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Clinical Image

Gastric Leiomyosarcoma: A Common Tumor in an Uncommon Location

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1. Clinical Image

A previously healthy 51-year-old female presented with gradually worsening, 10/10 non-radiating epigastric abdominal pain associated with nausea, bilious vomiting, and weight loss. Computed tomography of the abdomen with intravenous contrast showed a large 10.7cm x 9.5cm exophytic mass in the antrum/body of the stomach (Figure 1A). An upper endoscopic evaluation revealed a large fungating, infiltrative, and ulcerated mass in the gastric body (Figure 1B). Histopathology of the biopsied mass was notable for spindle cells with a fascicular pattern, moderate nuclear atypia, abundant eosinophilic cytoplasm, and numerous mitotic figures. Immunohistochemistry analysis revealed that the tumor was diffusely positive for smooth muscle actin (SMA) (Figure 2A), Desmin (Figure 2B), and Calponin (Figure 2C). Ki-67 stain (Figure 2D) showed a high labeling index of 60% indicating a high-grade leiomyosarcoma. There was a complete lack of reactivity with DOG-1 and CD-117 (c-KIT) which excluded the diagnosis of a gastrointestinal stromal tumor (GIST). No evidence of metastatic disease was noted in staging scans. The patient was started on a neoadjuvant chemotherapy regimen consisting of Doxorubicin, Ifosfamide, and Mesna with a future plan for surgical excision.

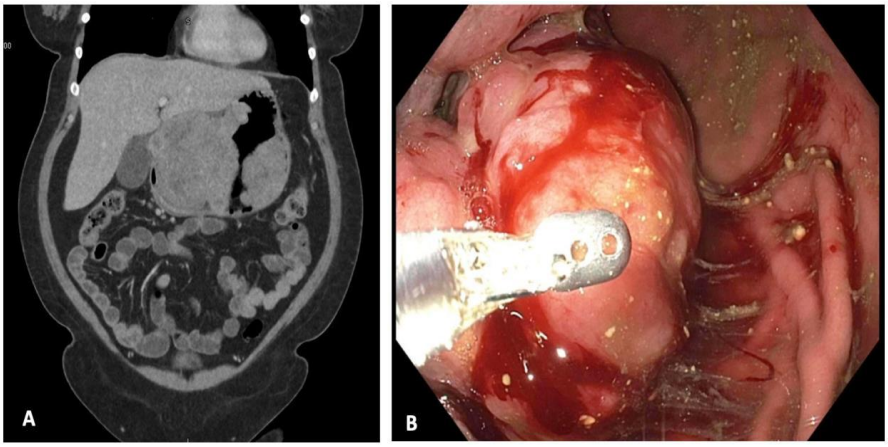

Figure 1

A: Computed Tomography of the abdomen showing the exophytic mass in the antrum/body of the stomach.

B: Upper endoscopy showing large fungating, ulcerative mass in the gastric body.

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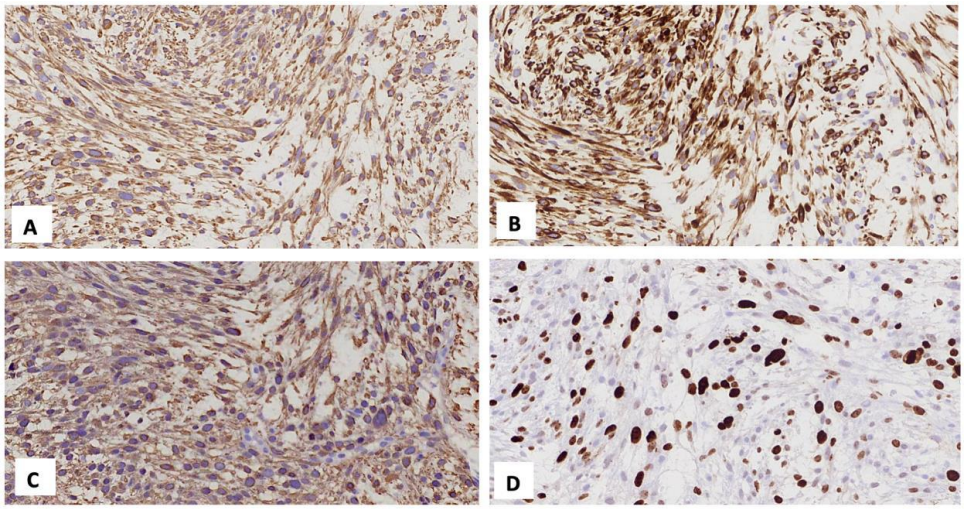

Figure 2
A: Immunohistochemistry stain diffusely positive for smooth muscle actin.
B: Immunohistochemistry stain diffusely positive for Desmin.
C: Immunohistochemistry stain diffusely positive for Calponin.
D: Immunohistochemistry stain diffusely positive for Ki-67 with a high labeling index.

Leiomyosarcoma of the stomach is an extremely rare malignancy that accounts for fewer than 1% of gastric tumors [1]. GIST was misdiagnosed as leiomyomas and leiomyosarcomas up until the early 2000s. An exophytic gastric tumor has broad differentials and diagnosis can be difficult to determine with radiology or histopathology alone [2]. Since the advent of *KIT* immunohistochemistry, primary gastric leiomyosarcoma can be distinguished from GIST due to the presence of CD117 (c-KIT) and DOG-1 in GIST cases and the presence of desmin, SMA, calponin in leiomyosarcomas [3]. Differentiation between GIST and leiomyosarcoma is of great clinical importance as the therapeutic approach is vastly different. GIST usually responds to KIT-directed immunotherapy and is intrinsically resistant to many chemotherapeutic drugs.

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