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Small, spontaneously ruptured gastrointestinal stromal tumor in the small intestine causing hemoperitoneum: A case report

Shuichi Fukuda[a,*], Yoshinori Fujiwara[a], Tomoko Wakasa[b], Keisuke Inoue[a], Kotaro Kitani[a], Hajime Ishikawa[a], Masanori Tsujie[a], Masao Yukawa[a], Yoshio Ohta[b], Masatoshi Inoue[a]

[a] Department of Gastroenterological Surgery, Kindai University Nara Hospital, Nara, Japan
[b] Department of Pathology, Kindai University Nara Hospital, Nara, Japan

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ABSTRACT

INTRODUCTION: Gastrointestinal stromal tumors (GISTs) are clinically asymptomatic until they reach a significant size; therefore, GISTs that are 2 cm or less are typically asymptomatic. Patients with symptomatic GISTs typically present with abdominal pain, gastrointestinal bleeding, or a palpable mass but rarely present with hemoperitoneum.
PRESENTATION OF CASE: A 72-year-old Japanese man presented to us with acute onset abdominal pain. Physical examination showed peritoneal irritation in the lower abdomen. Findings of abdominal computed tomography were suggestive of hemoperitoneum; therefore, urgent surgery was performed. Approximately 1500 ml of blood in the abdominal cavity was removed. A small, ruptured mass was found in the middle of the small intestine, and partial resection of the small intestine, including the mass, was performed. The resected tumor was 2 cm in size and exhibited an exophytic growth pattern. Immunohistochemical staining revealed that the tumor was positive for KIT and CD34; therefore, a final diagnosis of GIST was made. Treatment with imatinib at 400 mg per day was started from postoperative month 1. The patient is doing well without recurrence 5 months after surgery.
DISCUSSION: Even small GISTs in the small intestine can spontaneously rupture and cause hemoperitoneum. Moreover, when a patient presents with sudden abdominal pain and hemoperitoneum without an evident mass on imaging, clinicians should be aware of the possibility of bleeding from a small GIST in the small intestine.
CONCLUSION: We present an extremely rare case of a patient with a small, spontaneously ruptured GIST in the small intestine, resulting in hemoperitoneum.

1. Introduction

Gastrointestinal stromal tumors (GISTs) are the most common mesenchymal tumors of the gastrointestinal tract [1]. GISTs occur throughout the gastrointestinal tract, arising most commonly from the stomach (50%–60%) followed by the small intestine (30%–35%) [2]. Approximately two-thirds of GISTs in the small intestine are 5 cm or more in diameter at the time of diagnosis and rarely 2 cm or less [3]. The majority of GISTs are clinically asymptomatic until they reach a significant size; therefore, GISTs that are 2 cm or less are typically asymptomatic.

Symptomatic GISTs are generally associated with abdominal pain, gastrointestinal bleeding, or a palpable mass but rarely associated with hemoperitoneum [2]. Hemoperitoneum is a potentially life-threatening complication of GISTs caused by burst of the intratumoral blood vessel and rupture of the tumor capsule. Spontaneously ruptured GISTs have been reported to be generally over 5 cm [4]. Here we report an extremely rare case of a patient with a spontaneously ruptured GIST in the small intestine, only 2 cm in size, causing hemoperitoneum. The work has been reported in line with the SCARE criteria [5].

2. Presentation of case

A 72-year-old Japanese man presented to our hospital with sudden abdominal pain. His blood pressure was 108/72 mmHg, his pulse was 83 beats per minute, and his temperature was

Abbreviations: CT, Computed tomography; GIST, Gastrointestinal stromal tumor.

* Corresponding author at: Department of Gastroenterological Surgery, Kindai University Nara Hospital, 1248-1, Otoda-cho, Ikoma, Nara 630-0293, Japan.
E-mail addresses: s.f4911@nifty.com (S. Fukuda), yyfujiwara@nara.med.kindai.ac.jp (Y. Fujiwara), wakasa@nara.med.kindai.ac.jp (T. Wakasa), inoue-ke@nara.med.kindai.ac.jp (K. Inoue), kitani@nara.med.kindai.ac.jp (K. Kitani), hajime@nara.med.kindai.ac.jp (H. Ishikawa), tsujie@nara.med.kindai.ac.jp (M. Tsujie), yukawa@nara.med.kindai.ac.jp (M. Yukawa), ohta@nara.med.kindai.ac.jp (Y. Ohta), minoue@nara.med.kindai.ac.jp (M. Inoue).

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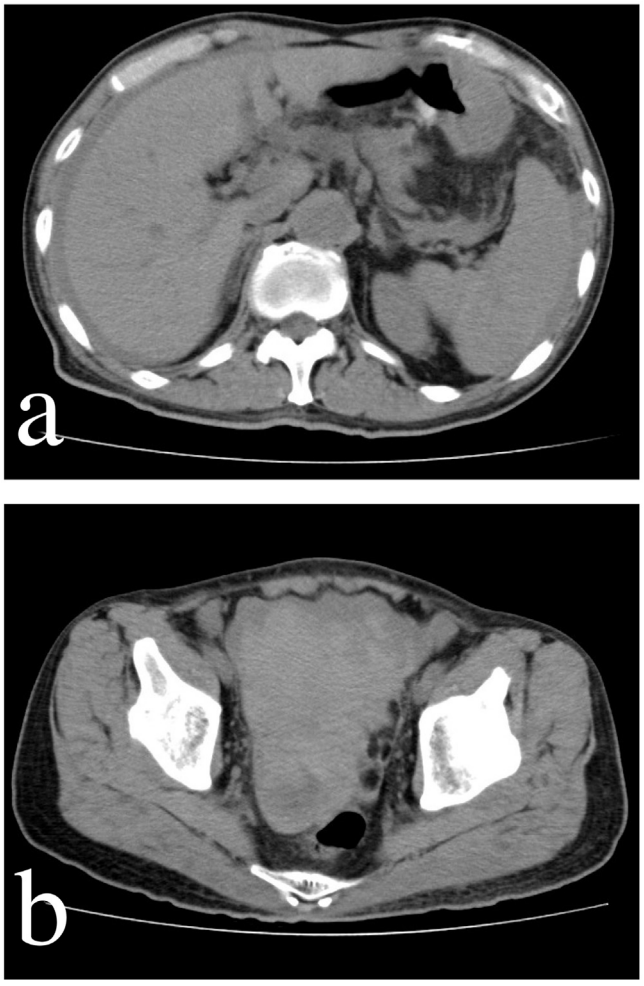

Fig. 1. (a), (b) Abdominal computed tomography showing bilateral subphrenic fluid without free air (a) and high concentrations of fluid in the pelvis, which is suggestive of hemoperitoneum (b).

37.0 °C. Physical examination showed slight abdominal distention and peritoneal irritation in the lower abdomen. The patient was a non-smoker and social drinker, and he had a past medical history of polycythemia vera and asthma. Laboratory data showed an increased white blood cell count of 24,900/μL, with 89% neutrophils, and a slightly increased C-reactive protein concentration of 1.9 mg/dL. Elevated blood urea nitrogen level of 36.2 mg/dL and creatinine level of 2.5 mg/dL were observed in addition to microcytic hypochromic anemia (hemoglobin, 10.0 g/dL).

Abdominal computed tomography (CT) revealed bilateral subphrenic fluid without free air and high concentrations of fluid in the pelvis, which was suggestive of hemoperitoneum (Fig. 1a and b). Urgent surgery was performed, although a definitive diagnosis was not made preoperatively. Laparoscopic exploration revealed hemorrhagic ascites in the entire abdominal cavity (Fig. 2). Major hemorrhages were suspected; therefore, laparoscopic surgery was converted to open abdominal surgery. Approximately 1500 ml of blood in the abdominal cavity was subsequently removed. A small, ruptured mass with a massive hematoma was found in the middle of the small intestine (Fig. 3a). Partial resection of the small intestine, including the mass, was performed, and functional end-to-end anastomosis of the small intestine was performed.

The resected tumor was 2 cm in size. The tumor grew exophytically, and the mucosal side of the resected small intestine was clear (Fig. 3b). Hematoxylin–eosin staining revealed a bundle-like growth of the spindle-shaped tumor cells with acidophilic

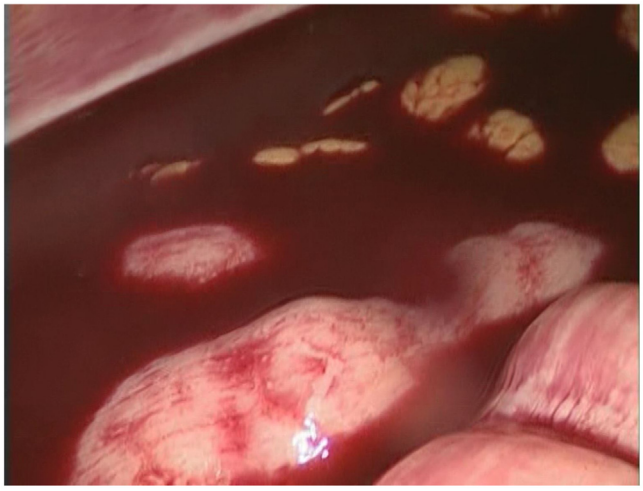

Fig. 2. Laparoscopic exploration revealing hemorrhagic ascites in the entire abdominal cavity.

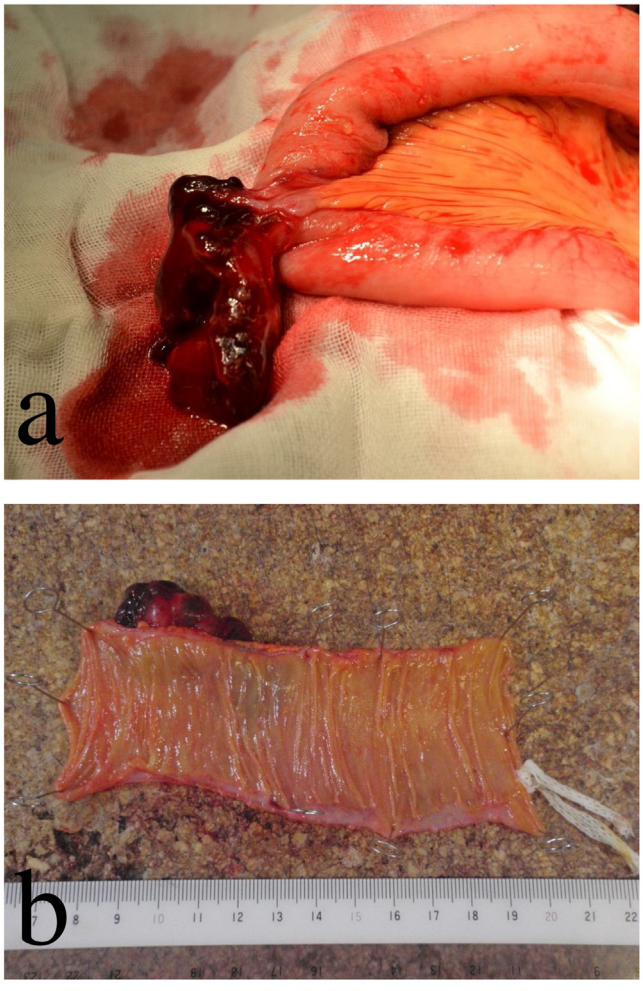

Fig. 3. (a) A small ruptured mass is observed in the middle of the small intestine. In the figure, a massive hematoma attached to the mass is already removed. (b) The tumor grows exophytically, and the mucosal side of the resected small intestine is clear.