive of carcinoma of the stomach along with inferior vena cava thrombosis below the level of celiac axis. Upper gastrointestinal endoscopy revealed a well-circumscribed mass 3–4 cm in size of which a biopsy was taken; histopathology showed atypical glands and cells suggestive of adenocarcinoma of the stomach.

After nine blood transfusions, a laparotomy was performed revealing a non-invasive well-circumscribed mobile mass in the region of fundus and greater curvature. Frozen sections were reported as leiomyoma, and a wide local excision with sufficient normal margin (5 x 4 x 4 cm) was done. Recovery was uneventful and the patient was discharged on the 8th post operative day. Histopathology report confirmed benign smooth muscle leiomyoma. Follow up at six months showed the patient markedly improved with significant weight gain and no GI blood loss.

Discussion

Leiomyomas – benign smooth muscle tumors – are commonly seen in the uterus and gastrointestinal tract. They are the most common benign tumours of the stomach and are present in 16% of autopsy cases when the stomach is scrutinised carefully. Though gastrointestinal stromal cell tumours (GIST) represent a small percentage of gastric neoplasms, eighty percent are benign leiomyomas, and only 20% are malignant[1]. The most common leiomyoma is of the uterus; oesophageal leiomyomas constitute more than 50% of all benign esophageal tumors[2], and cases of double leiomyomas have also been reported where esophageal and gastric leiomyomas

present synchronously[3]. Leiomyomas are also the most common benign tumor of the small bowel[4].

. Histologically leiomyomas, leiomyosarcomas and leiomyoblastomas are related, and as a rule are very difficult to differentiate as some highly cellular leiomyomas contain an increased number of mitotic figures, thus leading to diagnostic challenges. Though there is no evidence that benign leiomyomas undergo malignant transformation, ulcerated mucosa, size > 3 cm, hypoechoic or hyperechoic foci, poorly defined margins, irregular shape, abnormal lymph nodes, and high growth rate have all been associated with a greater likelihood of malignancy[5]. In the absence of these features, malignancy is exceedingly rare.

The clinical features of gastric leiomyomas depend on site, size, and presence of secondary complications. Small leiomyomas are usually asymptomatic and rarely of clinical significance. Common symptoms include pain, anorexia, weight loss, hematemesis, and melena, and in low-lying gastric leiomyomas, gastroduodenal intussusception which can present as an acute abdomen[6]. The vast majority of leiomyomas are discovered incidentally upon investigating for dyspepsia. These usually occur in the distal half of the stomach and may encroach on the lumen, efface the mucosa, and develop secondary ulceration. Leiomyoma may also present as an abdominal mass, and can grow in the direction of the serosa, producing a mass that is predominantly extrinsic, or display concurrent inward and outward growth resulting in a dumbbell shape; albeit, this shape is characteristic of leiomyosarcomas. A subgroup of these tumors is annular and can cause obstruction.

The differential diagnosis of gastric leiomyoma is myriad; being notorious for mimicking peptic ulcer disease; with hemorrhage and hematemesis if superficial ulceration present[7]. Other conditions mimicked include gastric carcinoma[8], chronic gastritis, and carcinoid tumors of the stomach[9]. As in this case, features of marked weight loss and pallor with obstructive symptoms, were all reminiscent of a malignant pathology.

Gastroscopic examination reveals effaced but normal mucosa overlying the mass, but limited endoscopic biopsy is notoriously often unrewarding, non-diagnostic, or erroneously reported[7]. The diagnosis is facilitated greatly by endoscopic ultrasound (EUS) which is now the technique of choice in diagnosing small submucosal muscle tumors. It discriminates intramural lesions from extrinsic compression, and characterizes a submucosal tumor's layer of origin and echotexture[10]. Thus, a hyperechoic lesion (consistent with a fatty tumor) may be distinguished from a hypoechoic lesion arising from the muscularis propria (stromal cell tumour). Video-laparoscopy is also a very useful tool for avoiding exploratory laparotomy, allowing full and meticulous explorations of the gastrointestinal tract to be performed[11,12]. Ultrasonography, double contrast x-rays and computed tomography studies[13] have also shown to be capable in detecting leiomyomas, but with varying sensitivity and specificity.

Small, asymptomatic leiomyomas need not be removed. Lesions smaller than 0.7 cm can be managed by endoscopic electrosurgical excision, but symptomatic lesions or those more than 3 cm in diameter should be removed by surgery. As most lesions are not amenable to endoscopic excision, laparoscopic local excision or laparoscopic (extraluminal) wedge resection offers an ideal method to both establish a diagnosis and treat[14,15], and is most frequently applied successfully in cases of anterior lesions. Although wedge resections have also been described for certain tumors of the posterior wall[16], the endoluminal (transgastric) approach may be the best option for tumors in the cardia or near the gastroesophageal junction[17]. Laparoscopic resection has been shown to be not only safe but also operating time and estimated blood loss has been shown to be equivalent to open resection, with a statistically shorter hospital stay[18,19]. Minimally invasive methods are usually limited to diagnostic and staging efforts, but laparoscopy may reveal unresectable disease and permit palliation without laparotomy[20]. However, for wide resection and lymphadenectomy when attempting curative resection, laparotomy is unavoidable.

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