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Lymph Node Metastases in Colonic Gastrointestinal Stromal Tumor: A Rare Case Report

Dr Suryajit Kr Singh[1], Dr Ajeet Kumar[2], Dr Anju Singh[3], Dr Guddi Rani Singh[4], Dr Amit Kumar Sinha[5], Dr Anshuman Sinha[6]

[1]*Senior Resident, Department of Pathology, IGIMSPatna*
[3]*Associate Professor,Department of Pathology, IGIMS, Patna*
[2,4,5,6] *Senior Resident, Department of Pathology, IGIMSPatna*

Abstract: *Gastrointestinal stromal tumor (GIST) is the most common mesenchymal tumor of the gastrointestinal(GI) tract. It most commonly arises in the stomach, followed by the small intestine, colorectum and the esophagus. GISTs may show as either spindled or epithelioid cells or a combination of both. It shows diffuse intraabdominal spread and liver metastasis while lymph node metastasis is extremely rare. Here we report a rare case of colonic GIST with intraabdominal lymphnode metastasis in a 46yrs old female.*

Keywords: *gastrointestinal stromal tumors (GISTs), pelvic mass,colonic GIST*

I. Introduction

Gastrointestinal stromal tumors (GISTs) represent the most common mesenchymal tumors of GI tract.These tumors are believed to arise from pacemaker interstitial cells of Cajal(1).Clinical manifestations of GISTs is variable and may be asymptomatic and are found incidentally during radiological study. Symptoms include abdominal mass, abdominal pain and gastrointestinal bleeding(2).They differ from other non-epithelial digestive tract tumors including leiomyomatous and neurogenic tumors on the basis of specific histological and immunophenotypic features. Identification of C-KIT (CD 117), a tyrosine kinase receptor differentiates them from leiomyomatous and neurogenic tumors(3). GISTs most commonly arise in the wall of stomach and classically described as well-circumscribed exophytic masses arising from the subserosal surface of the GI tract. It frequently spread to the liver and peritoneum, however lymphnode metastasis is rarely seen. Due to the rarity of nodal metastasis, Lymph Node (LN) dissection is not routinely performed (2).

II. Case history

A 46-years multiparous lady presented with abdominal pain, abdominal distension and altered bowel habits for 3months. Her medical,surgical and menstrual history was unremarkable. On physical examination she was found anaemic and asthenic. Computed tomography (CT) scan showed a large cystic mass lesion measuring 15x12cm with multiple septation and soft tissue nodules in pelvic region (Figure 1). Serum CA-125 levels were 72.8 U/mL (normal range $\leq$ 35 U/mL). An initial diagnosis of ovarian tumour was made based on the presence of large pelvic mass and elevated CA-125 levels. Laparotomy was performed and a soft cystic mass arising from mid point of transverse colon with multiple small masses on small bowel, colon, mesentry and peritoneum was found. After surgical excision specimen was sent for histopathological examination. Gross examination revealed a well-encapsulated mass of size 17x11x5 cm with attached colonic segment. Cut section of the mass was partly cystic with haemorrhagic friable solid area (Figure 2). Histologic sections showed sheets of moderately pleomorphic oval to spindle cells with eosinophilic fibrillary cytoplasm and also focally arranged in storiform pattern (Figure 3).Tumour was arising from serosal layer of the colon. Mitotis was occasional. There was no infiltration of the surgical margins, and six harvested lymph nodes showed metastatic deposit. CD117 (c-KIT) and CD34 were positive in immunohistochemical studies(Figure4). A diagnosis of high risk GIST of the transverse colon with lymph node matastasis was established. At present, she is receiving imatinib mesylate.

III. Discussion

Gastrointestinal stromal tumors (GISTs) are nonepithelial, mesenchymal tumors of GI tract first described by Mazur and Clark in 1983(4). They are more common in adulthood, with a peak incidence in the fifth and sixth decades of life. They occur most commonly in stomach (60–70%),followed by the small intestine(20–30%) but can occur in any portion of the alimentary tract including the omentum, mesentery, and peritoneum(5). In our reported case, the GIST was found in a 46-year old patient originating from the transverse colon. Clinical manifestations of GISTs is variable and depends on the size of the tumour. Based on their size and mitotic count they are stratified into following risk categories. Tumors less than 2 cm in size with a mitotic count < 5/50 in a high power field (HPF) are categorized as very low risk; tumors between 2-5 cm with

a mitotic count < 5/50 HPF are categorized as low risk; tumors < 5 cm in size with a mitotic count of 6–10/50 HPF or tumors with a size of 5–10 cm and a mitotic count of < 5/50 HPF are categorized as intermediate risk; and tumors > 5 cm with a mitotic count of > 5/50 HPF, tumors greater than 10 cm and any mitotic rate, and tumors of any size with a mitotic rate > 10/50 HPF are classified as high risk(6). Histologically there are three types of GISTs:- spindle cell type (most common), epithelioid cell type, and the mixed spindle-epithelioid type(6).Contrast-enhanced CT scan is the first choice imaging modality for patients with suspected abdominal mass but there are no specific CT findings for GIST tumors(7). Diagnosis of GISTs relies heavily on KIT/CD117 immunohistochemical staining, which can detect most GISTs except for a few 3% to 5% that harbors PDGFRA mutation. Newer staining against PKC theta and DOG-1 genes showed promising results but are not readily available. Tumor size, location, mitotic rate, and C-KIT and PDGFRA genotype are the major determinants of the malignant potential of the tumor, and have significant impact on prognosis(8). Tumors that were located in distal of stomach and with epitheliod histology also had higher rate for lymph node spread(9). The average survival rate is 5 years for patients presenting with localized primary disease while those presenting with metastatic or recurrent disease, the average survival rate is approximately 10–20 months.

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Legends

Figure 1 shows a large cystic mass lesion measuring 15x12cm with multiple septation and soft tissue nodules in pelvic region

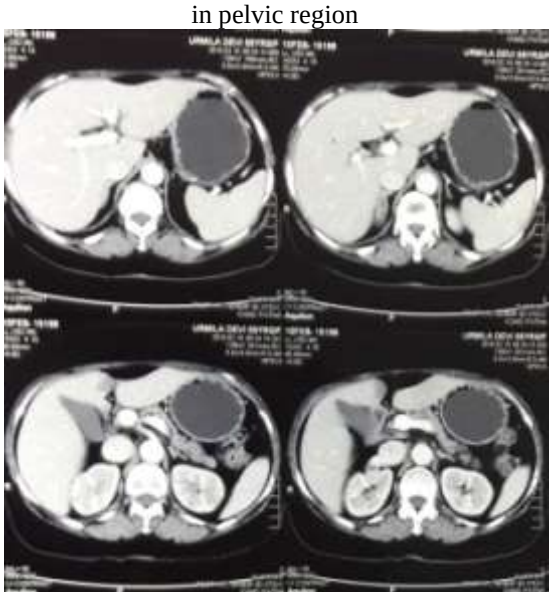

Figure 2 Cut section of the mass is partly cystic with haemorrhagic friable solid area

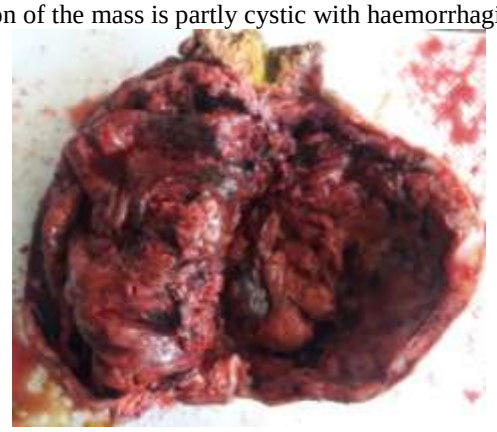

Figure 3 Histologic sections showed sheets of moderately pleomorphic oval to spindle cells with eosinophilic fibrillary cytoplasm

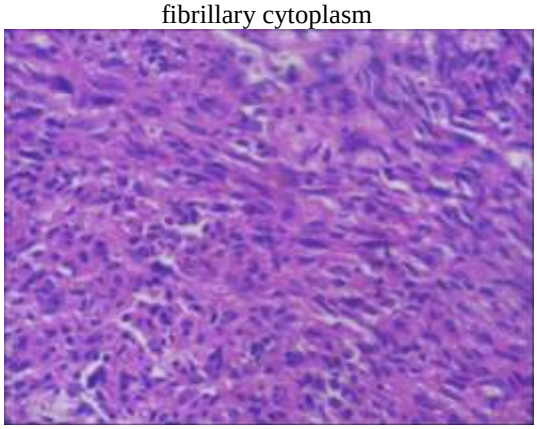

Figure 4 . CD117 (c-KIT) positive in immunohistochemical studies