

# Pancreatic Metastasis from Rectal Gastrointestinal Stromal Tumor: A Case Report

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## Abstract

Gastrointestinal stromal tumors are mesenchymal neoplasms of the gastrointestinal tract that originate from all areas of the gastrointestinal tract. Metastases to the liver, peritoneum, bones, lungs and soft tissues have been reported. We present the case of a 47-year-old woman with rectal gastrointestinal stromal tumor that underwent wide local excision. She was treated with imatinib for a few months after surgery. After eight months, she was admitted to the emergency service with complaints of epigastric pain, nausea, vomiting, and anorexia. Imaging studies showed the presence of a pancreatic head tumor and three hepatic masses. The patient underwent exploratory laparotomy. Excisional biopsy of one hepatic mass and core needle biopsy of the pancreatic head mass revealed metastases to the liver and pancreas. During the hospital course the patient's condition deteriorated and she subsequently expired.

**Keywords:** Metastasis, Pancreas, Gastrointestinal stromal tumors (GIST)

## Introduction

Gastrointestinal stromal tumors (GIST) are mesenchymal neoplasms of the gastrointestinal tract that account for less than 1% of gastrointestinal (GI) tumors.<sup>1</sup> Primary GISTs originate from all areas of the GI tract, but most commonly are found in the stomach (40%-70%), small bowel (20%-40%), colorectum (5%-15%), and esophagus (5%).<sup>2</sup> The most common site of metastasis for GIST are the liver (65%) and peritoneum (21%), lymph nodes (6%), bones (6%), lungs (2%), and

soft tissues (<1%).<sup>3</sup> Our case of rectal GIST presented with pancreatic and liver metastases after 8 months.

## Case Report

A 47-year-old woman with Cushing's syndrome presented at our hospital with complaints of rectal bleeding and painful defecation of three months duration. She had undergone bilateral adrenalectomy 15 years earlier. Colonoscopy showed a mass located 1 cm from the anal verge. We biopsied the mass and immunohistochemistry (IHC)

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findings favored Kit-positive GIST. The specimen was also positive for S100 vimentin (Vim3B4) and negative for betacatenin, cytokeratin (AE1/AE2), DOG-1, HMB45, LCA(2B11+PD7120), SMA(1A4) and 90% Ki67(MIB-1). Evaluations showed no site for distant metastasis.

She underwent wide local excision, sphincteroplasty, and wound closure with an endorectal flap. After eight months, she was readmitted to the Emergency service with epigastric pain, nausea, and vomiting. She also suffered from anorexia. The patient had been under treatment with prednisolone and imatinib during the few months prior to her readmission. Transrectal sonography was normal, there was no evidence of recurrence.

The abdominopelvic computed tomography (CT) scan was remarkable for three cystic structures in the liver. The largest was 5.6×5 cm with septation and a satellite lesion (Figure 1). A 3.8×2.4 cm hypodense mass with mild heterogenous enhancement and no pancreatic duct dilatation was also seen in the head of the pancreas. The possibility of a malignant process was considered (Figure 2). Due to severe abdominal pain, conservative therapy for nausea was unsuccessful.

She underwent an exploratory laparotomy and cholecystectomy, with an excisional biopsy from

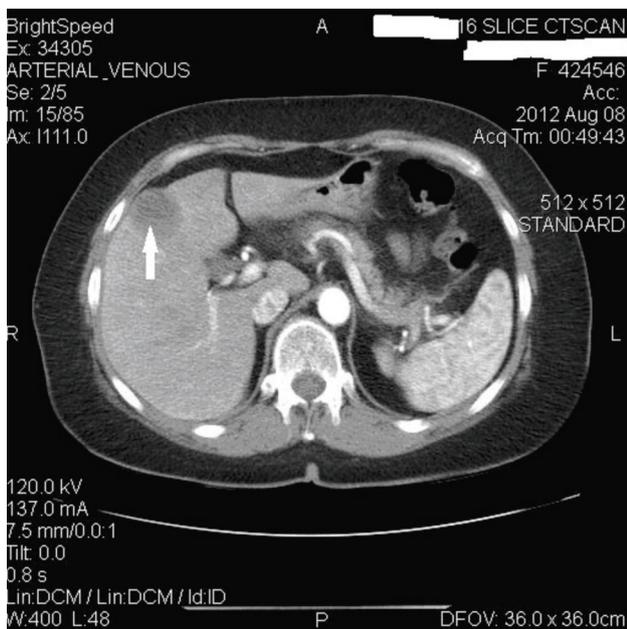
the most accessible liver mass. A core needle biopsy of the pancreatic mass was obtained. A drain was inserted next to the site of the pancreatic biopsy. No obstruction was detected. Pathologic assessment of biopsies revealed that both pancreatic and hepatic lesions were metastatic tumors, in favor of GIST metastasis.

During the postoperative hospital stay, the patient developed intra-abdominal sepsis and underwent mechanical ventilation due to severe pneumonia. Unfortunately, she did not respond to our intensive care and expired on the 30<sup>th</sup> postoperative day.

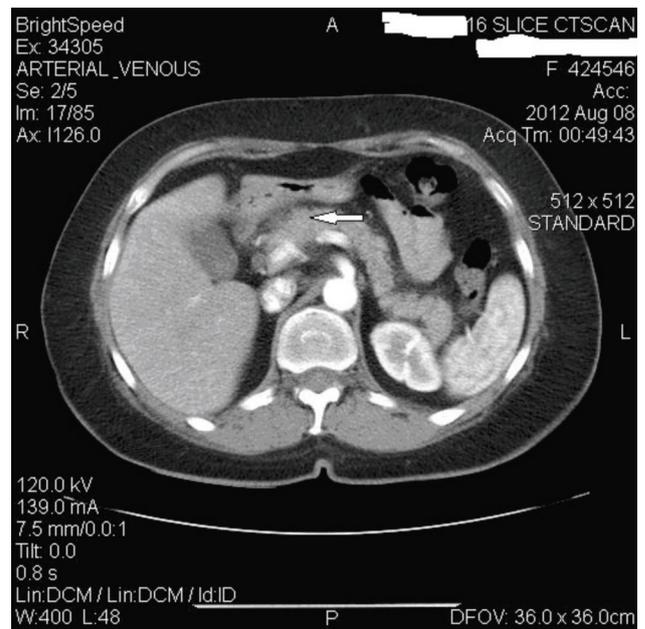
## Discussion

Gastrointestinal stromal tumors that account for 0.2% of all GI neoplasms are the most common sarcomas of the GI tract.<sup>2</sup> Although GIST is a new tumor entity, there are numerous literature on this tumor.<sup>4</sup> In 1983, Mazur and Clarke have initially used the term GIST to describe the nonepithelial neoplasms of the GI tract which lack the ultrastructural feature of smooth muscle cells as well as the immunohistochemical characteristics of Schwann cells.<sup>2</sup>

The incidence of GIST is about 10-20 per million per year. Malignancy rate is 20%-30%.



**Figure 1.** One of hepatic masses (arrow) is seen in this section of an abdominal CT scan.



**Figure 2.** Hypodense mass in the head of the pancreas (arrow).

However the exact incidence of GIST is not known because of the incomplete definition and classification. Over 90% of GISTs occur in people over 40 years of age, with a median age of 63 years. Gastrointestinal stromal tumors are in all age groups, even children.<sup>4</sup>

The clinical presentation of GIST varies. Only 70% of patients have symptoms, while 20% have are asymptomatic, and 10% are detected in autopsy. The symptoms and signs are not specific. Bleeding is the most common symptom that is related to erosion of the GI tract lumen. Approximately 50% of GISTs show evidence of metastases at the time of diagnosis due to nonspecific symptoms.<sup>4</sup>

Contrast-enhanced CT is the diagnostic imaging option to assist with tumor characterization, evaluate its extent, and locate metastatic disease.<sup>5</sup> The most common metastatic sites for GIST are the liver (65%) and peritoneum (21%); GISTs rarely metastasize to the lymph nodes (6%), bones (6%), lungs (2%), and soft tissues (<1%).<sup>3</sup> We have found that metastasis to the pancreas has not been previously reported. However, according to our findings, the pancreas can be one of the metastatic sites for GIST.

Surgery is the only curative therapy for patients with primary, resectable GIST. The recurrence is high and 5-year overall survival (OS) rates after complete macroscopic resection is 54%.<sup>5</sup>

Imatinib is now indicated as first-line treatment of metastatic or unresectable Kit-positive GIST.<sup>6</sup> Our patient underwent resection for rectal GIST and received imatinib, however she returned after eight months with metastases to the liver and pancreas.

This case report shows that the pancreas can be one of the metastatic sites for GIST. The relation to pathologic and genotypic features need further investigations.

### Conflict of Interest

No conflict of interest is declared.

### References

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