Gastrointestinal Stromal Tumor in Sigmoid Colon at a Tertiary Care Hospital: A Case Report


Abstract
Gastrointestinal stromal tumors (GISTs) are the mesenchymal tumors representing the most common mesenchymal neoplasm of gastrointestinal tract. However, GIST is recognized tumor entity and the literature on these stromal tumors has rapidly expanded. This present case report has been found in Dhaka at a tertiary care hospital in a male patient. The patient was operated at the local area before admitted at this hospital where he was misdiagnosed. In this hospital the diagnosis was confirmed by histopathologically. Surgical resection was performed laparoscopically by a skilled surgical team. [J Shaheed Suhrawardy Med Coll, 2013;5(1):59-62]

Keywords: Gastrointestinal stromal tumor, GIST, sigmoid colon

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Introduction
Gastrointestinal stromal tumors (GISTs) are a subset of mesenchymal tumors. It has been established that GISTs arise from multi-potential mesenchymal stem cells. This accounts for less than 1.0% of all gastrointestinal tract tumors.

The incidence of GIST is approximately 10-20/million people/year. More than 90.0% of GISTs occur in adults over 40 years old though it has been reported in all ages, including children. The most common location of GIST is stomach (50.0-60.0%) and small intestine (30.0%-40.0%); however, five to ten percent of GISTs arise from the colon and rectum, and 5.0% are located in the esophagus. The clinical features of GIST are variable. Additionally, only 70.0% of the patients are symptomatic, while 20.0% are asymptomatic and 10.0% are detected at autopsy. The clinical signs and symptoms are related to the presence of a mass or bleeding. However, 10.0% remain asymptomatic due to small size (<2 cm) which are diagnosed incidentally. Bleeding comprises the most common symptom and it is attributed to the erosion of the gastrointestinal tract lumen. Bleeding occurring into the abdominal cavity leads to acute abdominal pain that usually ends up in emergency surgery. Common finding is the abdominal mass and produces the symptoms according to the location of GIST like dysphagia in the esophagus, biliary obstruction around the ampulla of Vater or even intussusception, in the small bowel. This present case report has been found in the tertiary care hospital in Dhaka.

Case Presentation
A 40 years old male patient was admitted in the Department of Surgery at Shaheed Suhrawardy Medical College & Hospital, Dhaka. He was normotensive, non diabetic, as well as non-asthmatic working as weaver hailing from north-west of Dhaka. He was admitted with the complaints of left lower abdominal lump for 3 months. The lump was gradually increasing in size and associated with occasional mild pain. The pain was dull aching in nature without any radiation of pain or presence of vomiting which was relieved by taking medications. Per rectal bleeding, mucous discharge, sense of incomplete evacuation, cough, haemoptysis, jaundice, weight loss or fever were absent. But the patient had a history of gradually increasing lower abdominal lump with pain in 2
years back and was underwent an operation 10 months back at the local area. On examination, the physique of the patient and the nutritional status were normal with no palpable accessible peripheral lymph nodes. On inspection of abdomen, a lower midline scar mark was found with no visible lump or peristalsis. On palpation, a non-tender, intra-abdominal lump was found in left iliac fossa with part of hypogastrium which was avoid in shape measuring about 8 cm by 10 cm. The surface was smooth with firm in consistency. Margin was ill defined which was moved in all directions. There is no ascites or organomegaly. Other systemic examination reveals normal finding. The reports of different investigations were showed that haemoglobin was normal level (12.9 gm/dl) with normal ESR (15 mm in 1st hour). The total count of WBC was slightly raised (10,000/cmm) with neutrophilia (70%) with monocytosis (7%). The normal levels of random blood sugar (78 mg/dl), serum creatinine (0.9 mg/dl), routine examination of urine were reported as well. No abnormalities were detected in chest X-ray or ECG. Liver function test were normal (Serum Bilirubin 0.8 mg/dl and SGPT 27 U/L). Monteux Test was negative (7 mm). The tumor marker CEA (5.25 ng/ml) level was slightly raised. The ultrasonography of whole abdomen report showed that a lobulated mass lesion measuring about (12.7 × 8.8) cm is seen in left lumen & left side of pelvic cavity suggestive of gut related mass which may be GIST or Lymphoma with intra abdominal lymphadenopathy.

Axial CT scan of whole abdomen with pre- and post-contrast showed multiple sub centimeter (<1cm) non-enhancing areas noted along the mesentery in pelvic cavity. No ascites or pleural effusion could be seen. Prostate gland was mildly enlarged (4.7 cm × 3.2 cm).

Figure I: USG of abdomen showing intra-abdominal mass

Axial CT scan of whole abdomen with pre- and post-contrast showed multiple sub centimeter (<1cm) non-enhancing areas noted along the mesentery in pelvic cavity. No ascites or pleural effusion could be seen. Prostate gland was mildly enlarged (4.7 cm × 3.2 cm).

Figure II: CT scan of abdomen showing intra-abdominal mass (Sagittal plan)

Irregular thick walled bowel related mass was noted in right and left side of pelvic cavity which showed heterogeneous enhancement after contrast. No intraluminal contrast was visualized. Thus giving the impression of bowel related mass which may be intestinal tuberculosis or lymphoma or GIST with mesenteric lymphadenopathy. Core biopsy was performed and showed fibro-fatty tissue containing a few chronic inflammatory cells without any gastrointestinal stromal tumor. No malignancy was found as well. Colonoscopy showed normal colon up to hepatic flexure as well as the rectum and anal canal. After counseling patient was prepared laparoscopy followed by laparotomy after bowel was prepared by enema simplex. During per operative findings, there is a lobulated mass, measuring about 15×12 cm arising from wall of sigmoid colon and bleeds on touch. There is no ascites, no peritoneal seeding and liver is normal. Histopathology examination was performed and was shown a tumor made of spindle shaped stromal cells. The tumor cells are arranged in interlacing pattern. Overlying mucosa is not found with mitotic figures in 5-50/HPF. Tumor necrosis vascular invasion, lymphatic invasion, resection margin and perineural invasion were not found. The diagnosis was confirmed as gastrointestinal stromal tumor in sigmoid colon (GIST) in intermediate risk category. The definitive treatment was given by resection and anastomosis of sigmoid colon. The patient was advised to do follow up CT scan of abdomen 4 monthly for 3 years, 6 monthly for upto 5 years and yearly for life long.

Discussion
Gastrointestinal stromal tumors (GISTs) represent the most common mesenchymal neoplasms of gastrointestinal tract. However, the precise incidence of GIST is unknown because of the incomplete definition and classification. Over 90.0% of GISTs occur in adults over 40 years old with a median age of 63 years. In this case report the age.
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The CT scan report showed the size of the tumor of this patient (1 cm) which is very similar to the others findings. Macroscopically, GIST usually has an exophytic growth and as a result, the intra-operative appearance commonly resembles of a mass that is attached to the stomach, projecting into the abdominal cavity and displacing all the other organs. Usually mucosal ulceration is present in 50% cases though it is absent in the present case report.

Figure IV: Showing the resected mass with part of sigmoid colon

Diagnosis of GIST is often delayed, due to the vague nature of symptoms, for even 6 months after the onset of the symptoms. In this present case report surgical operation was performed in the local area with very limited resources to make it confirmed. In addition to that the present case report patient was poor who was wandering different places to get the proper treatment. Due to these reason the diagnosis was delayed in this patient. Although, the diagnostic procedure includes several examinations, like barium examination of the GI tract, computer tomography and angiography, none of them can establish the diagnosis. This is consistent with the present case report. The preoperative percutaneous biopsy should not be used because it is associated with a significant risk of tumor rupture or dissemination. The significance of endoscopic ultra-sound guided fine needle aspiration has been pointed out in several studies and the reported accuracy is 80.0%-85.0%. However the present case report section from core biopy has shown fibrofatty tissue containing a few chronic inflammatory cells with no gastrointestinal stromal tumor or malignancy which is inconsistent with other findings.

Regarding the management of GIST, surgical resection of the local disease is the gold standard therapy. During operation the goal is to complete resection of the disease with avoidance of tumor rupture. In the present case report surgical resection was performed by laparoscopically. The aim of the laparoscopic surgery is the same, aiming at the complete removal of the tumor,

Figure III: Showing the resected mass with part of sigmoid colon
avoiding tumor rupture, as peritoneal seeding affects
disease free period\textsuperscript{5,18}. It is very important that the tumor
size determines the survival and not the negative
microscopic surgical margins\textsuperscript{17}. Regional lymph node
resection has no value since GIST rarely gives rise to
lymph node metastases which was not performed in the
present case report. GISTs are soft and fragile, so a tumor
rupture must be avoided because it is associated with an
increased risk for development of peritoneal implants
rupture\textsuperscript{4}. For this reason laparoscopically removal is very
much important which has been followed in the present
case report. However, there is also evidence that
laparoscopic approach for the resection of tumour is
effective, with minimal morbidity and no reported
mortality\textsuperscript{19,20}. It is very important that during laparoscopic
resection, several factors including patient characteristics,
tumor size, location, invasion as well as the surgeon's
experience need to be taken under consideration\textsuperscript{19,20}. As it
is already mentioned, surgery is the preferred management
of GISTs, where feasible, complete surgical resection is
connected with 48-65\% five year survival\textsuperscript{21}. Partial
resection must only be performed in case of large tumors,
for palliative purposes or the control of symptoms or
complications, such as compression of other organs,
hemorrhage or even pain\textsuperscript{19}.

Conclusion

GISTs is not uncommon in Bangladesh. Proper evaluation
of the tumor should be carried out to give the appropriate
treatment without seeding due to rupture of the tumor
during operation. To avoid this condition laparoscopically
removal of GISTs has been recommended with skilled
hand surgeons which gives minimal invasion and
maximum better outcome.

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