# Gastric Spindle Cell Leiomyosarcoma is Associated With Chronic *Helicobacter pylori* Infection

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## INTRODUCTION

- Chronic Helicobacter pylori (HP) infection has been shown to be strongly associated with multiple gastroduodenal pathologies
- These include development of gastric malignancies, mostly gastric adenocarcinomas and lymphomas.
- We present a case of primary gastric leiomyosarcoma in a patient with persistent epigastric pain and chronic HP infection with no clearance despite multiple rounds of therapy

## CASE DESCRIPTION

- A 49 year old female presented to clinic with intractable epigastric pain refractory to acid suppression. Initial cardiopulmonary workup then was negative.
- She subsequently had esophagogastroduodenoscopy (EGD) that revealed an esophageal leiomyoma.
- The initial leiomyoma found was resected endoscopically with negative margins.
- She also found to have HP infection based on biopsy for which she received standard triple therapy.
- Notably, there was no further testing to document complete eradication of the patient's initial HP infection.
- She presented 6 years later for epigastric pain again.
- CT abdomen showed a new 2.8 cm hypoattenuating lesion in the lesser curvature of the stomach.

## IMAGES

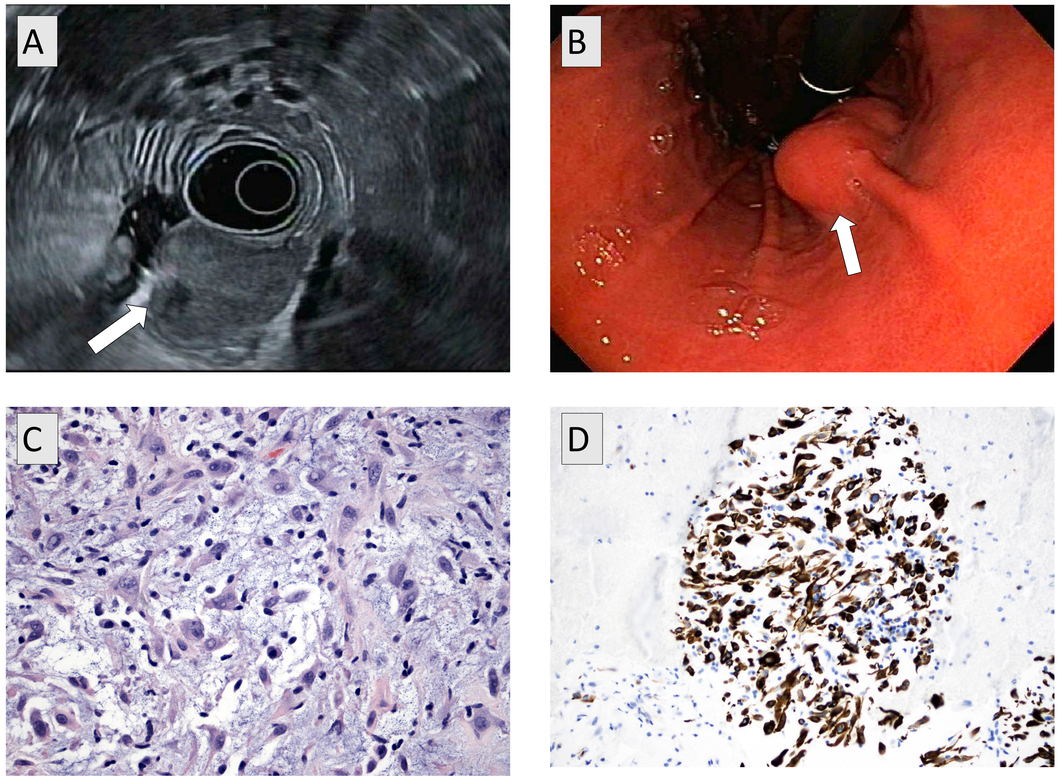


**Figure 1.**
Endoscopic and histologic examination of gastric leiomyosarcoma.
(A) Endoscopic ultrasound visualization demonstrating tumor within lesser curvature of stomach.

(B) Upper endoscopy revealing tumor approximately 4 cm from gastroesophageal junction.

(C) Hematoxylin and eosin (H&E) stain of gastric tumor biopsy demonstrating spindle cell proliferation in a myxoid background with significant nuclear atypia and pleomorphism consistent with myxoid leiomyosarcoma. Magnification x400.

(D) Immunohistochemical staining of gastric lesion biopsy demonstrating strong immunoreactivity to desmin. Not shown are positive stains for smooth muscle actin (SMA) as well as negative stains for Cytokeratin AE1/AE3, Myogenin, MyoD1, DOG-1, CD117, S100, SOX10, CD34, ALK-1 and ER. Positive and negative controls stained appropriately but are not included.

## CASE DESCRIPTION

- She was lost to follow up and returned two years later and underwent repeat EGD and endoscopic ultrasound (EUS) with fine needle aspiration (FNA).
- EGD showed sub-gastric nodule with active HP infection.
- EUS showed a 31.7x23.5 mm hypoechoic homogeneous mass along lesser gastric curvature.
- Imaging revealed no evidence of metastasis and she underwent partial sleeve gastrectomy.
- Cytology showed cellular spindle cell neoplasia with myogenic differentiation concerning for possible leiomyoma or leiomyosarcoma.
- Pathology revealed Grade 1 spindle cell myxoid leiomyosarcoma with negative margins.

## DISCUSSION

- Prior studies demonstrated associations between HP infection and gastric malignancies - typically gastric adenocarcinoma or lymphomas.
- Importantly, this patient never had clearance of HP infection and may have allowed a leiomyosarcoma to develop.
- Clinicians must confirm eradication of HP infection given risk of leiomyosarcoma development in addition to other malignancies HP infections are known to cause.

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