

# Gastrointestinal stromal tumor of the duodenum

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## Abstract:

*Gastrointestinal stromal tumors are the mostly seen mesenchymal tumors of the gastrointestinal system. This rare tumor in duodenum is seen 5%. The diagnosis and treatment is hard because of its rarity and location.*

*Case: A 63-year-old man with a solid mass at the third part of the duodenum, and local segmental resection of the tumor was performed. The histopathology was reported as gastrointestinal stromal tumor of the duodenum with negative surgical margins.*

*Discussion: Gastrointestinal stromal tumors at the duodenum are seen rarely. They can be asymptomatic or may involve symptoms of upper GI bleeding and abdominal pain at presentation. Because of the misleading clinical presentation the differential diagnosis may be difficult. Tumors less than 2 cm can be followed by endoscopic ultrasound. Local segmental resection with 1cm clear margin is the treatment choice.*

*Keywords: Duodenum, gastrointestinal stromal tumor; treatment*

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## 1. Introduction

Gastrointestinal stromal tumors (GIST) are the most common type of mesenchymal tumors found in the gastrointestinal system (1). GISTs are rare, with relative annual incidence of 14.5 per million and prevalence of 129 per million (2). GIST may occur anywhere in the digestive tract, but are more frequently located in the stomach (60–70%) and midgut (25%) and less often in colon and rectum (5–10%) (3). Duodenal GIST represents only 4–5% of all GISTs, but accounted for 6–21% of surgical resected ones (4). Here we present of a case of 63 years elderly man with gastrointestinal stromal tumor at the duodenum that was detected on the ultrasonography, underwent surgical resection and diagnosed histologically.

## 2. Case Presentation

A 63-year-old man was admitted to our general surgery clinic with no complaints, just check-up. After taking her history and physical examination routine laboratory examinations were taken. Abdominal physical examination produced unremarkable findings. There was not any significant past or family history of malignancy of the patient. The patient's hematological and biochemical findings on admission included; AST 11 U/L, ALT 15 U/L, GGT 61 U/L, albumin 4.1 g/dL, total bilirubin 0.8 mg/dL, direct bilirubin 0.12 mg/dL, CRP 1 mg/dL, BUN 26 mg/dL, creatinine 0.87 mg/dL, haemoglobin 13.7 g/dL, WBC 6900/μl, platelets 188 K/μl, PT 11.9 s, PTT 27.9%, and, INR 1.03. Abdominal ultrasonography revealed a 58x29x42 mm solid mass with a hyperechoic peripheral hypoechoic central lobe in the pancreas uncinate process. (Pancreas tm?, conglomerated LAP??). Pozitron Emission Tomography revealed was performed and a 26x41x31mm size bilobed, central hypodense, heterogeneous hypermetabolic (SUVmax: 7.5) soft tissue lesion was observed (preoperative metastatic LAP?, histopathological examination is recommended) (Figure 1). The patient demanded the surgical removal of the tumor. Exact details of the procedure were explained and a patient informed consent was obtained. He had no other surgical history. He received a single dose of prophylactic antibiotic (Cefuroxime Axetil 1g) 1 hour before the skin incision and antithrombotic prophylaxis was administered with low-molecular-weight heparin 12 hours before. A urinary catheter was inserted. At surgery, a mass at the third part of the duodenum was seen. Excision and end to end anastomoses and gastroenterostomy were performed (Figure 2). Resected specimen was sent to pathology (Figure 3). No problems occurred during the surgery. The total operation time was 120 minutes with a blood loss of fewer than 200 ml. There were no postoperative complications. The patient was started on an oral diet postoperative third day and the abdominal drain was removed on the second day. She was discharged from hospital on the fifth postoperative day. He resumed her normal life without any problems after 10 months of treatment and has no signs of the disease at the follow-up.

The histopathology was reported as gastrointestinal stromal tumor of the duodenum.

Tumor in duodenum was 4x3 cm in diameters, immune staining applied for diagnosis of positive staining of cd 34, cd 117, with sma and vimentine. and, negative with desmin, s - 100 and snaptofizin. Ki67 is below 5%, mitosis <5 10 hpf, and no lenfovascular invasion not observed. No tumor is determined in proximal and distal surgical margins at duodenum.

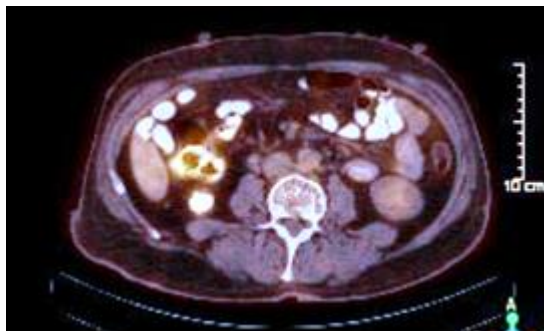


Fig-1: A 26x41x31mm size bilobed, central hypodense, heterogeneous hypermetabolic (SUVmax: 7.5) soft tissue lesion was seen on PET CT



Fig-2: After resection of the tumor end-to-end anastomoses was seen.



Fig-3: Third part of the duodenum was resected.

### 3. Discussion

Duodenal GIST is seen at median age of 56 years with a dominance of males (54% vs. 46%) (1,5).

Most cases are sporadic, whereas familial clustering is reported in only 1.5–4% of the cases (6). As also seen in our patient, it is a well-known fact that von Recklinghausen neurofibromatosis type 1 is associated with an increased risk for GIST and affect duodenum in 22–31%, and tend to be smaller, multiple and with lower mitotic count and occur at younger age (7,8).

Duodenal GIST at the third portion was seen 22% (9). As also seen in our patient, immunohistochemistry staining of the specimens revealed the following distribution of the markers: CD117 (c-kit) (92–100%), and less frequently CD34 (54–70%), smooth muscle actin (20–30%), S-100 protein (10–20%) (10).

21% cases were asymptomatic and found incidentally and 10% on autopsy (11). Some authors revealed that in contrast to the other localizations the most frequent manifestation of dGIST is the upper gastrointestinal bleeding, which is in accordance with the literature (7,12).

Abdominal US is useful screening tool in the cases with dull pain in upper abdomen, but computed tomography (CT) and magnetic resonance imaging (MRI) are mandatory to make an exact staging and preoperative planning of surgery, Fluorodeoxyglucose positron emission tomography is not routine tool but can be useful to monitor the effect from imatinib treatment and follow-up (13). We performed PET CT to our patient.

Choices for surgical approaches are pancreatoduodenectomy, wedge resection and segmental resection. R0 resection with 1–2 cm clear margin is sufficient treatment and lymph node dissection is not recommended due to the low incidence of lymphatic metastases (14).

Imatinib mesylate have played a key role as a neoadjuvant therapy in the management of GISTs (15).

### 4. Conclusions

GIST at the duodenum is seen very rarely. It may be asymptomatic. When diagnosed, local resection with 1cm negative margins is enough for the treatment.

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