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GI IMAGE

Primary Gastric Synovial Sarcoma Mimicking a Gastrointestinal Stromal Tumor (GIST)

Gastric Synovial Sarcoma

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Clinical Case

A 57-year-old woman with a history of chronic gastroesophageal reflux disease (GERD) presented to her primary care physician with worsening epigastric pain and an unintentional 22-lb weight-loss. She had previously undergone multiple esophagogastroduodenoscopies (EGDs) that demonstrated chronic inflammation of the gastroesophageal (GE) junction without metaplasia or dysplasia and multiple fundic gastric polyps. *Helicobacter pylori* was never detected. She had a history of diabetes mellitus and papillary thyroid cancer treated with surgery and radioactive iodine ablation. She denied smoking and endorsed occasional alcohol use. On physical exam, she demonstrated epigastric tenderness to palpation. Laboratory studies were unremarkable.

Her gastroenterologist performed an esophagogastroduodenoscopy (EGD), which demonstrated an ulcerating gastric body mass along the lesser curvature of the stomach (Fig. 1). Biopsies revealed a monomorphic spindle cell neoplasm. Immunohistochemical (IHC) staining was negative for CD117 and positive for TLE-1. Reverse transcriptase polymerase chain reaction (RT-PCR) showed an SS18/SSX2 fusion transcript, t(X;18)(p11.2;q11.2), consistent with a synovial sarcoma.

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The patient was referred to a surgical oncologist. Computed tomography (CT) of the chest, abdomen, and pelvis showed no evidence of metastatic disease. The gastric mass was not well-delineated on imaging. She underwent a laparoscopic wedge resection to remove the mass using an Endo-GIA stapler with a seam guard (Fig. 2). The final pathology confirmed a 1.8-cm focally ulcerated, submucosal gastric synovial sarcoma with negative margins and no vascular invasion. Postoperatively, her symptoms improved. She will be followed with serial cross-sectional imaging for surveillance moving forward.

Discussion

The ulcerating gastric mass initially visualized during EGD resembled a gastrointestinal stromal tumor (GIST), and the spindle cell morphology seen on microscopic analysis was consistent. However, IHC staining for CD117 (c-kit) was negative, and positive staining for TLE-1 raised concerns for a synovial sarcoma. The RT-PCR testing for the characteristic t(X;18) translocation ultimately confirmed the diagnosis of primary gastric synovial sarcoma.

Synovial sarcomas can occur in many different locations throughout the body and are rarely found within the gastrointestinal tract. Synovial sarcomas of the stomach are extremely rare; very few cases have been described in the English literature.[1,2] Diagnosing synovial sarcoma can be difficult, especially when it is encountered in atypical locations. Histologically, synovial sarcomas can exhibit spindle cell; epithelioid; or small, round cell morphology. IHC staining can further narrow the diagnosis, with synovial sarcomas often staining positive for INI1, epithelial membrane antigen (EMA), cytokeratins EA1 and EA3, TLE-1, and BCL-2. They are typically negative for CD34 and CD117. However,

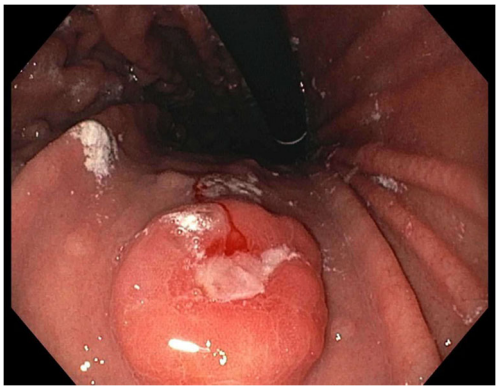

Fig. 1 Endoscopic view of the ulcerating gastric mass along the lesser curvature of the stomach

the histologic morphology and IHC staining patterns for synovial sarcomas are not unique. Molecular genetic testing for the characteristic t(X;18) chromosomal translocation is usually necessary to confirm the diagnosis. Multiple factors have been shown to affect patient prognosis for synovial sarcoma including tumor location, tumor size, histologic grade, the presence of local invasion, and local recurrence.[3] Early diagnosis and treatment are essential in order to optimize patient outcomes.

Author Contributions As per the guidelines of the *International Committee of Medical Journal Editors* (ICMJE)

Griffin Olsen—Contributed to the acquisition, analysis, and interpretation of patient data and the drafting of the manuscript. He approves of the final version to be published. He agrees to be accountable for all aspects of the work in ensuring that questions related to any part of the work are appropriately investigated and resolved.

Eliza W. Beal—Contributed to the acquisition, analysis, and interpretation of patient data and revision of the manuscript for intellectual content. She approves of the final version to be published. She agrees to be accountable for all aspects of the work in ensuring that questions related to any part of the work are appropriately investigated and resolved.

Sheryl Pfeil—Contributed to the acquisition, analysis, and interpretation of patient data and revision of the manuscript for intellectual content. She approves of the final version to be published. She agrees to be accountable for all aspects of the work in ensuring that questions related to any part of the work are appropriately investigated and resolved.

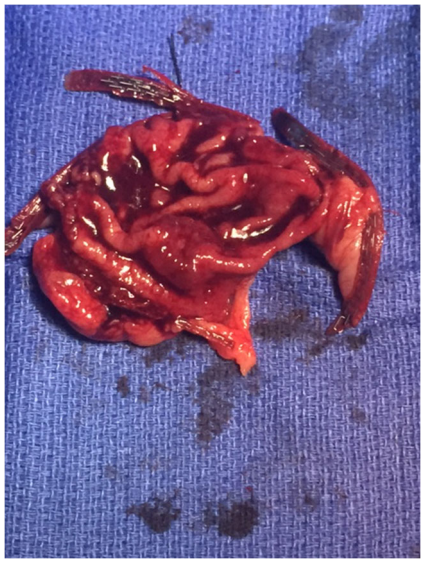

Fig. 2 Intraoperative wedge resection specimen containing gastric synovial sarcoma

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