

## CASE REPORT

# GIST case turned out to be a perforated peptic ulcer: a case report

Seyed Amir Miratashi Yazdi<sup>1</sup>, Pedram Habibi<sup>2</sup>, Arezoo Eftekhari Javadi<sup>3</sup> and Reza Hajebi<sup>1,\*</sup>

<sup>1</sup>General Surgery Department, Sina Hospital, Tehran University of Medical Sciences, Tehran, Iran, <sup>2</sup>School of Medicine, Tehran University of Medical Sciences, Tehran, Iran and <sup>3</sup>Department of Pathology, Sina Hospital, Tehran University of Medical Sciences, Tehran, Iran

\*Correspondence address. Department of Surgery, School of Medicine, Sina Hospital, Tehran University of Medical Sciences, PO Box 1136746911, Hassan Abad Square, Imam Khomeini Avenue, Tehran, Iran. E-mail: r-hajebi@sina.tums.ac.ir

## Abstract

Gastrointestinal stromal tumors (GISTs) are tumors arising from the fourth layer of the stomach. They are the most common form of mesenchymal neoplasms in the gastrointestinal tract. The diagnosis for the aforementioned tumors is made through endoscopic ultrasonography (EUS) with no further inspection through biopsies and aspirations. Regarding the fact that biopsies are not made in these cases, pathological misdiagnoses, however rare and effectual in the final outcome of the surgery, do occur. Here, we present a case of a 35-year-old male diagnosed with GIST through the means of EUS however, the post-op pathology report showed something very interesting. This patient was reported to be a case of perforated peptic ulcer and we found vegetable fiber component in the tissue of this patient. Bearing in mind the finding, misdiagnoses of GIST patients are probable, and careful planning prior to the surgery is recommended.

## INTRODUCTION

Gastrointestinal stromal tumors (GISTs) are believed to arise from cells of Cajal, which are also known as the pacemakers in gastrointestinal (GI) movements [1]. They are the most common type of mesenchymal neoplasms in the GI tract [2]. Between 10 and 30% of GISTs become malignant [3].

GIST diagnosis is mostly accomplished through endoscopic ultrasonography (EUS) [4] with no need for biopsy due to the risk of bleeding and the consideration that often biopsies results are non-representative due to the submucosal position of GISTs.

Surgery holds the place for the best modality regarding permanent cure of the tumor. The surgery is aimed toward full resection of the tumor with as much preserved functionality as the situation allows. The role of margin status is not well defined.

It has been suggested before that it may even have no effect on the prognosis of the patient [5].

Seldom EUS reports mistake other pathologies with GIST. PPU is a medical emergency with a mortality rate of ~30%. The most common causes of PPU are *Helicobacter pylori* and use of non-steroidal anti-inflammatory drugs [6].

## CASE REPORT

A 35-year-old male referred to the hospital with abdominal pain and intermittent food intolerance, concomitant with 6 kg of weight loss since 3 months earlier. No prior history of GI disease, drug use, abdominal pain and similar problems in his family were observed. In the abdominal examination, the abdomen appeared to be normal and no distension or organomegaly was

Received: August 29, 2021. Revised: October 8, 2021. Accepted: October 12, 2021

Published by Oxford University Press and JSCR Publishing Ltd. All rights reserved. © The Author(s) 2021.

This is an Open Access article distributed under the terms of the Creative Commons Attribution Non-Commercial License (<http://creativecommons.org/licenses/by-nc/4.0/>), which permits non-commercial re-use, distribution, and reproduction in any medium, provided the original work is properly cited. For commercial re-use, please contact [journals.permissions@oup.com](mailto:journals.permissions@oup.com)



Figure 1: Mass-like lesion in antrum.



Figure 2: Stenosis of the gastric outlet. R means right and L means left.

observed. Also, no tenderness, rebound tenderness and guarding were noted. Prior to referral to the surgery clinic, the patient had undergone endoscopy and computed tomography (CT) scan, and the reports are as follows.

### Endoscopy report

Stomach: normal fundus, normal body and a large submucosal mass lesion with partial obstruction of the gastric outlet.

Duodenum: Bulbar deformity, normal D2.

### CT scan report

Increased gastric wall thickness was observed with emphasis on antropyloric region and the lesser curvature with maximum thickness of 21 mm accompanied by fat stranding around the same areas. Evidence of partial stenosis with mild dilatation of stomach was seen. Contrast agent has penetrated through the distal region and no leak of contrast agent is observed. Liver, spleen and the pancreas looked normal. No apparent paraaortic lymphadenopathy was observed. No free fluid was observed in the abdomen and the pelvic cavity (Figs 1 and 2).

Considering the aforementioned reports, EUS was requested, and the report was as follows: two large sub epithelial lesions were seen in the antral territory that caused partial obstruction of gastric passage.

Upper GI: There was large mixed echo mass 3244 mm in size with marked border with three cystic lesions in it and another one, a 26 × 22 mm SEL, both of which originated from forth layer of the gastric wall. The lesion is located between the left liver lobe and the outlet of the stomach. One lymph node was seen around the lesions.

Hepatobiliary: At visible range, there was no intrahepatic ducts dilation, with no intrahepatic masses or lesions.

Final diagnosis: GIST with worrisome signs is a highly probable diagnosis.

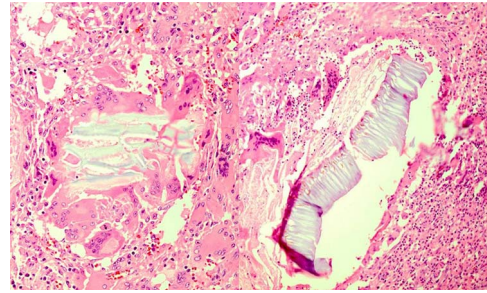


Figure 3: Multinucleated foreign body-type giant cells and inflammatory cells surrounding the vegetable fibers.

### LAB FINDINGS

At laparotomy, severe adhesions of the omentum, falciform ligament, and left hepatic lobe to the stomach antrum were noted, below which a mass like lesion was felt and observed. The stomach was deformed and dilated, with no evidence of seeding or metastasis in the peritoneal cavity. Separation of the stomach and the liver was not feasible. On this patient, distal gastrectomy, resection of Segment II of the liver en bloc with the stomach and Billroth II were performed. Five days after the surgery, the patient was discharged with stable general condition and food tolerance.

WBC: 9.1	RBC: 3.5	Hb: 9.8	Plt: 367	Cr: 1.2	Na: 144	K: 4.3
AST: 23	ALT: 12	ALP: 165	PT: 13.7	PTT: 41	INR: 1.08	

### Pathology report

Portions of the gastric wall with acute and chronic inflammation were received. Fat necrosis, foreign body-type giant cells, granulomatous formation and fibroblastic proliferation in serosal and perigastric fat were observed, which had infiltrated submucosa in some areas and were attached to the liver tissue (vegetable fibers component?).

Perigastric fat tissue also shows acute and chronic inflammation, fat necrosis and foreign body-type granulomatous formation.

Omentum shows focal foreign body-type granulomatous formation (Fig. 3).

### DISCUSSION

Peptic ulcer disease has been shown to be related with urbanization [7]. Complications might occur following this disease, such as perforation, obstruction, bleeding and malignancy. Perforated peptic ulcer (PPU) is associated with high rates of mortality: around 30%. Considering the circumstances, perforation of a peptic ulcer requires immediate attention and is considered to be a medical/surgical emergency.

GISTs have been shown to arise from the fourth layer of the stomach [1]. Ten to 30% of GISTs become malignant [3]. The diagnosis of GIST is accomplished through EUS with no further aspiration and/or biopsy, bearing in mind the high bleeding risk of these tumors.

For our patient, after endoscopy and CT scan, EUS was proposed as the final pre-surgical diagnosis, and the report suggested GIST to be the pathology of the tumor. The patient denied any prior similar pain in the past and was transferred to the

operating room as a case of GIST. In the operating room, a mass-like lesion was observed and removed. However, it was the pathology report that made this case interesting enough to be included as a case report. The report came out as vegetable fibers component inside the received tissue. Our suspicions are that after the peptic ulcer formed a perforation, food material exited the GI tract and grew to be a vegetable fiber component.

Regarding our findings, a peptic ulcer that is walled off with the omentum could potentially mimic a tumor and pre-op paraclinicals might not be as accurate as one might suspect.

### CONFLICT OF INTEREST STATEMENT

None declared.

### FUNDING

The authors have received no funding from any institutions.

### INFORMED CONSENT

The patient understood that his clinical data would be used for publication purposes and provided his consent.

### REFERENCES

1. Kindblom LG, Remotti HE, Aldenborg F, Meis-Kindblom JM. Gastrointestinal pacemaker cell tumor (GIPACT): gastrointestinal stromal tumors show phenotypic characteristics of the interstitial cells of Cajal. *Am J Pathol* 1998;**152**:1259–69.
2. Rubin BP, Heinrich MC, Corless CL. Gastrointestinal stromal tumour. *Lancet* 2007;**369**:1731–41.
3. Akahoshi K, Oya M, Koga T, Shiratsuchi Y. Current clinical management of gastrointestinal stromal tumor. *World J Gastroenterol* 2018;**24**:2806–17.
4. Nishida T, Blay JY, Hirota S, Kitagawa Y, Kang YK. The standard diagnosis, treatment, and follow-up of gastrointestinal stromal tumors based on guidelines. *Gastric Cancer* 2016;**19**:3–14.
5. McCarter MD, Antonescu CR, Ballman KV, Maki RG, Pisters PW, Demetri GD, et al. Microscopically positive margins for primary gastrointestinal stromal tumors: analysis of risk factors and tumor recurrence. *J Am Coll Surg* 2012;**215**:53–9 discussion 9–60.
6. Soreide K, Thorsen K, Harrison EM, Bingener J, Moller MH, Ohene-Yeboah M, et al. Perforated peptic ulcer. *Lancet* 2015;**386**:1288–98.
7. Malfertheiner P, Chan FK, McColl KE. Peptic ulcer disease. *Lancet* 2009;**374**:1449–61.