

Gastrointestinal stromal tumour as a cause of hematemesis

Colin P. White, MD;* Jerry S. McGrath, MD†

Gastrointestinal stromal tumours (GISTs) are mesenchymal neoplasms arising from the wall of the hollow viscera of the gastrointestinal tract.¹ These smooth-muscle tumours are formally referred to as leiomyoma, leiomyoblastoma or epithelioid leiomyosarcoma.² Uncommon tumours, they usually present in the fifth to seventh decades of life.²

Case report

A 59-year-old man presented to a tertiary care hospital. He reported having 3–4 episodes of vomiting bright red blood. Besides the frank hematemesis, he also complained of general malaise, fatigue, mild abdominal pain and nausea. There was no history of melena, hematochezia or coffee grounds emesis. He was em-

ployed as a fisherman on an offshore vessel and had experienced a single episode of syncope while at sea.

His medical history included hypertension, diabetes mellitus and hyperlipidemia. The surgical history included an abdominal hernia repair. The patient was taking several medications: amlodipine 10 mg orally once daily, metoprolol 50 mg orally twice daily, captopril 50 mg orally twice daily, metformin 500 mg orally once daily, enteric coated acetylsalicylic acid 75 mg orally once daily and simvastatin 10 mg orally once daily. He had no history of alcohol abuse, nor did he smoke.

On examination, the patient appeared pale. He was obese. His body temperature was 36°C, respiratory rate 18/min, heart rate 110 beats/min, and blood

pressure 160/90 mm Hg. Findings on cardiopulmonary examination were normal. His abdomen was soft and not tender. There were no signs of chronic liver disease, but a stool specimen was positive for occult blood.

Initial biochemical tests revealed a leukocyte count of $13.9 \times 10^9/L$, a hemoglobin level of 119 (normal 140–180) g/L, a mean corpuscular volume of 84.8 fL and a platelet count of $244 \times 10^9/L$. Blood urea nitrogen was elevated at 14.5 mmol/L, consistent with a gastrointestinal bleed. Immediate treatment consisted of fluid resuscitation with normal saline and pantoprazole 80 mg intravenously, followed by infusion at a rate of 8 mg/h.

After stabilization, an esophagogastroduodenoscopy was planned. During this procedure, a submucosal mass on the

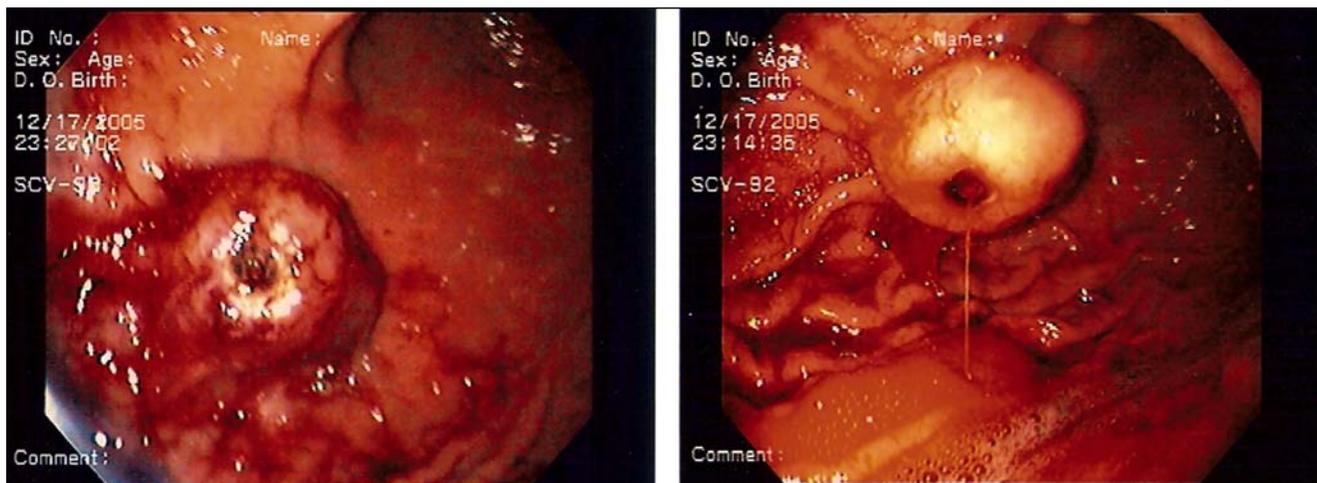


FIG. 1. Ulcer on the surface of the submucosal mass, which was located on the greater curvature of the stomach (left). Blood is seen actively spurting from the GIST (right).

From the *Faculty of Medicine and the †Division of Gastroenterology, Department of Medicine, Memorial University of Newfoundland, St. John's, NL

Accepted for publication July 25, 2007

Correspondence to: Dr. J.S. McGrath, Division of Gastroenterology, Department of Medicine, 300 Prince Phillip Dr., St. John's, NL A1B 3V6; fax 709 777-7054; jmcgrath@mun.ca

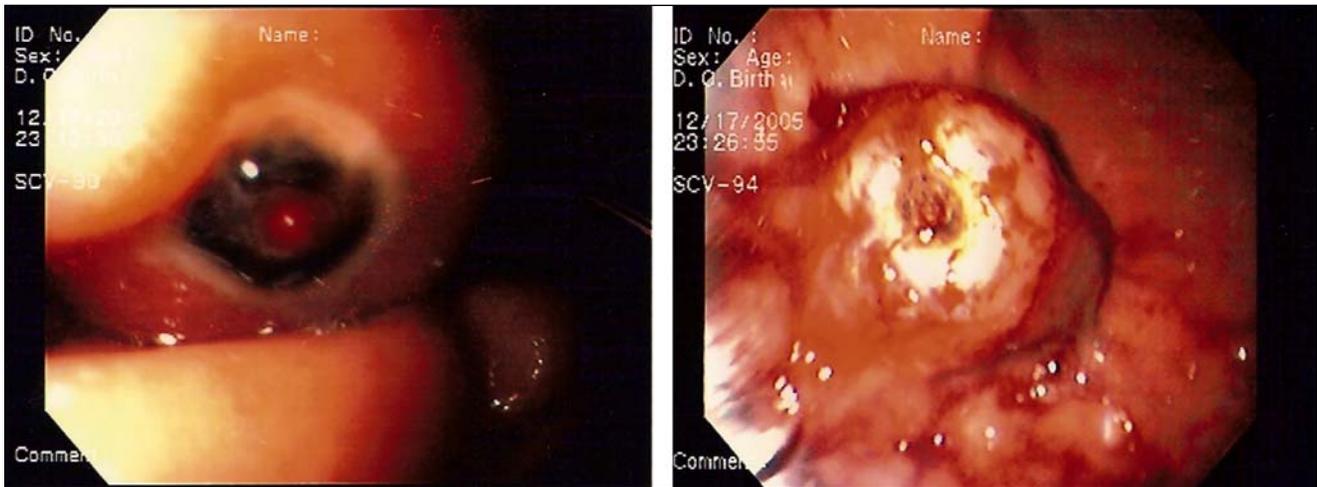


FIG. 2. Visible vessel on the surface of the submucosal mass after the injection of epinephrine (left). Hemostasis is achieved after the injection of epinephrine and cautery with the heat probe (right).

greater curvature was visualized. An actively bleeding vessel having an ulcerous base was seen at the centre of the mass (Fig. 1). The vessel was injected with 22 mL of 1:10 000 epinephrine and cauterized with the heat probe (Fig. 2). Hemostasis was achieved endoscopically, but the patient was referred to general surgery because a mass lesion was associated with a bleeding ulcer.

At laparotomy, performed under general anesthesia, the surgeon identified an obvious lesion on the greater curvature of the stomach. A gastric wedge resection of this mass was performed. The mass was found to penetrate through the serosa. The surgical procedure was completed without complications, and the patient tolerated the procedure well.

Pathological examination of the resected specimen showed that the mass was a GIST. The mucosal surface showed an ulcer measuring 1.1 cm that was the cause of the hematemesis and the acute presentation. The patient made an uncomplicated recovery and was discharged from hospital on the 10th postoperative day.

Discussion

Gastrointestinal stromal tumours are rare,

accounting for about 0.1%–3% of all gastrointestinal malignant tumours in reported series.¹ Despite this low rate, GISTs are the most common mesenchymal tumours of the gastrointestinal tract.³ They are found primarily in the stomach (60%–70%) and small intestine (30%) but may also occur in the colon, rectum and esophagus.⁴

Previous retrospective analysis of GISTs concluded that the most common clinical presentation for a GIST was a gastrointestinal hemorrhage; this was the case in 86% of patients. The second highest clinical sign was anemia, found in 80%.¹ Another review of surgical emergencies showed similar results: every GIST in the study presented with gastrointestinal bleeding.⁵ Stromal tumours were the second most common tumour cause of surgical emergencies, and gastrointestinal bleeding (8/34 cases) was the third most common clinical presentation of gastrointestinal emergencies, preceded by obstruction (15/34) and perforation (11/34).⁵

Surgery remains the principal treatment for resectable nonmetastatic GISTs. They are resistant to conventional chemotherapy and radiotherapy. Unresectable GISTs were generally considered to be untreatable before the advent of molecular targeted therapy with imatinib mesylate.⁴ The

Canadian Advisory Committee on GIST states that expertise in surgical oncology, medical oncology, radiology, pathology and support services should be available to any patient with a GIST.⁴

Competing interests: None declared.

References

1. Kim CJ, Day S, Yeh KA. Gastrointestinal stromal tumors: analysis of clinical and pathologic factors. *Am Surg* 2001;67:135-7.
2. Towu E, Stanton M. Gastrointestinal stromal tumour presenting with severe bleeding: a review of the molecular biology. *Pediatr Surg Int* 2006;22:462-4. Published online 2006 Feb 4.
3. Blackstein ME, Blay JY, Corless C, et al; Canadian Advisory Committee on GIST. Gastrointestinal stromal tumours: consensus statement on diagnosis and treatment. *Can J Gastroenterol* 2006;20:157-63.
4. Hasegawa T, Matsuno Y, Shimoda T, et al. Gastrointestinal stromal tumor: consistent CD117 immunostaining for diagnosis, and prognostic classification based on tumor size and MIB-1 grade. *Hum Pathol* 2002;33:669-76.
5. Catena F, Ansaloni L, Gazzotti F, et al. Small bowel tumours in emergency surgery: specificity of clinical presentation. *A NZ J Surg* 2005;75:997-9.