



Case 10816

Gastric GIST mimicking adenocarcinoma

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Section: Abdominal Imaging

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Patient: 52 year(s), female

Authors' Institution

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Clinical History

A 52 yo female with no relevant medical history was admitted to the ER with upper GI bleeding and hemodynamic instability. Esophagogastroduodenoscopy(EGD) showed a polypoid lesion with an adherent clot in the body-antrum transition of the stomach(Figure 1), which was biopsed.

Imaging Findings

A thoracic, abdominal and pelvic CT scan was performed. Pre-contrast images of the abdomen and post contrast images of the thorax, abdomen and pelvis, in the portal phase of enhancement, were obtained (Figures 2 and 3). A 3, 4 cm polypoid lesion with an irregular surface, originating from the anterior gastric incisure, was detected. The lesion was homogeneous on the pre-contrast images. After iodinated IV contrast, it showed a thick, peripheral rim of hyper-attenuation, in continuity and with a similar enhancement compared to the surrounding normal mucosa. No signs of extramural growth, invasion of adjacent structures or distant metastasis were found.

Discussion

Patient presented with a relatively large, endophytic-growing tumor of the stomach with slightly lobulated margins and a thick, irregular rim of hyper-enhancing tissue mimicking a thickened mucosal layer. It was thus considered as likely an adenocarcinoma, for which, given the location and absence of signs of local invasion or metastatic disease on CT, a total gastrectomy would be the oncologic curative surgery of choice. In a critically ill patient though, such as this patient, minimal resection or hemostasis alone are preferred, due to the higher morbidity and mortality of major surgery. Patient was stabilized with aggressive fluid resuscitation making time for histopathologic analysis, which showed a tumor constituted by whirled bundles of fusiform cells with slight anisocariosis, expressing CD117 and CD34 intensely and diffusely, compatible with GIST. An atypical gastric resection was then performed and the diagnosis was later confirmed by histopathologic analysis of the (R0) surgical specimen (Figure 4).

Gastrointestinal stromal tumors(GIST) arise from the interstitial cell of Cajal or its precursor in the myenteric plexus and are the most common non-epithelial tumors of the GI tract, stomach being the most frequent location. Clinical manifestations depend on location but are often nonspecific. CT is considered the imaging modality of choice for the detection, staging, surgical planning and follow-up of patients with GIST. The majority of primary gastric GISTs appear as well-defined, extramural or intramural masses with varying attenuation. Large lesions tend to show inhomogeneous density, with combined intraluminal and extramural growth and a tendency to spread to surrounding structures. They frequently show central areas of necrosis/hemorrhage. Furthermore, the cavities that develop from central necrosis/hemorrhage may communicate with the gastric lumen. Endophytic growing GISTs represent only 18-22% of all cases and tend to be small and hypo enhancing.

The differential diagnosis between gastric submucosal lesions, such as GISTs, and mucosal lesions, such as adenocarcinoma, is very important. CT imaging features such as smooth contour, right or obtuse angles with adjacent wall, intramural or exophytic growth and an overlying normal-thickness mucosal layer favor a submucosal origin (Figure 5). However, exceptions do occur and must be borne in mind before critical patient management decisions are made.

Final Diagnosis

gastric gastrointestinal stromal tumor

Differential Diagnosis List

adenocarcinoma, benign mucosal polyp

Figures

Figure 1 EGD





A gastric polyp, originating from the gastric incisure, with an extensive overlying adherent blood clot was found on EGD.

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Area of Interest: Abdomen;
Imaging Technique: PACS;
Procedure: Endoscopy;
Special Focus: Neoplasia;

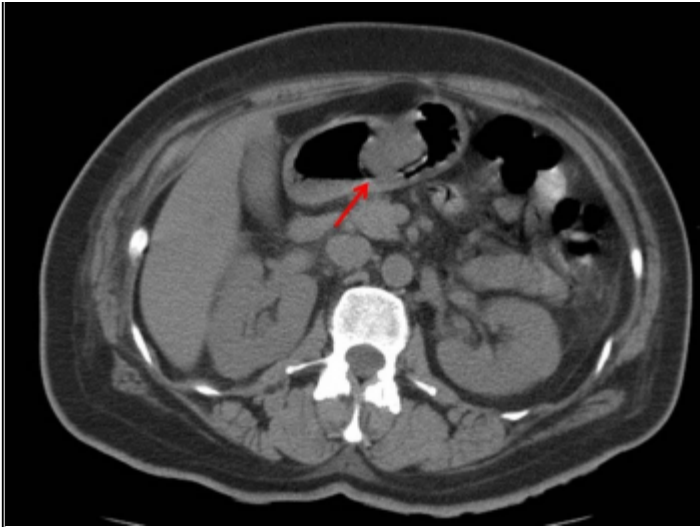
Figure 2 Precontrast



Axial precontrast CT image of the abdomen.

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Area of Interest: Abdomen;
Imaging Technique: CT;
Procedure: Ablation procedures;
Special Focus: Neoplasia;



Axial precontrast CT image of the abdomen. Arrow: 3,5 cm homogeneous, soft tissue attenuation, polypoid lesion with slightly lobulated margins originating from the anterior wall of the gastric incisura.

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Area of Interest: Abdomen;
Imaging Technique: CT;
Procedure: Imaging sequences;
Special Focus: Neoplasia;



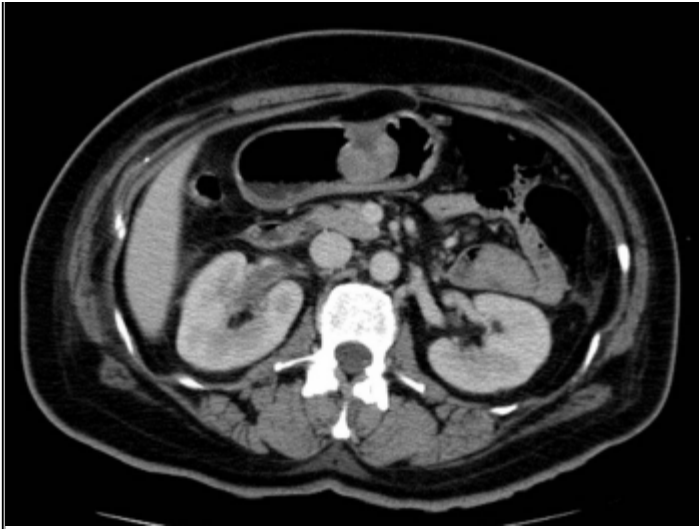
Axial precontrast CT image of the abdomen.

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Area of Interest: Abdomen;
Imaging Technique: CT;
Procedure: Imaging sequences;
Special Focus: Neoplasia;

Figure 3 Postcontrast

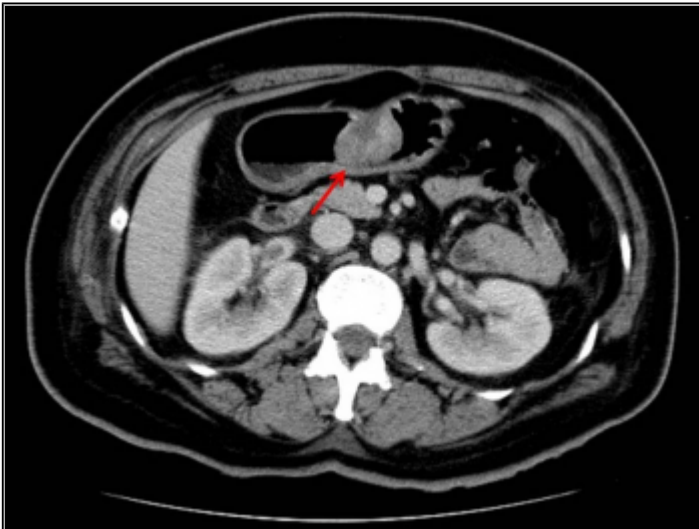




Axial post-contrast CT image of the abdomen, in the portal venous phase of enhancement.

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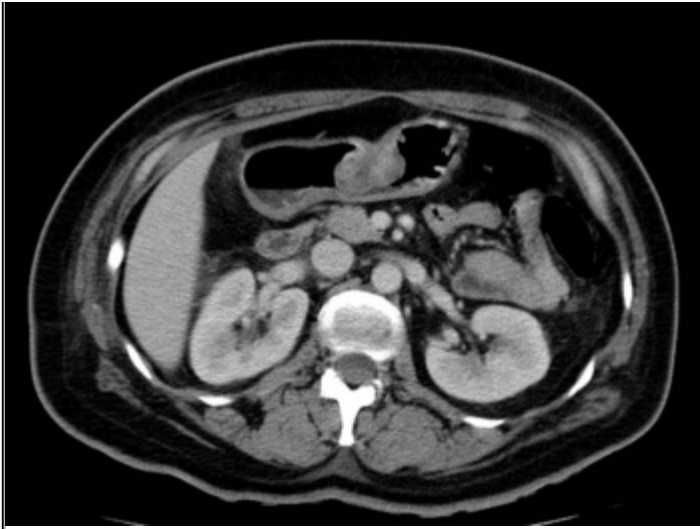
Area of Interest: Abdomen;
Imaging Technique: CT;
Procedure: Imaging sequences;
Special Focus: Neoplasia;



Axial post-contrast CT image of the abdomen, in the portal venous phase of enhancement. Arrow: Lesion showed a perypheral, thick rim of marked enhancement, similar and in continuity with the normal surrounding mucosa.

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Area of Interest: Abdomen;
Imaging Technique: CT;
Procedure: Imaging sequences;
Special Focus: Neoplasia;



Axial post-contrast CT image of the abdomen, in the portal venous phase of enhancement.

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Area of Interest: Abdomen;
Imaging Technique: CT;
Procedure: Imaging sequences;
Special Focus: Neoplasia;

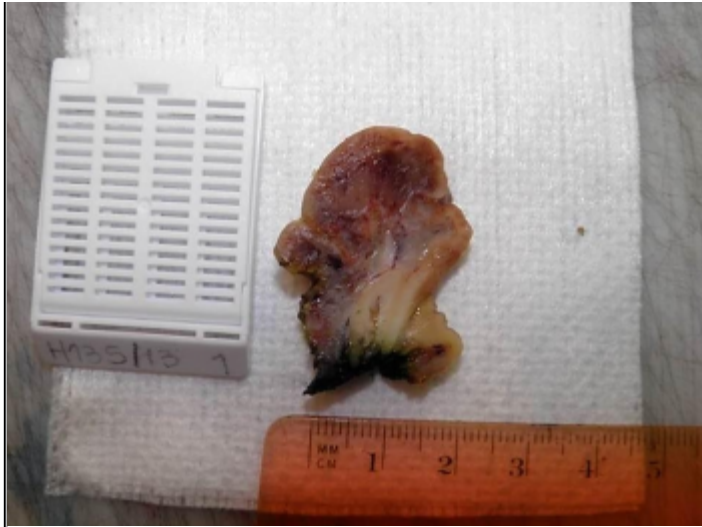
Figure 4 Pathology



Surgical specimen: Polypoid lesion covered by mucosa with small erosions.

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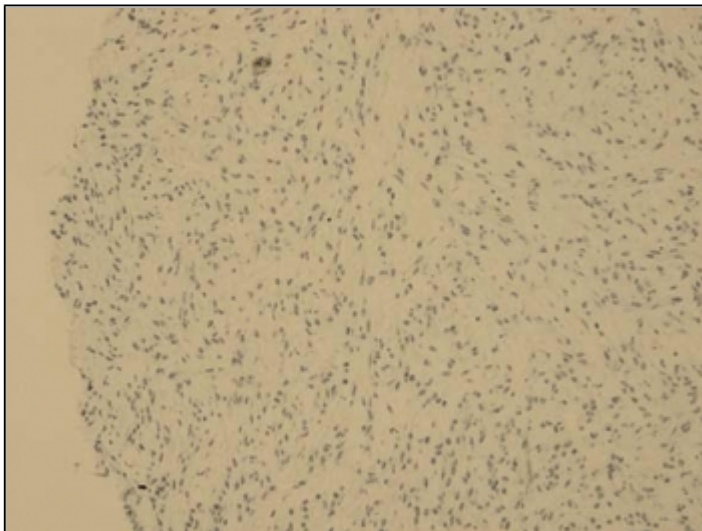
Area of Interest: Abdomen;
Imaging Technique: PACS;
Procedure: Removal;
Special Focus: Neoplasia;



Surgical specimen - cut surface showing an intramural tumor covered by mucosa.

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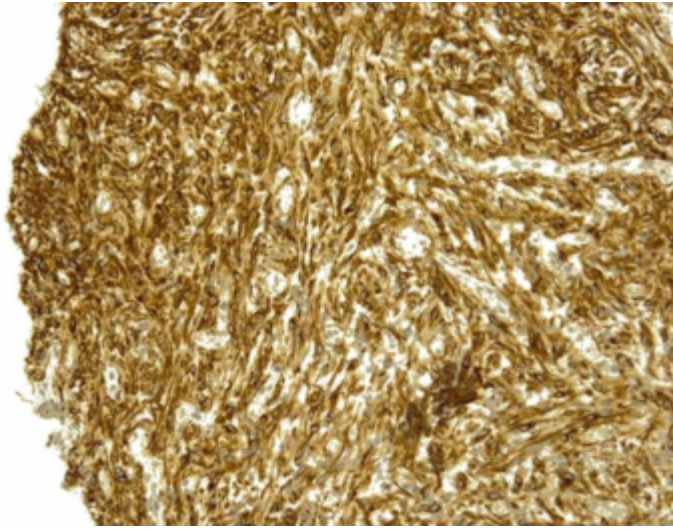
Area of Interest: Abdomen;
Imaging Technique: Experimental;
Procedure: Removal;
Special Focus: Neoplasia;



H&E 100x - tumor constituted by whirled short bundles of fusiform cells with slight anisocariosis.

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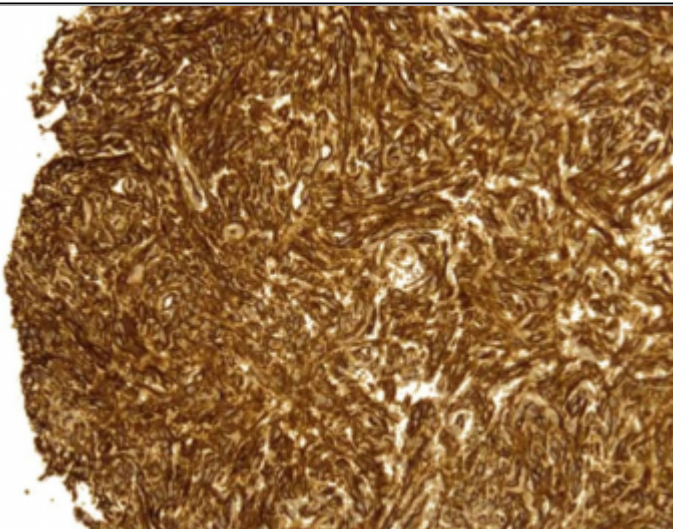
Area of Interest: Abdomen;
Imaging Technique: PACS;
Procedure: Diagnostic procedure;
Special Focus: Neoplasia;



CD117 100x showing diffuse and intense positivity.

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Area of Interest: Abdomen;
Imaging Technique: PACS;
Procedure: Acceptance testing;
Special Focus: Neoplasia;



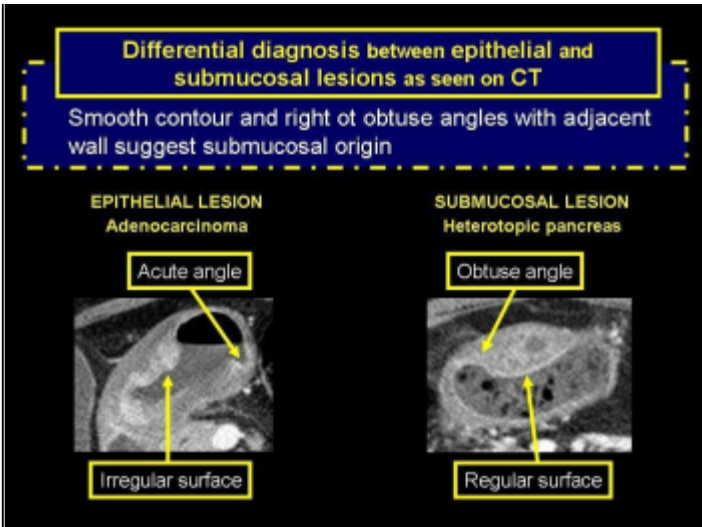
CD34 100x showing diffuse and intense positivity.

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Area of Interest: Abdomen;
Imaging Technique: Experimental;
Procedure: Diagnostic procedure;
Special Focus: Neoplasia;

Figure 5 Differential diagnosis





Differential diagnosis between submucosal and mucosal lesions as seen on CT.

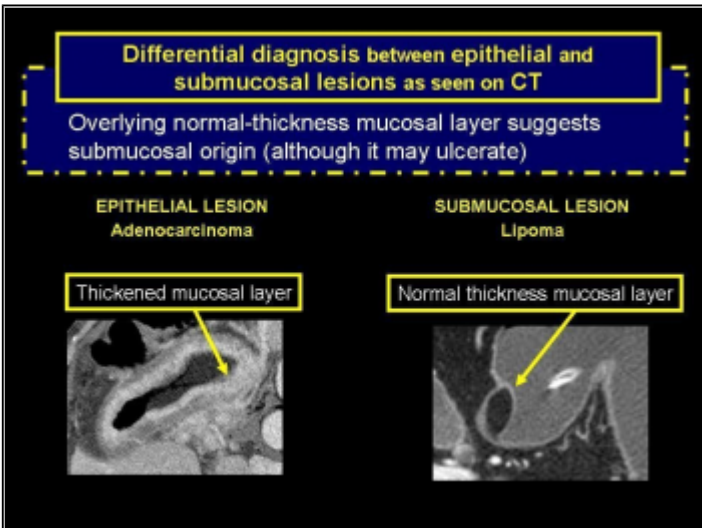
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Area of Interest: Abdomen;

Imaging Technique: CT;

Procedure: Computer Applications-General;

Special Focus: Neoplasia;



Differential diagnosis between submucosal and mucosal lesions as seen on CT.

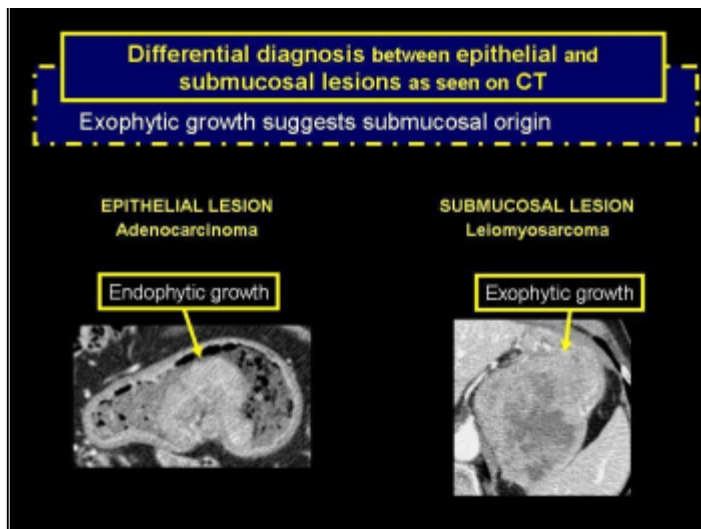
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Area of Interest: Abdomen;

Imaging Technique: CT;

Procedure: Computer Applications-General;

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Differential diagnosis between submucosal and mucosal lesions as seen on CT.

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Area of Interest: Abdomen;

Imaging Technique: CT;

Procedure: Computer Applications-General;

Special Focus: Neoplasia;

MeSH

Stomach [A03.556.875.875]

An organ of digestion situated in the left upper quadrant of the abdomen between the termination of the ESOPHAGUS and the beginning of the DUODENUM.

Stomach Neoplasms [C06.301.371.767]

Tumors or cancer of the STOMACH.

References

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- [4] Levy AD, Remotti HE, Thompson WM et al (2003) From the archives of the AFIP Gastrointestinal stromal tumors: Radiologic features with pathologic correlation *Radiographics* 23:283-304

Citation

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