

A Gastric Fibrolipoma Presenting as Acute Gastrointestinal Hemorrhage

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ABSTRACT

A 56-year-old woman was admitted to our hospital with upper gastrointestinal hemorrhage from a gastric submucosal tumor that was treated by a laparoscopic technique. Endoscopy and endoscopic ultrasonography (EUS) revealed a 2-cm submucosal tumor located in the posterior wall of the upper gastric body, showing a heterogeneous hyperechoic tumor. A laparoscopic wedge resection of the stomach was performed. Pathological examinations revealed that the tumor was composed of spindle cells like fibroblasts and mature adipocytes. Immunohistochemical examinations revealed that the tumor was negative for desmin and α -smooth muscle actin. Based on these findings, a diagnosis of fibrolipoma was made. EUS is useful for differentiating a fibrolipoma from a gastrointestinal stromal tumor or lipoma by the findings of characteristic echogenesity and detection of the tumor origin.

Key words: *Fibrolipoma, Gastrointestinal hemorrhage, Endoscopic ultrasonography*

Gastrointestinal lipomas are most frequently seen in the colon and are uncommon in the stomach¹¹. Gastric lipomas may cause severe hemorrhage or chronic iron deficiency anemia. These complications are curable by excision of the tumor, which is usually benign⁸. On the other hand, a gastric fibrolipoma is extremely rare and there has been no report in the English literature. We report here the first case of acute upper gastrointestinal hemorrhage from a gastric fibrolipoma that was excised by laparoscopic wedge resection of the stomach.

CASE REPORT

A 56-year-old woman was admitted to our hospital complaining of nausea, epigastric pain, and hematemesis. Her systolic and diastolic blood pressures were 98 mmHg and 64 mmHg, respectively, and her heart rate was 96 beats per

minute. Laboratory data showed slight anemia (hemoglobin, 9.8 g/dl; hematocrit, 27.6%) and an abnormal value of blood urea nitrogen (BUN 25.2 mg/dl). Upper gastrointestinal endoscopy performed as an emergency revealed a submucosal tumor of 2 cm in size with a superficial ulcer of the apex on the posterior wall of the upper gastric body (Fig. 1). A small amount of oozing from the tumor was found and was treated by endoscopic hemostatic clipping. Preoperative pathological examination by biopsy was not performed, to prevent re-bleeding from the tumor. Abdominal computed tomography (CT) demonstrated no tumor in the stomach. An upper gastrointestinal series revealed a gastric tumor of 2 cm in size on the posterior wall of the upper gastric body. Endoscopic ultrasonography (EUS) demonstrated a heterogeneous hyperechoic tumor at the posterior wall and revealed that the tumor seemed to originate from the fourth hypoechoic endosono-

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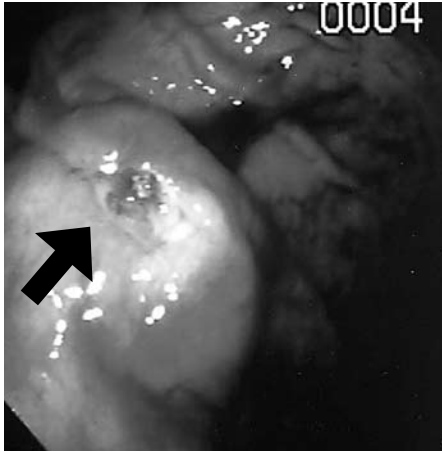
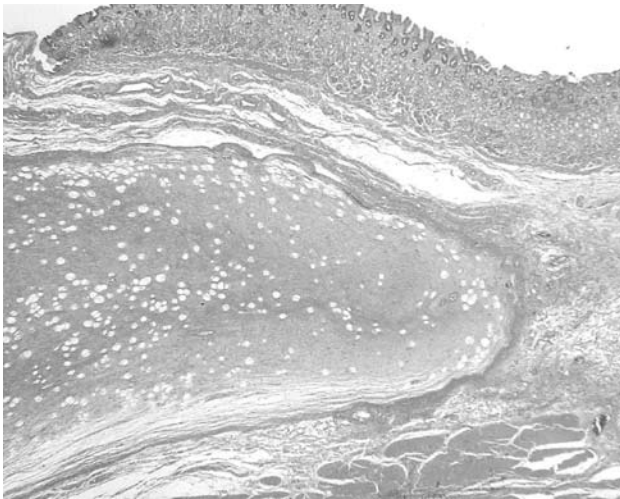


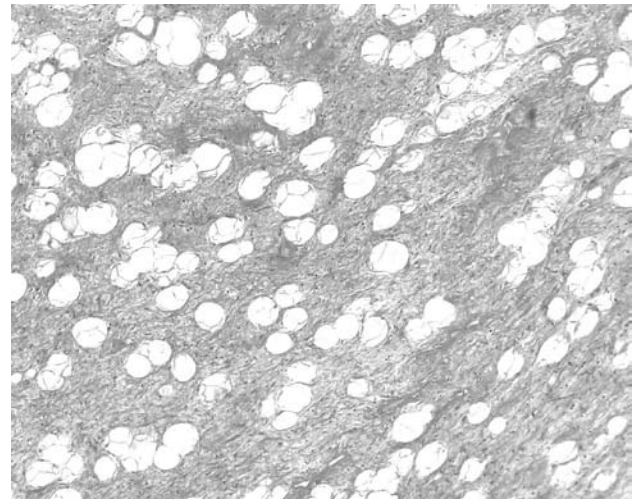
Fig. 1. Upper gastrointestinal endoscopy revealed a submucosal tumor on the posterior wall of the upper gastric body with a small ulcer at its apex (arrow).



Fig. 2. Endoscopic ultrasonography showed a heterogeneous hyperechoic tumor of 20 mm in size that originated within the fourth hypoechoic endosonographic layer.



(a)



(b)

Fig. 3. Photomicrograph showing a fibrolipoma located in the submucosal layer (a) and composed of spindle cells like fibroblasts and mature adipocytes (b).

graphic layer that corresponded to the muscularis propria (Fig. 2). These findings suggested that the acute gastrointestinal hemorrhage might have been caused by the submucosal tumor originating from the muscular layer. Therefore, the pre-operative diagnosis was gastrointestinal stromal tumor (GIST). A laparoscopic wedge resection of the stomach was performed. The excised submucosal tumor was elastic soft and 3.3×2.0 cm in size. Pathological findings revealed that the tumor was located in the submucosal layer (Fig. 3a) and consisted of spindle cells like fibroblasts and mature adipocytes (Fig. 3b). These cells did not have nuclear pleomorphism, mitosis or necrosis. Immunohistochemical findings revealed that these cells were negative for desmin and α -smooth muscle actin as markers of myogenic cells. Pathological diagnosis of the tumor was gastric fibrolipoma. The patient had an uneventful post-operative course and has been doing well without recurrence for four years.

DISCUSSION

This is the first reported case in the English literature of a gastric fibrolipoma presenting hematemesis. Lipomas are benign tumors consisting of a fibrous capsule surrounding mature adipose tissue. Gastric lipomas are rare and account for only 3% of all benign gastric tumors and 5% of all gastrointestinal lipomas^{5, 9}. According to a review by Ferrozzi et al, previously reported incidences of lipomas in autopsy series were 0.029% and 0.18%⁵. Lipomas are occasionally altered by the admixture of other mesenchymal elements that comprise an intrinsic part of the tumor. The most common of these elements is fibrous connective tissue. Lipomas with these features are often classified as "fibrolipoma"¹². The etiology of fibrolipoma in other sites is generally considered to be chronic mechanical irritation or inflammation that induces secondary fibrous changes in the lipoma^{7, 14}. On the other hand, Hsu et al

reported that fibrolipomas arose from the maturation of lipoblastomatosis. Further maturation of both adipose tissue and fibrous tissue resulted in mature strands of collagen separating fat cells into lobules, characteristic of a fibrolipoma⁶.

According to reports on gastric lipomas, most lipomas are asymptomatic and are found incidentally. Tumor size is the most critical factor of the symptoms. Tumors smaller than 1 cm are asymptomatic, whereas 75% of tumors larger than 4 cm are symptomatic^{1, 10}. However, lipomas cause upper gastrointestinal hemorrhage, which is the most common symptom and found in more than 50% of patients^{1, 10}. Lipomas sometimes cause chronic abdominal pain, chronic iron deficiency anemia, gastroduodenal intussusception, dyspepsia, and obstruction^{8, 10}. On the other hand, GISTs in the stomach also cause gastric hemorrhage from overlying mucosal ulceration of the tumor, and 60% of patients with GISTs in the stomach had this symptom^{3, 13}. Differential diagnosis between gastric lipomas and GISTs is important because the surgical method for treating a patient with lipoma is different from that for a patient with GIST. Although GISTs should be treated by wedge resection with an adequate surgical margin or standard gastrectomy, nucleation of the tumor might be sufficient to treat lipomas.

Paksoy et al reported that CT is the best imaging and diagnostic method for gastric lipomas¹⁰. Ferrozzi et al reported that the increased sophistication of radiologic studies and classic features enabled lipomas larger than 2 cm to be diagnosed correctly by CT⁵. In the present case, the fibrolipoma could not be found by CT, but EUS showed it clearly. By EUS, a lipoma is typically identified as a homogeneous hyperechoic mass in the third endosonographic layer². Approximately 90–95% of gastrointestinal lipomas are located in the submucosal layer, and the remaining 5–10% are located in the subserosal layer⁴. On the other hand, the hypoechoic appearance by EUS is characteristic of GISTs. It is suggested that EUS is useful for differentiating a fibrolipoma from a GIST or lipoma by the finding of characteristic echogenesity. Moreover, EUS shows clearly that GISTs originate in the fourth hypoechoic endosonographic layer (muscularis propria) of the gastric wall². In the present case, EUS revealed a heterogeneous hyperechoic tumor that was not identical to a lipoma or GIST. Moreover, the tumor seemed to originate in the fourth endosonographic layer, although the tumor actually originated in the third endosonographic layer. Precise identification by EUS of the endosonographic layer in which the tumor originated would have prevented the misdiagnosis of GIST.

In summary, we have described a case of fibrolipoma of the stomach and have shown that EUS is a useful modality for accurate diagnosis

of submucosal tumors of the stomach before the operation, thus enabling appropriate choice of the method of treatment.

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