Gastrointestinal stromal tumor (GIST) of the small bowel

April 22, 2008 | MRI [1], Ultrasound [2]

An 85-year-old woman complained of long-term mild abdominal pain. Abdominal examination revealed a palpable mass in the left paraumbilical region.

**CLINICAL HISTORY**
An 85-year-old woman complained of long-term mild abdominal pain. Abdominal examination revealed a palpable mass in the left paraumbilical region.

**FINDINGS**
FIGURE 1. Transverse abdominal ultrasound of left lower quadrant shows a large heterogeneous mass with necrotic central areas. Lesion ulcerates penetrating adjacent small bowel loop wall, confirming its origin in the gut (*).
FIGURE 2. Axial abdominal CT with iodinated oral and intravenous contrast shows a large heterogeneous, enhancing mass, with a low-attenuation necrotic central portion. The mass arises from an adjacent segment of the small intestine. Wall ulceration and direct communication with the intestinal lumen are identified.
FIGURE 3. Coronal T2-weighted MRI shows the round heterogeneous mass with a large draining vessel at its upper pole.
FIGURE 4. Axial diffusion-weighted MRI (b = 1000) shows tumor restriction causing decreased signal on the video-inverted images.

**DIAGNOSIS**
Small bowel gastrointestinal stromal tumor (GIST).

**DIFFERENTIAL DIAGNOSIS**
Primary and metastatic small intestinal neoplasms. Adenocarcinoma is the most common primary malignancy of the small bowel. Lymphoma produces large masses within the small intestine that may ulcerate, cavitate, and extend into the adjacent mesentery. Lymphoma may be indistinguishable from GIST on radiological images. Mesenteric fibromatosis (desmoid tumor), leiomyomas, carcinoids, inflammatory pseudotumor, sclerosing mesenteritis, and metastatic disease may also simulate GIST.

**DISCUSSION**
Stromal tumors are the most common mesenchymal neoplasms of the gastrointestinal tract. They may occur from the esophagus to the anus. The tumor is frequently found in the stomach (70%) and the small intestine (20% to 30%) and, less commonly, in the omentum, mesentery, and retroperitoneum. Patients are typically over 50 years old at the time of presentation. GIST is rarely seen in patients younger than 40 years old.

The most specific diagnostic criterion for GIST is the expression of the tyrosine kinase growth factor receptor KIT (CD117). Clinical manifestations are highly variable, and depend on the location and size of the tumors. Small, benign GIST may be discovered incidentally. Other patients will present with profound symptoms that reflect large or highly aggressive tumors invading adjacent organs. The most common clinical manifestation for symptomatic GIST is gastrointestinal bleeding from mucosal ulceration.

Abdominal contrast-enhanced CT typically shows a large, hypervascular, enhancing mass (Figure 2). The mass is often heterogeneous owing to necrosis, hemorrhage, or cystic degeneration. Ulceration and fistulization to the gastrointestinal lumen are also common features.

Malignancy is characterized by local invasion and metastases (Figure 4). Malignant GISTs are larger, more highly cellular, and more mitotically active than benign tumors. GIST metastases are most frequently found in the liver and peritoneum. Metastases to the lymph nodes are extremely rare. Surgical resection has been the conventional therapy for patients with GIST. Malignant GISTs typically recur, metastasizing to the liver and peritoneal surface. Chemotherapy, chemoembolization, and irradiation have been ineffective in treating patients with metastatic and recurrent disease. A new molecularly targeted tyrosine kinase receptor blocker (Imatinib mesylate) is proving to be highly effective.

**Bibliography**

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Disclosures:

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