Duodenal Stromal Tumor: Report of a Case

M. İlhan Yıldırgan¹, Mahmut Başoğlu¹, S. Selçuk Atamanalp¹, Yavuz Albayrak¹, Nesrin Gürsan², and Ömer Önbash³

¹Department of General Surgery, Faculty of Medicine, Atatürk University, 25240 Erzurum, Turkey
²Department of Pathology, Faculty of Medicine, Atatürk University, Erzurum, Turkey
³Department of Radiology, Faculty of Medicine, Atatürk University, Erzurum, Turkey

Abstract
Gastrointestinal stromal tumors are rare tumors of the gastrointestinal (GI) tract that arise from primitive mesenchymal cells. Gastrointestinal stromal tumors account for approximately 80% all of gastrointestinal mesenchymal tumors. Duodenal stromal tumors (DSTs) manifest with unexplained melena, pain, bleeding, anemia, sometimes a partial duodenal obstruction and, rarely, with obstructive jaundice. If the tumor is successfully treated, its prognosis is usually good because of its non-aggressive nature. If resected, the prognosis is favorable in a majority of cases, and it is much better than in carcinomas of the duodenum. In this article, we report a case of DST originating from the first and second portion of the duodenum. Our patient did not have any problems postoperatively and remained symptom-free at 18 months after surgery.

Key words Duodenum · Gastrointestinal stromal tumor · Leiomyosarcoma

Introduction
Duodenal stromal tumors (DSTs) are rare tumors.¹⁻⁴ Most such tumors are described as leiomyomas, and leiomyosarcomas in the older medical literature actually refer to gastrointestinal stromal tumors (GIST).⁵ About 25%–40% of GISTs arise in the small intestine (10%–20% of which in the duodenum). On presentation, 41%–47% of malignant GISTs are metastatic.⁶ Usually, the clinical signs are not specific and they are most commonly related to unexplained melena, pain, bleeding, and anemia. This report describes a case of a GIST arising from the duodenum.

Case Report
A 47-year-old man, 175 cm tall and weighing 82 kg, was admitted to the Atatürk University, Faculty of Medicine Hospital in July 2002. This patient complained of epigastric pain and abdominal distension. An abdominal ultrasonography (US) showed a 10 × 7-cm, well-defined, hypoechoic, and heterogeneous mass in the middle of the abdomen (Fig. 1). A computed tomography (CT) scan of the abdomen revealed a 10 × 9 × 12-cm hypodense, central necrosis, heterogeneous soft tissue mass in the right middle of the abdomen (Fig. 2). The rest of the GI tract was normal based on barium studies. No other lesion was detected. The laboratory data at admission were as follows: hemoglobin, 9 g/dl; leukocyte count, 13 800/mm³. A pre-operative, tentative diagnosis of duodenal GIST was made.

An upper gastrointestinal (GI) endoscopy showed linear ulcers in bulbus and deep ulceration at the junction of the first to second portions of the duodenum. Abdominal ultrasonography (US) showed a 10 × 7-cm, well-defined, hypoechoic, and heterogeneous mass in the middle of the abdomen (Fig. 1). A computed tomography (CT) scan of the abdomen revealed a 10 × 9 × 12-cm hypodense, central necrosis, heterogeneous soft tissue mass in the right middle of the abdomen (Fig. 2). The rest of the GI tract was normal based on barium studies. No other lesion was detected. The laboratory data at admission were as follows: hemoglobin, 9 g/dl; leukocyte count, 13 800/mm³. A pre-operative, tentative diagnosis of duodenal GIST was made.

A laparotomy was performed under general anesthesia through an upper abdominal midline incision. A mass measuring 12 × 11 × 10 cm in diameter was observed and found to extend underneath the liver while sticking on to the front side of the first and second parts of duodenum (Fig. 3). Its surface was not smooth and the inner part was polypoid in appearance. The mass was removed from the neighboring tissue and then it was resected totally (Fig. 4). The front side of the first and second parts of the duodenum was removed together with the mass. The distal part of the duodenum...
appeared to be 2 cm below the papilla without any damage. The front part of the duodenum was repaired and the omentum was placed around the damaged area, then the operation was ended.

Microscopically, the tumor was composed of spindle cells arranged into short fascicles. The nuclei showed mild pleomorphism. Very few mitoses were observed (Fig. 5). Immunohistochemical staining showed strong reactivity with the antibodies to CD117 and vimentin in essentially all tumor cells. Focally, some cells were positive for CD34. The tumor cells were unreactive with antibodies to keratin, CD31, demsin, smooth muscle actin, and S100 protein. The pathological diagnosis was GIST. There was no evidence of either vascular invasion or lymph node metastasis from the tumor. The patient did well postoperatively and was discharged on postoperative day 11.