

An Analysis of 40 Cases of Primary Small Bowel Tumors at a Tertiary Hospital Over a 10-Year Period

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Abstract

Objective: Although the small bowel has the largest surface area in the gastrointestinal system, its tumors are rare. Since most of these tumors are clinically silent, diagnosis can be difficult. The aim of this study is to evaluate the demographic data, presentation symptoms, diagnostic methods, and pathologies of the cases operated for small bowel tumors.

Methods: In our study, the data of 48 consecutive cases, operated for small bowel neoplasms in the Trauma and Emergency Surgery unit of a tertiary hospital between January 1, 2012, and December 31, 2021, were analyzed retrospectively.

Results: A total of 40 cases were included. Eight patients had (20%) gastrointestinal stromal tumor, 3 patients (7%) had neuroendocrine tumor, 2 patients had (5%) sarcoma, 4 patients had (10%) lymphoma, 4 (10%) patients had inflammatory polyp, 3 patients had (7%) adenocarcinomas, and 2 patients had (5%) undifferentiated malignant tumors. In 8 cases, recurrence of malignancy was detected in the follow-up period.

Conclusion: Small bowel neoplasms usually cause emergency admissions with nonspecific symptoms. These cases constitute an important group that should be kept in mind, and early recognition of rare small bowel malignancies in this group is important in terms of prognosis and survival of the disease.

Keywords: Small bowel, surgery, tumor

INTRODUCTION

Although the small bowel has the largest surface area in the gastrointestinal system, its tumors are rare. Small bowel tumors account for 1%-3% of all gastrointestinal system tumors and 0.3% of all cancers.¹ Since most of these tumors are clinically silent, diagnosis can be difficult. Nonspecific complaints such as abdominal pain, bloating, nausea, vomiting, and gastrointestinal system (GIS) bleeding cause most of the hospital admissions and cancer is generally in an advanced stage at the time of admission. Duodenum is the most frequent tumor site for adenocarcinomas, and ileum is the most frequent tumor site for carcinoid tumors.¹⁻² Alcohol use, smoking, and consumption of refined sugar, carbohydrates, and smoked foods increase the risk of tumor occurrence while consumption of coffee, fish, vegetables, and fruits reduces the risk.³ Among the small bowel cancers, the most common histological type was adenocarcinoma followed by carcinoid tumors, but currently, their incidence is nearly the same, whereas lymphoma and sarcoma are far less common.⁴

Computed tomography (CT), magnetic resonance imaging (MRI), positron emission tomography (PET), and endoscopy are usually helpful in diagnosis. Computed tomography alone has 80% sensitivity, while combined use of CT and MR enterography has better sensitivity ranging from 85% to 95%.⁵

It is possible to detect and sample suspicious lesions with endoscopy; however, the length of the small intestine often limits its use and makes it impossible to reach lesions beyond proximal segments of jejunum. Lately, capsule endoscopy is used more frequently in the diagnosis of small bowel neoplasms. Studies support the use of capsule endoscopy because of its higher diagnostic success when compared with classical enteroscopy.⁶ Capsule endoscopy is less likely to miss distal lesions, especially in cases with gastrointestinal bleeding, and has the ability to examine the whole small bowel.

Double balloon enteroscopy is another frequently used method with a diagnostic success rate of 43%-80%. This method has obvious therapeutic advantages over capsule endoscopy such as endoscopic stenting, balloon dilatation, biopsy, and preoperative localization.⁷

Another set of agents helpful in the diagnosis of this particular neoplasms are serum carcinoembryonic antigen (CEA) levels in adenocarcinomas, urinary 5-hydroxyindolacetic acid (5-HIAA), and serum chromogranin A levels in carcinoid tumors. Although the diagnostic value of the CEA level

is limited in adenocarcinomas, elevated 5-HIA levels are more specific for carcinoid tumors.

It is often difficult to make a definitive diagnosis of small bowel tumors, knowing the epidemiology and suspecting it may enable early recognition.

The aim of this study is to evaluate the demographic data, presentation symptoms, diagnostic methods, and pathologies of the cases operated for small intestinal pathologies.

METHODS

In our study, the data of 48 consecutive cases, operated for small bowel neoplasms in the Trauma and Emergency Surgery unit of Istanbul University Istanbul Medical Faculty between January 1, 2012, and December 31, 2021, were analyzed retrospectively. Demographic data, clinical presentations, duration of symptoms, pathologies, and diagnostic pathways of individual cases were evaluated. Eight cases with periampullary region tumors were excluded from the study. Ethics committee approval was not obtained because of the retrospective nature of the study.

RESULTS

A total of 40 cases were included. Twenty-four (60%) were male and 16 were female. The median age was 56 (18-84). Thirty-five cases had emergency admission to the hospital. The most common indications for admission were abdominal pain (77%), obstruction symptoms (47%), and GI bleeding (27%). The median duration of symptoms was 5 (1-120) days.

The diagnostic tool used for definitive diagnosis was computed tomography in 27 (67%) cases, upper GI endoscopy in 8 (20%) cases, capsule enteroscopy in 3 (8%) cases, positron emission tomography in 1 (2.5%) case, and colonoscopy in 1 (2.5%) case.

Eight patients had (20%) gastrointestinal stromal tumor, 3 patients (7%) had neuroendocrine tumor, 2 patients had (5%) sarcoma, 4 patients had (10%) lymphoma, 4 (10%) patients had inflammatory polyp, 3 patients had (7%) adenocarcinomas, and 2 (5%) had undifferentiated malignant tumors. Ectopic pancreas was encountered in 1 case, endometriosis externa in 2 cases, diverticulitis in 1 case, and hemangioma in 1 case. In 8 cases, recurrence of malignancy was detected in the follow-up period.

DISCUSSION

Small bowel tumors constitute less than 5% of all GI system tumors in the literature.⁸ The low number of patients that could be detected over

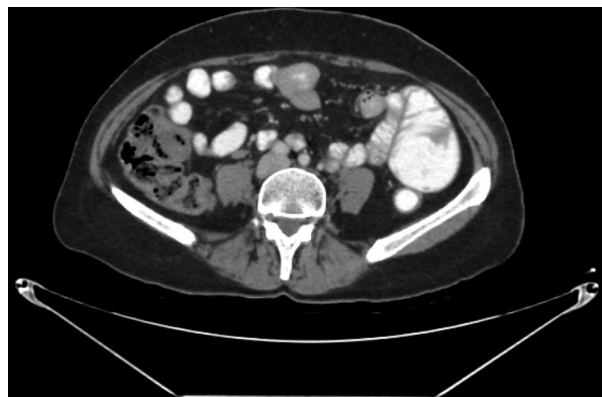


Figure 1. CT scan of a small bowel tumor

a review of 10-year period in a high-volume tertiary hospital is a testament to rarity of small bowel neoplasms.

A study by the American Cancer Society showed that small bowel tumors are seen more frequently in men and the most common ages of diagnosis are the 60s and 70s.⁹ In our study, 24 (60%) of the patients were male and the median age was 56 years.

In a study by Shirley et al,¹⁰ data show that symptoms associated with obstruction and bleeding were the most common reasons for hospital admissions. Obstruction is usually presented with cramps in the epigastric region followed by nonspecific symptoms like nausea, bloating, and vomiting. In our series, it was seen that 87% of the patients who underwent surgery for small bowel neoplasms had a preceding history of emergency admissions. Since most small bowel neoplasms are asymptomatic, patients are often discovered in an advanced stage. Abdominal pain was the most common symptom in our series (77%), followed by symptoms related to obstruction (47%) and GI bleeding (27%). Computed tomography, CT/MR enteroscopy, capsule endoscopy, and double balloon enteroscopy are various diagnostic tools helpful in the management of small bowel neoplasms. Computed tomography is commonly used for its practicality, it is a non-invasive procedure without any therapeutic modalities. Capsule endoscopy and classical enteroscopy have similarly high diagnostic success rates and

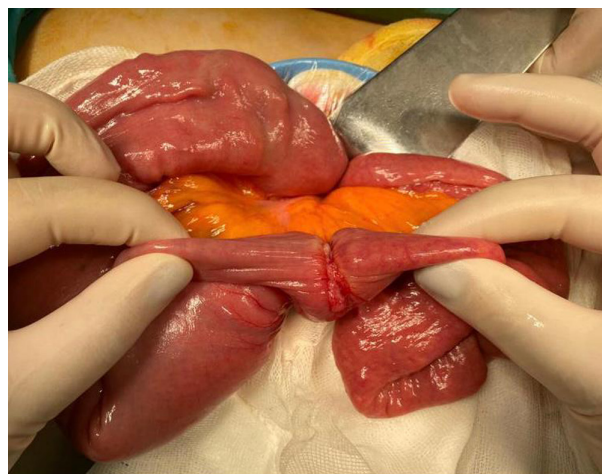


Figure 2. Intraoperative image of a small bowel tumor

MAIN POINTS

- Small bowel tumors are a rare disease of the gastrointestinal tract.
- Since it is accompanied by nonspecific symptoms, it is difficult to make a diagnosis.
- Computed tomography, positron emission tomography, upper gastrointestinal tract endoscopy, double balloon enteroscopy, and capsule endoscopy are used in the diagnosis.
- The stage of the disease and tumor pathology are the parameters that determine recurrence and survival.

generally helpful in management. Standard endoscopy has the additional benefit of intervention during examination and it is especially valuable during cases of GI bleeding.⁶ In our study, the most common imaging tool used for a definitive diagnosis was CT (67%) followed by upper GI endoscopy (20%) and capsule endoscopy (8%).

In a study conducted by Bilimoria et al.¹¹ the most common subtypes of small intestinal tumors were carcinoid tumors, adenocarcinomas, gastrointestinal tract tumors, and lymphomas.¹¹ In our study, we have similar results with GI stromal tumors consisting of the highest number of cases (20%)

CONCLUSION

Small bowel neoplasms usually cause emergency admissions with non-specific symptoms such as abdominal pain, GI bleeding, nausea, and/or vomiting. These cases constitute an important group that should be kept in mind, and early recognition of rare small bowel malignancies in this group is important in terms of prognosis and survival of the disease.

Ethics Committee Approval: Authors declared that the research was conducted according to the principles of the World Medical Association Declaration of Helsinki “Ethical Principles for Medical Research Involving Human Subjects”, (amended in October 2013).

Informed Consent: Written informed consent was obtained from all participants who participated in this study.

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