Not Once But Twice: Spontaneous Intraperitoneal Hemorrhage Leading to Diagnosis of Small Bowel GIST

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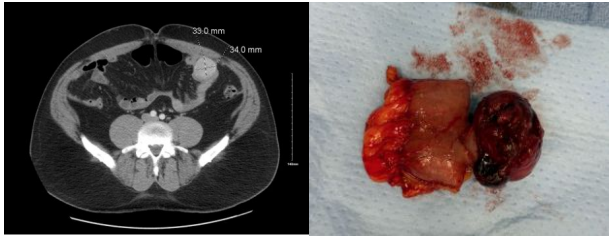
Background

Gastrointestinal stromal tumors (GISTs) are a rare group of mesenchymal neoplasms composed of smooth muscle elements, and can range from small, asymptomatic benign lesions to highly malignant sarcomas. GISTs can arise anywhere along the gastrointestinal tract or adjacent structures, most commonly in the stomach (70%), followed by the small intestine (20%–30%), colon / rectum (10%), esophagus (5%), and less commonly in the omentum, mesentery, and appendix (5%). While often asymptomatic and discovered incidentally, GISTs may rarely rupture spontaneously and present with acute intraperitoneal hemorrhage. We report two such cases where intraperitoneal hemorrhage led to the diagnosis of small bowel GIST.



Left: Case 1 CT; Right Case 1 gross specimen

Cases

Case 1: A 50-year-old male with a history of well-controlled ulcerative colitis presented with severe mid-abdominal pain. His physical exam revealed left-sided tenderness. Imaging showed a 3.4 cm hyperdense lesion in the small bowel extending to its mesentery with hemoperitoneum. Diagnostic laparoscopy revealed an actively bleeding small bowel mass. Resection was performed. Pathology confirmed a low-grade GIST; cytology of peritoneal fluid sample was negative for malignancy. The patient had an uneventful recovery and was discharged on postoperative day three.

Case 2: A 61-year-old male with no significant history presented with one day of abdominal pain. Imaging revealed an 11 x 6 cm heterogeneous mesenteric mass and hemoperitoneum. MRI suggested sarcoma or neoplastic lesion with superimposed hemorrhage. The patient underwent exploratory laparotomy and was found to have two liters of hemoperitoneum mixed with tumor fragments. A mass arising from the mesentery of the ileum was resected. No mesenteric lymphadenopathy was seen. Cytoreduction and peritoneal lavage were performed. Pathology confirmed low-grade GIST, and peritoneal cytology was positive for malignancy. Postoperative recovery was uneventful, and he was discharged on postoperative day five.

Discussion

Among the many etiologies of spontaneous hemoperitoneum, rupture of a GIST is incredibly rare with only 30 previous cases reported in the literature. In all reported cases, treatment consisted of complete resection with en bloc removal of adjacent involved organs. Although some guidelines recommend adjuvant imatinib following spontaneous tumor rupture regardless of size, location, or mitotic index, these recommendations remain poorly defined due to the rarity of this presentation. Among reported cases, only one explicitly described omission of adjuvant imatinib therapy, while eight did not specify adjuvant treatment status. Following multidisciplinary tumor board discussion, adjuvant imatinib was deferred in both patients presented here due to the low grade nature of the tumor,, with management consisting of close radiographic surveillance using serial CT imaging. While uncommon, these cases underscore the importance of including ruptured GIST in the differential diagnosis for patients presenting with spontaneous hemoperitoneum.

Right: Case 2 MRI