

## Gastrointestinal Stromal Tumor with Pulmonary Metastasis

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**Abstract:** Gastrointestinal stromal tumor (GIST) is rare but is the most common mesenchymal tumor of the gastrointestinal tract. It usually arises from the stomach and small intestine. We present a case of GIST treated with surgery and adjuvant imatinib mesylate for pulmonary metastasis.

**Key Words:** Gastrointestinal stromal tumor, jejunum, imatinib mesylate

### Akciğerlere Metastaz Yapmış Gastrointestinal Stromal Tümör

**Özet:** Gastrointestinal stromal tümörler (GIST) nadir görülmesine karşın gastrointestinal sistemin en sık gözlenen mezenkimal tümörleridir. Biz burada cerrahi ve pulmoner metastazları için de adjuvan imatinib mesilat tedavisi uygulanan GIST olgusunu sunmaktayız.

**Anahtar Sözcükler:** Gastrointestinal stromal tümör, jejunum, imatinib mesilat

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### Introduction

Stromal tumors are the most common mesenchymal tumors of the gastrointestinal tract, although they are very rare (1). They usually arise from the stomach or small intestine and the primary therapeutic approach is surgery. Imatinib mesylate, a specific tyrosine kinase inhibitor, is gaining increasing popularity for adjuvant chemotherapy as GIST therapy is a good sample for molecular cancer treatment modalities. Imatinib mesylate is also effective in patients who have metastases.

Here we report a case of jejunal GIST, with multiple pulmonary metastases.

### Case report

A 75-year-old male was admitted to our clinic with a 3-month history of an abdominal mass. By this time the patient had lost 5-6 kg but the gastrointestinal passage was not problematic. His physical examination revealed an abdominal mass of 20 × 15 cm along the right hypochondriac and lumbar regions. In abdominal ultrasonography the palpated mass showed a hypo-echoic, heterogeneous, and vascularized structure that caused significant thickening in the intestinal wall. In addition, it caused compression on the aorta and vena cava inferior according to endoscopic ultrasonography. In contrast abdominal computerized tomography an intra-abdominal mass of 20 × 10 × 12 cm was detected, which was highly contrasted and showed a relationship with a jejunal segment (Figure 1). After that mesenteric angiography was performed to determine probable vascular invasion but no invasion was detected. Because of the suspicious images fluorodeoxyglucose positron emission tomography was performed and multiple lesions of metastasis were detected in the lungs (Figure 2). In conclusion, the probable diagnosis decided on was metastatic gastrointestinal stromal tumor. The tumor, originating from the jejunum, was resected and no vascular invasion was detected (Figure 3). GIST and CD 117 were highly positive in the immunohistochemical evaluation (Figure 4). The patient had no complications after the operation and chemotherapy was scheduled.

Received: July 13, 2007  
Accepted: March 10, 2008

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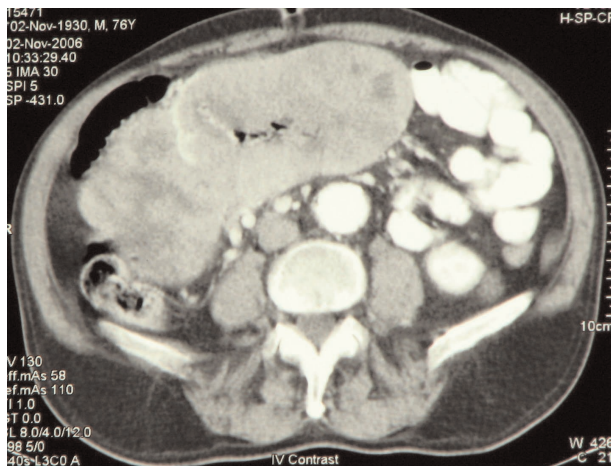


Figure 1. Intraperitoneal mass, with necrosis in center.

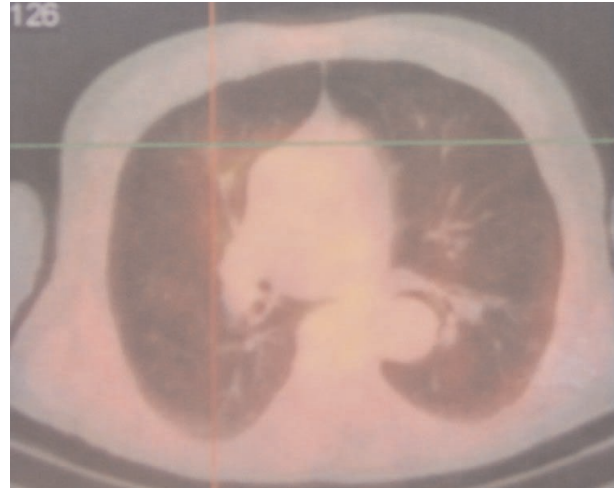


Figure 2. Pulmonary increased FDG activation.

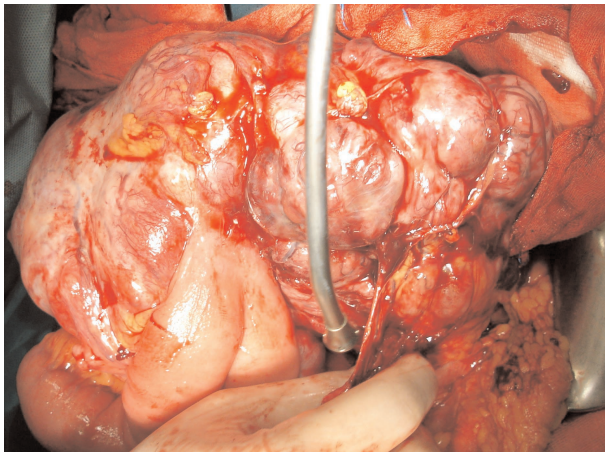


Figure 3. Fragile mass originating from jejunum.

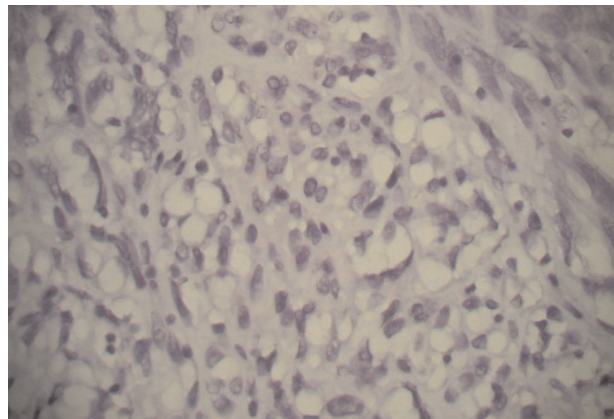


Figure 4. Spherical or spindle-shaped differentiated cells with clear cytoplasm that show strong activation of CD 117 ( $\times 40$ ).

## Discussion

Gastrointestinal stromal tumors (GISTs) originate from Cajal's intestinal cells, which are known to be the pacemakers of intestinal myenteric plexus and considered to be a different entity to sarcomas (2). Kinase inhibitor of tyrosine (KIT) (CD 117) is detected immunohistochemically in most gastrointestinal stromal tumor cases (3,4). Although GISTs are known to be sporadic, there are families reported to have germline mutation in KIT (5). GISTs usually become symptomatic when they reach large diameters and symptoms are due to bleeding or obstruction. Computerized tomography and magnetic resonance imaging are valid for evaluating both primary tumors and metastatic lesions. FDG-PET

has high sensitivity but low specificity for GISTs. Moreover, it is a valuable tool for evaluating therapeutic progress. Percutaneous biopsy may be used in the differential diagnosis when the lesion is easy to manipulate without serious complications.

The primary therapeutic approach is surgery for GISTs. It is possible to excise the lesion with negative surgical borders in most cases but no beneficial effect of lymphatic resection has been proved (6). The effect of postoperative imatinib mesylate is controversial for resections with tumor free surgical borders but it seems beneficial for locally advanced or metastatic disease (1). Mitotic index and the diameter of the tumor are regarded as the most important prognostic criteria for a GIST (7).

In addition, GIST may show associations with other malignancies and this is also a determinant for prognosis (8). The follow-up schedule for a GIST larger than 5 cm or having more than 5 mitoses in flow cytometry is every 3 months for the first 3 years and every 6 months for the following 2 years by computerized tomography. Smaller or less mitotic lesions should be followed up every 6

months for 5 years (9). In a retrospective study of 200 GIST patients who only had surgical therapy, Ronald et al. stated that 47% showed metastasis while 7% showed local recurrence and the overall 5-year surveillance was 54% (10). The literature about GIST patients who had chemotherapy including imatinib mesylate or other agents is still insufficient.

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