

Gastric Malignant Stromal Tumor with Long Stalk Impacted into Duodenum

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Abstract

Most GIST have traditionally been classified as submucosal origin by upper gastrointestinal series (UGIS) or endoscopy. However, we experienced a gastrointestinal mesenchymal origin tumor expressed by polypoid mass with a long stalk. The gastric outlet was obstructed by the polypoid mass on the duodenum. The microscopic findings of the resected mass showed a stromal cell component by immunohistochemical stain. We experienced gastric stromal tumor found as a polypoid mass with long stalk which was easily detected by endoscopy. It would not have been suspected as a stromal tumor as a result of endoscopic findings only.

Key Words: Gastrointestinal stromal tumor, polypoid mass, stomach

INTRODUCTION

Gastrointestinal stromal tumors (GIST) are mesenchymal tumors for which there is incomplete understanding of their cell lineage, while their relationship with differentiated smooth muscle and Schwann cells remains uncertain.¹ There has been much speculation and many controversies regarding the origin and differentiation of GIST. Most GIST traditionally have been classified as smooth muscle tumors. Most primary mesenchymal tumors of the gastrointestinal tract are submucosal in origin by upper gastrointestinal series (UGIS) or endoscopy.² It is rare for gastric stromal tumors to appear as a pedunculated polypoid lesion at endoscopy.³ Gastric stromal tumors are therefore usually treated by surgical enucleation or resection.^{4,5} We experienced a GIST presenting as a pedunculated polypoid mass with a long stalk.

CASE REPORT

A 71-year-old man was admitted to our hospital for evaluation of vomiting of 2 months duration. He had a 5 kg weight loss and intermittent melena during the previous 2 months. Physical examination revealed pale conjunctiva and slight epigastric tenderness. Laboratory evaluation on admission showed hemoglobin as 5.4 g/dL and hematocrit as 16.7%. Endoscopy showed a thick, long stalk (measuring 1 cm in diameter) that originated from the anterior wall of the proximal portion of the antrum. The long stalk passed through the pyloric ring and reached the junction of the 2nd and 3rd portion of duodenum (Fig. 1). The size of the head by endoscopic measure was 5.0 × 5.0 cm. The surface of the head was slightly eroded and irregular, but there was no definite ulceration. We pulled back the stalk in the antrum but the head could not pass through the pyloric ring. The endoscopic punch biopsy showed a stromal tumor of suspicious malignancy. A subsequent UGIS (Fig. 2A) showed the same findings as the endoscopy. An abdominal computed tomography did not reveal any evidence of metastasis (Fig. 2B). The polypoid lesion and its stalk was removed (Fig. 3) by surgical wedge resection. The size of the head was 5.0 × 4.8 × 3.5 cm. The stalk measured 5.0 × 0.8 × 0.5 cm. The stalk and the resection margin showed no invasion by

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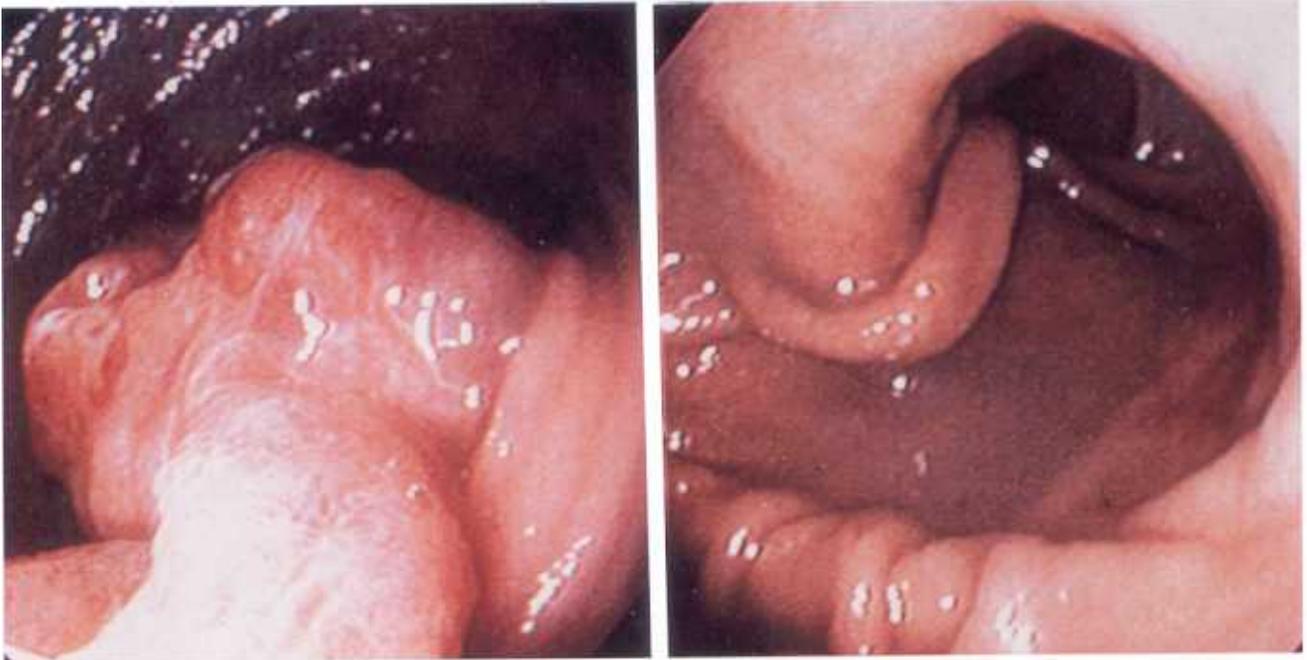


Fig. 1. Endoscopy showing long stalk with large tumor mass impacted into the duodenum, which originates from the anterior wall of gastric antrum.

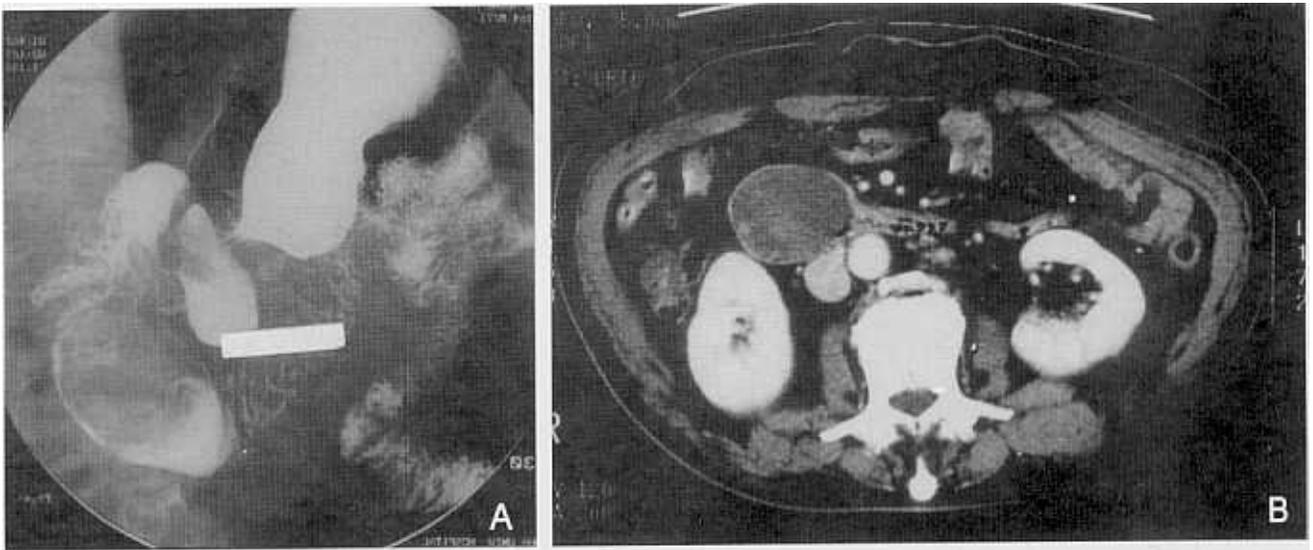


Fig. 2. A, Upper gastrointestinal series showing large impacted tumor with long stalk into duodenum. B, Abdominal CT scan showing impacted tumor mass into the 2nd portion of duodenum and no regional lymph node enlargement.

tumor cells. Six atypical mitotic figures per 10 high-power field (HPF) were present in the head. The tumor cells showed positive reactions against smooth muscle actin (DAKO, Copenhagen, Denmark) and vimentin (DAKO, Copenhagen, Denmark) (Fig. 4 and 5). A diagnosis of gastric malignant stromal tumor was made and the patient has

stayed well without local recurrence or evidence of metastasis for more than 11 months.

DISCUSSION

The stomach is the commonest site for gastro-

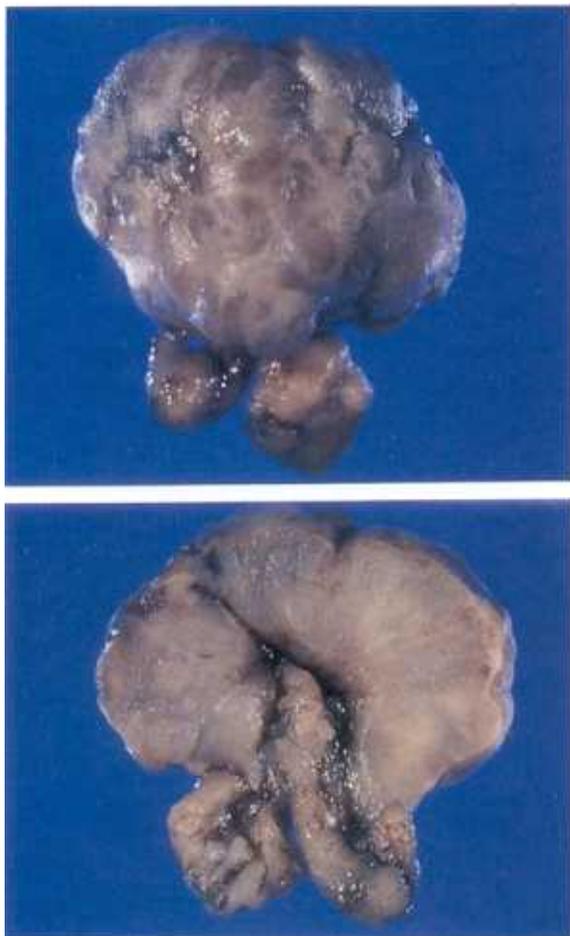


Fig. 3. Gross finding of resected specimen showing stalk and head that the cut surface showing fish-flesh appearance without covering mucosa.

intestinal tract stromal tumors such as leiomyoma. Since He et al.⁴ reported that 28.2% of 160 gastrointestinal tract smooth muscle tumors to be predominantly intraluminal, it has not been uncommon for a gastric leiomyoma to present as an elevated lesion at endoscopy. Most of these polypoid lesions however belong to Type 1 of Yamada's classification,⁶ i.e. they are sessile and only slightly raised from the surrounding mucosa. It is very rare for a gastric stromal tumor to manifest as a Type IV polypoid lesion, i.e. a pedunculated polyp, and only isolated case reports are available.^{3,7}

Ueyama et al. reviewed the clinicopathological and immunohistochemical features in 120 cases of GIST.⁸ They reported that all esophagus and colon tumors were benign and resembled a conventional leiomyoma. However, the gastric and small intestinal benign

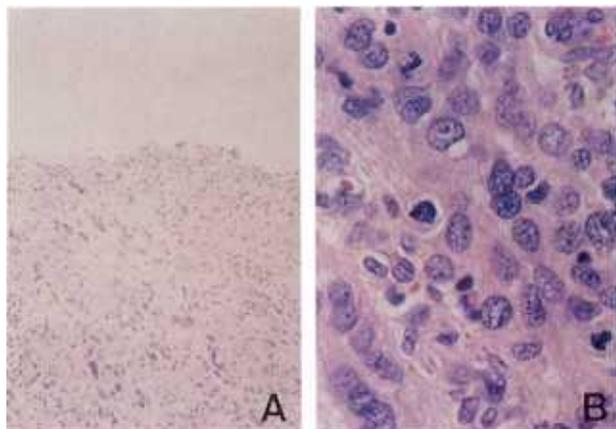


Fig. 4. Microscopic pictures of the operated specimen. A, Surface of mass has no covering mucosa (H&E, original magnification 40). B, Multiple mitosis more than 5/HPF in the mass composed of epithelioid cells (H&E, original magnification 400).

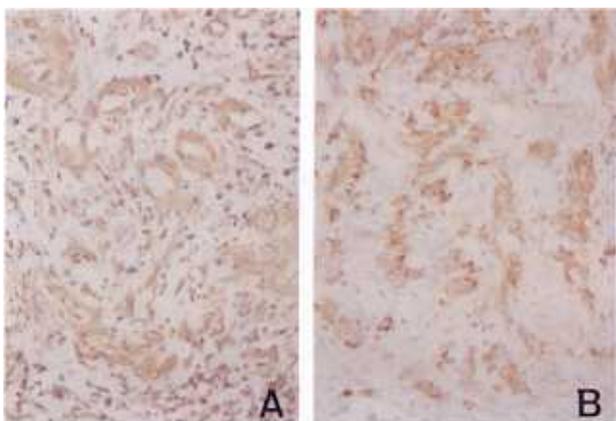


Fig. 5. A, Microscopic view of a tumor head with SMA positive tumor cells (SMA immunohistochemical stain, original magnification 200). B, Microscopic view of a tumor head with vimentin-positive tumor cells (vimentin immunohistochemical stain, original magnification 200).

tumors mostly showed histological features of cellular or epithelioid leiomyoma. Immunohistochemically, all esophagus and colon tumors showed a positive reaction to desmin, but only 26% of gastric and small intestine tumors were desmin-positive. Desmin positivity was seen either diffusely or focally within the tumor in only 34% of GIST. Muscle-specific actin (HHF35) showed a positive reaction in most GIST (92%). Smooth muscle tissue of the normal gastrointestinal tract, including the muscularis mucosae and muscularis propria, had a strong positive reaction

toward desmin and HHF35, and a negative reaction for vimentin. Vimentin showed a positive reaction in the endothelial and smooth muscle cells of the vasculature, however vimentin showed a positive reaction in most tumors except well-differentiated smooth muscle tumors.

The case under discussion showed the positive reaction toward vimentin and smooth muscle actin. Therefore, a diagnosis of GIST was well justified in this case despite the fact that the tumor was unusually polypoid in shape with a long stalk. While it may occasionally be difficult to differentiate a benign stromal tumor from a malignant one, in general a tumor that is more than 5 cm in size and with >5 mitosis/10 high power field is considered to be malignant.⁴ This case would therefore be classified as having a malignant tumor.

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