LIVER METASTASIS OF A GASTROINTESTINAL STROMAL TUMOR OF LARGE BOWEL: CASE REPORT

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LIVER METASTASIS OF A GASTROINTESTINAL STROMAL TUMOR OF LARGE BOWEL: CASE REPORT (Abstract): Gastrointestinal stromal tumors (GISTs) are the most common mesenchymal malignancies of the digestive tract. We present the case of a 61-year-old male patient liver metastasis of a GIST with primary location at the level of sigmoid colon. Like in the majority of cases, the symptomatology in this patient has long been faint and when it became manifest, it was nonspecific. Imagery wise, the computer tomography (CT) scan was the most efficient, showing the origin of the tumor from large bowel, its dimensions, as well as the relations with the other abdominal viscera and the liver metastasis. Surgery in this patient was en-bloc, according to the principles of GIST and for the metastasis he followed treatment with Imatinib. The histological aspect is characterized by a proliferation of spindle cells positive for CD117 and CD34. Despite complete microscopic resection, the exhibit of liver metastasis remains an important relapse factor. Keywords: GASTROINTESTINAL STROMAL TUMOR, LARGE BOWEL, LIVER METASTASIS.

Initially believed to arise from smooth muscle cells, it is now known that gastrointestinal stromal tumors (GISTs) are malignancies that arise from the interstitial cells of Cajal, which are pacemaker cells found in the bowel wall (1).

They are defined pathologically as c-Kit-positive mesenchymal spindle cell or epithelioid neoplasms (2). The most common location of GISTs are stomach (60-70%), followed by the small intestine (20-30%), the rectum (5%) and the esophagus (<5%). Patients with GISTs are 70% symptomatic but mostly nonspecific, while 20% are asymptomatic and the tumors are detected incidentally and a part of cases are detected during autopsy. The most common symptoms of GISTs are nausea, vomiting, abdominal discomfort, bleeding from the gastrointestinal tract and weight loss. The most common
metastatic sites are the liver and peritoneum, whereas GISTs are rarely found to metastasize intracranially or to the lymph nodes, lungs or subcutaneous tissue (3, 4, 5). That being said, surgical resection is still the most important component in the treatment of resectable non-metastatic GISTs (6). Also, with the aforementioned advances made in the medical treatment of these tumors, there is the possibility of a future broadening of surgical indications to include patients with metastatic disease, but this currently remains investigational (7). Imatinib mesylate, a tyrosine kinase inhibitor, shows high clinical efficacy in advanced GIST (8, 9) and is now the standard treatment for unresectable and metastatic GISTs (10). The response to imatinib is known to depend on the mutation sites of the c-kit gene or the platelet-derived growth factor receptor alpha gene (11). The present article describes one case of liver metastasis in patient with GISTs of large bowel and reviews the relevant literature.

CASE REPORT
We report the case of a 61-year-old male patient. He presents pain in lower left abdomen what subside after defecation, accompanied by a quick sensation of fullness after meals and pollakiuria. These symptoms appeared in last three months, worsening progressively. Physical examination reveals lipomas in the abdominal region, chest, neck and limbs, painful left hypogastric region, a palpable tumor in the left iliac fossa, fixed to the deep anatomic plans, with a diameter of 15 cm and hepatomegaly.

We didn’t found any pathological laboratory tests except LDL-cholesterol 300 mg/dl and triglycerides 180mg/dl.

The patient’s medical history includes lipomatosis, dyslipidemia, and heart attack in 2005 with percutaneous transluminal angioplasty with stent, hepatic steatosis, and liver hemangiomas.

A week before admission in our hospital he was diagnosed in another medical service with left kidney stones and liver hemangiomas.

In our service he made an abdominal ultrasonography which shows a tumor with a maximum diameter of 15 cm, heterogeneous, with interior transonic images, which occupies the hypogastrum and left iliac fossa without being able to specify the origin (fig. 1).

The right hepatic lobe (segment V, VI, VIII) contains tree lesions hypoechoic, with peripheral halo, size 25mm, 35mm, 54mm and multiple lesions hyperechoic (segment III, IV, VII, VIII), well defined, size 5 to 18 mm without Doppler signal (fig. 2).

Fig. 1. Abdominal ultrasonography: tumor with a maximum diameter of 15 cm, heterogeneous, with interior transonic images, which occupies the hypogastrum and left iliac fossa.
Liver metastasis of a gastrointestinal stromal tumor of large Bowel: case report

Colonoscopy exam revels between 40 and 45 cm from the anus segmental venous dilatation with no other pathological lesions (fig. 3).

Computerized tomography shows a heterogeneous tumor size117/110/207 mm, situated intraperitoneally in left iliac fossa, located between ileum and sigmoid colon with intimate contact with them, well defined, with numerous necrosis areas inside. No intra-abdominal adenopathies noted (fig. 4).

In the liver describe the same benign lesions from the ultrasound exam with follow sizes: 17mm, 8mm and 15mm. At the VIII liver segment we detected a 9 mm lesion, between V and VI segments we founded a 29mm lesion and in the VI segment we detected two lesions by 20mm and 23mm suggestive of hepatic metastasis (fig. 5).

Surgery is approached with a median laparotomy. Exploration highlights the origin of the tumor in the sigmoid colon, with invasion to the ileum. The tumor is extremely hemorrhagic at the maneuvering. The tumor was en-bloc resected, with resection of a part of ileum and achievement of an enteroanastomosisys and a limited resection of the sigmoid colon because the tumor was started from the serous of the sigmoid colon and also achievement of a coloanastomosys. Surgical recovery was favorable.
Fig. 4. Computed tomography exam: heterogeneous tumor in left iliac fossa, well defined, with numerous necrosis areas inside.

Histopathological appearance of the surgical specimen in HE staining, we used the CD117 antibody (c-kit), as we know that this is a specific marker for GIST (fig. 6).

Another significant marker in the diagnosis of GIST is CD34 antigen. CD34 is a glycoprotein that facilitates the intercellular adhesion or the cellular adhesion to the stroma and it is also positive in the endothelium of blood vessels (fig. 7).

For the liver lesions there was no surgical treatment indication and the patient started treatment with Imatinib after 3 weeks from surgical intervention. After one month of treatment liver metastases were transformed into sharply circumscribed, non enhanced homogeneous lesions. After 6 months the aspect of the metastasis was the same.

Fig. 5. Computed tomography exam: hemangiomas and liver metastasis.
Liver metastasis of a gastrointestinal stromal tumor of large Bowel: case report

Fig. 6. Intense reaction of tumoral cells to this antibody CD117 in colon tissue.

Fig. 7. CD34 positive in the endothelium of blood vessels of colon.

**DISCUSSION**

Asymptomatic tumors diagnosed at a late stage, which is often the case, can be large on presentation. Prognosis for patients diagnosed with GIST depends on tumor size, mitotic rate, histopathological subtype and tumor location. That is why early diagnosis and R0 resection are the key factors for further treatment and good prognosis (12).

Colonic GIST is even rarer because many of the large bowel GISTs arise in the rectum. Owing to the lack of data on this rare malignancy, the clinical and pathological features of colonic GIST are still unclear (13).

Imatinib mesylate, a tyrosine kinase inhibitor, shows high clinical efficacy in advanced GIST (8, 9) and is now the standard treatment for unresectable and metastatic GISTs (10, 14).

**CONCLUSIONS**

We reported this case because gastrointestinal stromal tumors (GISTs) developing in the colon are rare. Our patients was symptomatic but mostly nonspecific, most common symptoms were nausea, vomiting, abdominal discomfort, bleeding from the gastrointestinal tract and weight loss and because of that he was diagnosed in the metastatic stage.
REFERENCES