

Gastrosplenic Fistula Secondary to Simultaneous Gastric and Splenic Diffuse Large B Cell Lymphoma

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Abstract

Gastrosplenic fistula is a rare complication mainly arising secondary to the involvement of the stomach or spleen by lymphoma. Delayed diagnosis is associated with high morbidity and mortality. We present a case of gastrosplenic fistula secondary to gastric and splenic involvement by diffuse large B cell lymphoma with relevant imaging findings. The patient has successfully been treated with surgical resection.

Case Report:

A middle-aged patient presented to the emergency department after a syncopal episode upon standing and subsequent hematemesis. He had a history of drenching night sweats, fever, fatigue, and intermittent abdominal pain for a month and weight loss of 25 pounds over two months. A CT angiogram of the abdomen and pelvis demonstrated gastric body and fundus wall thickening, splenic enlargement, loss of fat plane between stomach and spleen, and possible splenic artery involvement by the mass. The stomach was distended with hyperdense material, most likely blood. Areas of hypoattenuation were visualized in the spleen (Fig 1A). The patient underwent splenic artery embolization on the same day to control bleeding. Subsequent CT of the abdomen demonstrated extension of oral contrast beyond the thickened gastric lumen to the spleen, suggestive of a gastrosplenic fistula (Fig 1B). Subsequent 18F-FDG PET/CT demonstrated intensely FDG avid masslike wall thickening of the proximal stomach, concerning for gastric involvement of disease. This was contiguous with an enlarged spleen with loss of fat plane. An enlarged spleen measured 18.8 cm in craniocaudal diameter displayed

heterogeneous intense FDG uptake, large photopenic defects, and collections of fluid and locules of air. These findings suggested splenic involvement of disease, gastrosplenic fistulation, possible splenic abscess or necrosis, and sequela of embolization. There was FDG avid multistation adenopathy above and below diaphragm as well as diffuse intense FDG uptake within bone marrow. However, bone marrow biopsy results were not available. Cervical lymph node sampling revealed diffuse large B cell lymphoma (DLBCL) of germinal center and double expressor phenotype, and a Ki-67 proliferation index of approximately 90%. Because of presumed risk of infection and hemorrhage, surgical management included splenectomy and en bloc partial gastrectomy and distal pancreatectomy. A fistula was visualized between the gastric fundus and spleen. Surgical pathology was positive for diffuse large B cell lymphoma of similar histology to the cervical lymph node, involving stomach, spleen, and a subset of sampled lymph nodes.

Discussion:

Gastrosplenic fistula (GSF) is a rare but potentially fatal complication in malignant and nonmalignant conditions. Some cases of GSF manifest during treatment for or as initial presentation of lymphoma. The most common reported lymphoma subtype is DLBCL in approximately 85% of cases (1,2). GSF can also occur with gastric adenocarcinoma, gastric sleeve surgery, splenic abscess, gastric ulcer, Crohn's disease, and sickle cell disease (3,4). Patients with lymphoma may present with constitutional symptoms including weight loss, abdominal pain, fever, fatigue, and abdominal mass (1). GSF can occur in the setting of lymphomatous involvement of the stomach and spleen and splenic infarction following

treatment. Patients with GSF may also present initially with hematemesis, melena, or syncope (1). A patient with a toxic presentation may indicate the development of splenic abscess. The presence of air bubbles within the spleen on diagnostic imaging might be secondary to splenic abscess or GSF, and differentiation of these conditions has implication in treatment planning. Demonstration of a fistulous tract or leakage of oral contrast beyond the gastric wall margin to the spleen confirms the diagnosis (5). It is of paramount importance that imagers be aware of this entity to help guide clinical management towards timely lifesaving measures.

A primary management for GSF is surgical with splenectomy and resection of adjacent diseased stomach (1,2). In cases such as this patient with GI bleeding, splenic artery embolization might be used as a bridge to surgery (6). Non operative management of GSF has been described (7), however this can be associated with increased risk of bleeding, perforation, infection, and mortality (8).

Conclusion:

In summary, gastrosplenic fistula is a rare complication of lymphoma. Awareness of this entity can result in earlier diagnosis and decreased patient morbidity and mortality.

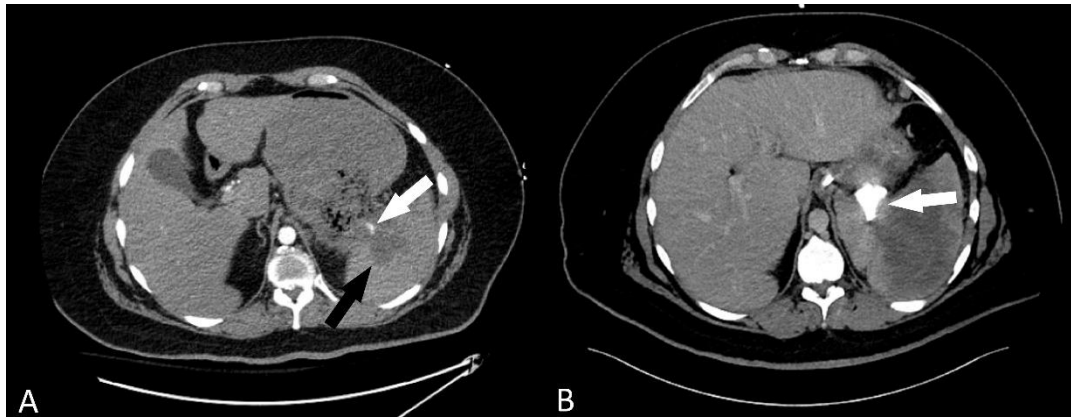


Fig 1: Axial image, abdominal CT angiogram (A) demonstrates a small segment of distal splenic artery (white arrow) approaching necrotic center of the spleen (black arrow).

Axial image, abdominal CT with oral and IV contrast (B) demonstrates extension of oral contrast to the spleen (white arrow).

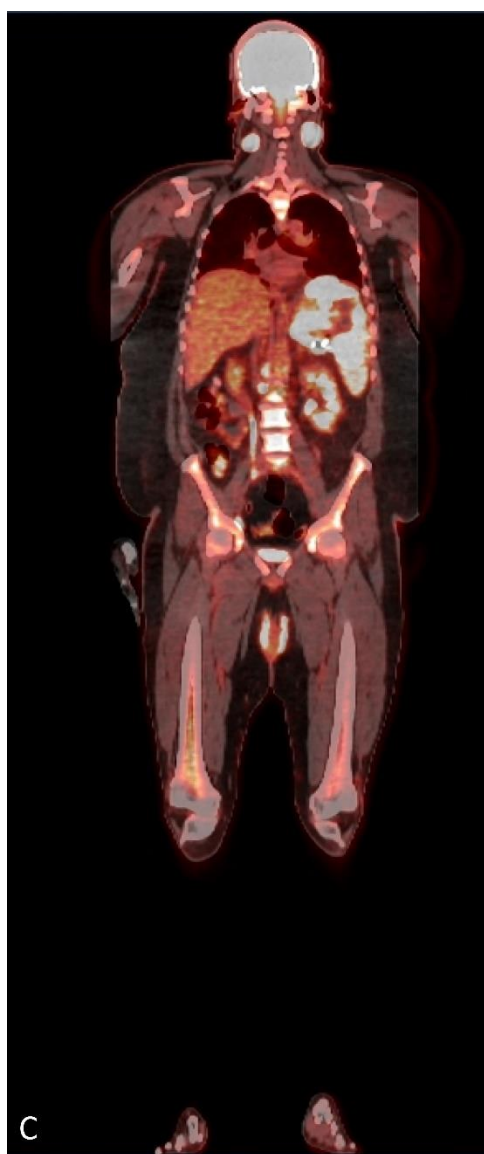
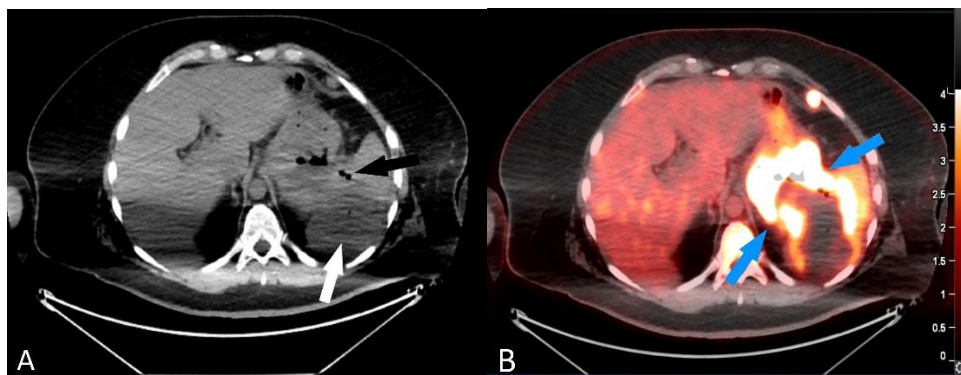


Figure 2: Axial CT (A) and fused PET/CT images at the same level (B). Coronal fused PET/CT image (C) and PET MIP (Maximum Intensity Projection) (D) demonstrate an intensely FDG mass (blue arrows) involving stomach and spleen with areas of central splenic necrosis (white arrow) and small locules of air (black arrow). Coronal PET/CT and PET MIP images demonstrate FDG avid multistation adenopathy above and below the diaphragm and diffuse intense bone marrow uptake.

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