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Case 8987

Proximal mechanical intestinal obstruction

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Patient female, 70 year(s)

Clinical History

The woman went to the Emergency Room because of epigastric pain and vomiting. She had two similar episodes before which resolved after medical treatment. The physical examination yielded anorexia, weight loss and a painful and tympanic abdomen without signs of peritoneal irritation.

Imaging Findings

An initial abdominal radiography (Fig. 1) was considered as normal, distension of intestinal loops or gas-fluid levels were not present. Abdominal ultrasound (Fig. 2) revealed in the region of the gastric antrum a hypoechoic mass measuring 4x4 cm, with well-defined margins and internal vascularity on Colour-Doppler analysis. EDA showed a normal gastric mucosa. Upper gastro-intestinal series (Fig. 3-4) put in evidence signs of gastric intussusception associated with a filling defect in the lumen of the duodenal bulb, corresponding to an endoluminal mass. This mass measured 4x4 cm, had well-defined margins and regular outlines, and conditioned a duodenal dilation with delayed emptying of the stomach. Abdominal CT demonstrated a gastric polypoid mass prolapsing into the duodenal bulb (Fig. 5), which enhanced slightly heterogeneously after intravenous contrast injection.
A gastrectomy was performed and the result of histopathologic and immunohistochemical analyses was a stromal tumor with CD34+ and c-Kit– and a medium risk of malignancy.

Discussion

Gastrointestinal stromal tumors (GIST) are rare, representing only 1% of all gastrointestinal tumors, with the stomach being most often affected (70%). They grow intramurally (submucosal) but can have occasionally an exophytic or endoluminal component with ulceration of the mucosa.
GIST appear predominantly in the sixth decade of life and manifest clinically by abdominal pain, nausea, vomiting, anorexia and weight loss, constipation, melaena, haematemesis or iron-deficiency anaemia.
The correlation between clinical symptoms and imaging findings is very important to make the diagnosis. However, the confirmation is obtained only after histopathologic and immunohistochemical analyses, which also estimate the potential of malignancy by taking into account the tumor size and the mitotic index.
The radiologic findings depend on the size and aggressiveness of a GIST. On fluoroscopy, a filling defect with smooth margins and obtuse angles is suggestive of a benign submucosal lesion. An additional ulceration of the filling defect suggests malignancy.
CT helps to characterize the mass, to determinate its exophytic and endoluminal extension, and to detect possible metastases (lung, liver, bone and peritoneum). Frequently, a malignant GIST presents as a large (> 5cm) and heterogeneous mass, with densities corresponding to necrotic, cystic and/or calcified areas. Benign tumors exhibit a more homogeneous density.
The majority of GIST are positive to c-Kit and CD34 (70-90%). In 4% of cases, c-Kit is negative due to a mutation in another tyrosine-kinase receptor, which constitutes an alternative pathway for tumour cell proliferation.

Final Diagnosis

GIST of gastric antrum

Differential Diagnosis List

- Leiomyoma
- Hyperplastic polyp
- Adenomatous polyp
- Inflammatory fibroid polyp
- Malignant tumor

MeSH

Stomach Neoplasms [C06.301.371.767]
Tumors or cancer of the STOMACH.
Gastrointestinal Transit [E01.370.372.310]
Passage of food (sometimes in the form of a test meal) through the gastrointestinal tract as measured in minutes or hours. The rate of passage through the intestine is an indicator of small bowel function.

References

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[2]
Choi SH, Han JK, Kim SH, Lee JM, Lee KH, Kim YJ, An SK, Choi BI (2004) Intussusception in Adults: From Stomach to Rectum. AJR Am J Roentgenol 183:691-698

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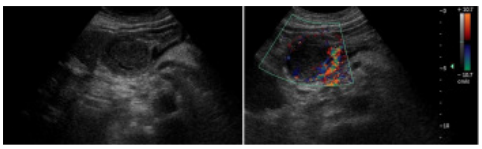
Figure 1

Abdominal radiography

Normal findings, no signs of intestinal obstruction.

Figure 2

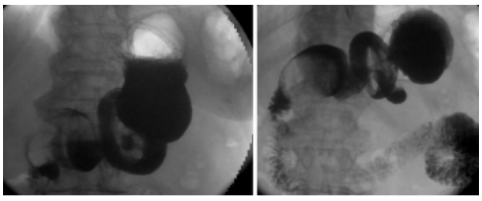
Abdominal and Doppler ultrasound



Transversal plane. Hypoechoic and hypervascular mass measuring 4cm in the lumen of the gastric antrum.

Figure 3

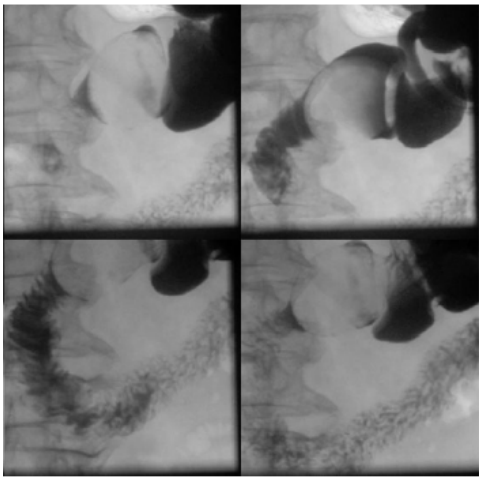
Upper GI series



Prepyloric collar-shaped outpouching indicating gastric intussusception

Figure 4

Upper GI series



Rounded filling defect in the lumen of duodenal bulb, with regular outlines, measuring 4 cm and conditioning distention of this gastric segment. Limited distal progression of contrast agent with opacification of duodenal arch.

Figure 5

Abdominal CT