

Primary Presentation of Intraperitoneal Bleeding From Multifocal Gastrointestinal Tumors (GISTs)

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Background

Gastrointestinal Stromal Tumors (GISTs) are rare tumors of the gastrointestinal tract suspected to arise from the interstitial cells of Cajal within the enteric nervous system (ENS). Studies have suggested an incidence of 10-15 cases per million per year. GISTs are asymptomatic and sometimes discovered incidentally during endoscopy or on cross-sectional imaging done for another purpose but some of them are associated with abdominal pain, abdominal mass, and intraluminal bleeding. However, rarely coming as intraperitoneal bleeding like our case.

Methods & Procedures

Our patient is a 66-year-old African American female patient who presented to the Emergency room with generalized severe abdominal pain and drop in hemoglobin and hematocrit, 8.6g/dl and 26.5, from a baseline of 11.7g/dl and 37.4 respectively. Abdominal and pelvic CT with contrast scan revealed fluid accumulation by the stomach, mesenteric root and pelvis, as well as a large polypoid mass on the anterior stomach wall, and thickening of the cardia, fundus, and body along the lesser curvature of the stomach. The patient underwent diagnostic laparoscopy and evacuation of a large intraperitoneal hematoma, found to have two actively bleeding masses one of the lesser curvature and one on the antrum. Frozen section confirmed GIST pathology, both tumors were excised using wedge resection, eliminating the need for radical surgery.

Pathology

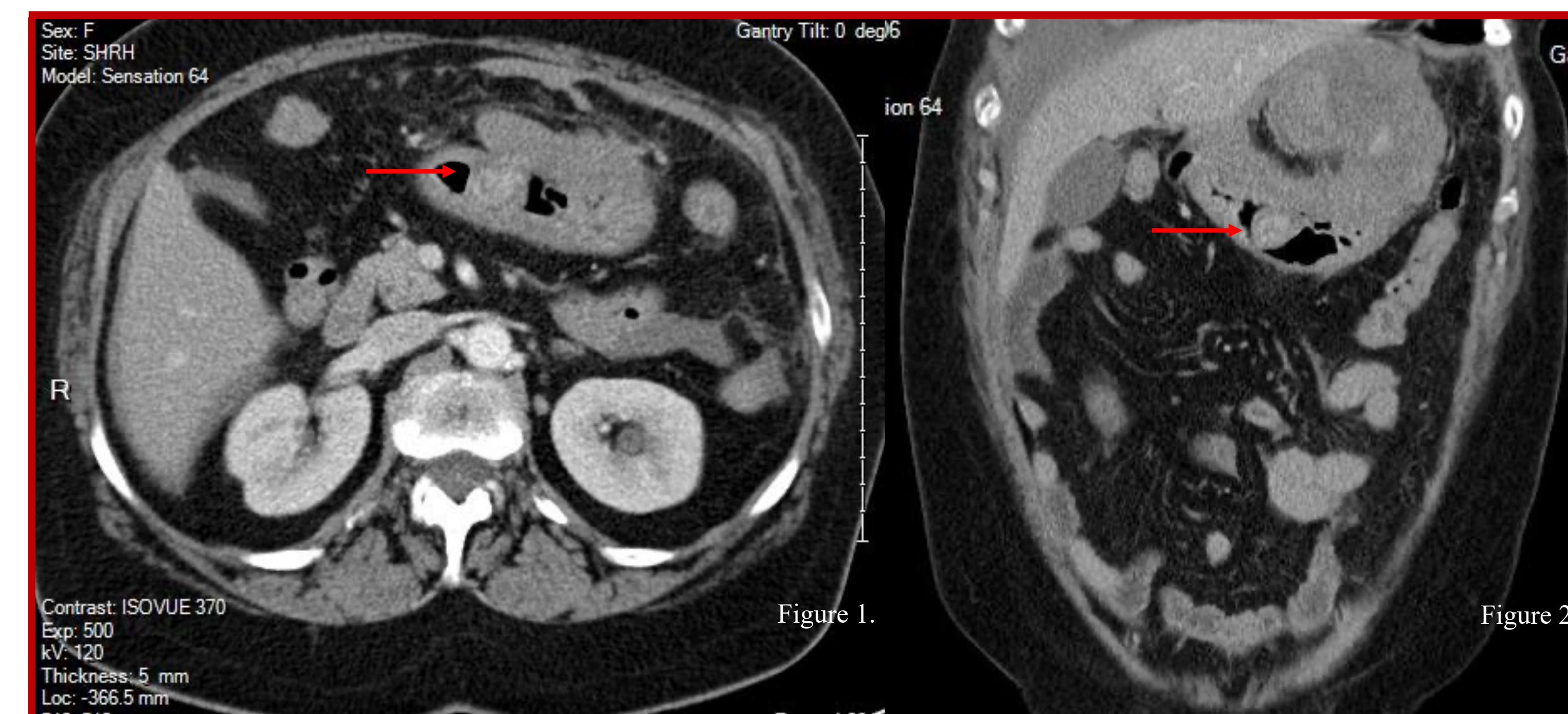
Pathology confirmed both samples were mixed cell GISTs absent of necrosis, and mitotic rate of <5/5mm², patient went home post-operative day three. Both samples were (+) KIT (CD117) and DOG-1.

Presentation

A 66-year-old African American female to our Emergency Department with severe abdominal pain for the last 5 days. Medical history is significant for chronic gastritis, and atrial fibrillation for which she takes 5mg of warfarin once daily. Prior to arriving the patient took unidentified laxatives that failed to resolve pain. The patient admits to nausea and emesis, flatus without defecation over the last 48 hours, and no change in color of urine.

Vital signs revealed mild tachycardia but otherwise stable blood pressure. Patient was peritonitic on physical exam.

A decision was made to check INR which was supratherapeutic at 4.4, and H&H were 8.6g/dl & 26.5 respectively. Abdominal & Pelvic CT with contrast revealed an abnormal stomach with thickening of the fundus, cardia and lesser curvature. There was amorphous intramural enhancement, which suggested potential for an active bleed. Note the polypoid enhanced mass near the pylorus (figures 1, 2). Non-enhancing free fluid is noted around the stomach, liver, spleen and mesentery, with what appeared to be a large collection in the pelvis. Nasogastric lavage is negative of intragastric bleed.



Impression of patient at present is that the free fluid in the pelvis is concerning for hemoperitoneum.

Patient is admitted to ICU to correct anticoagulation and prepare for surgery. After a blood transfusion the patient was more stable to undergo the diagnostic laparoscopy with possible exploratory laparotomy. Patient was taken to the operating room urgently.

Operation and findings

Diagnostic laparoscopy was done revealing a large amount of intraperitoneal blood in the left upper quadrant. Upon further inspection a large clot and hematoma were identified around the anterior stomach, left side of the liver and spleen which was suctioned out. The left lobe of the liver retracted using Nathenson liver retractor which exposed a large and actively bleeding fungating mass at the lesser curvature of the stomach as well as a 2.0 x 2.0cm mass at the anterior antrum. The lesser sac was entered through hepatogastric ligament, taking care not to transect the left hepatic or left gastric artery and vein to mobilize the lesser curvature. A small incisional biopsy was taken from the mass using endoshears, the frozen section was consistent with GIST, which eliminated the need for radical procedure. Next the nasogastric tube was removed, ensuring the stomach was empty then a wedge resection of the lesser curvature took place with an Endo-GIA 60 green load. Care was taken not to narrow the stomach, and the bleeding tumor was removed without complication. The specimen was removed using EndoCatch bag. Pathology revealed spindle cell GIST. Next, attention turned to the antrum, which was concerning for another GIST. Upper endoscopy was done and advanced to the first part of the duodenum, revealing no narrowing. This smaller antral mass was transected with an Endo-GIA 60 blue load without complication. Leak test of this site was done using endoscopy, and the specimen was retrieved without complication. Inspection of the esophagus revealed no injury. Two 19 Blake drains were placed and exited via incision and trocar site. Estimated blood loss was over 700ml, patient received 2 units of packed red blood cells. No complications during the operation, and the patient tolerated the procedure well afterward.

Hospital course

Patient started on diet POD#1, and diet was advanced slowly, anticoagulation restarted POD#2, she started to have bowel functions POD#3, she was discharged home POD#4, drains were removed before discharge. Patient followed as outpatient, she is completely recovered and without need for adjuvant treatment.

Conclusion

GISTs are rare ENS tumors that rarely present as multifocal primary tumors, especially in the context of hemoperitoneum. We recommend focusing treatment of the intraperitoneal hemorrhage, resecting present hemorrhagic tumors to decrease the risk of recurrence, as well as a call to study what may prime multifocal primary GIST formation.

Acknowledgements

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