

Case Series

Case series of gastrointestinal stromal tumors with lymph nodes metastasis: unusual presentations

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ABSTRACT

Gastrointestinal stromal tumor (GIST) is a rare cancer of the gastrointestinal tract, it occurred about 0.1-3.0% of all gastrointestinal neoplasms. Accounted about 10% of small-bowel tumors, and 10-15% of all sarcomas. Liver is a common hematogenous spread in GIST. However, metastasis to lymph nodes is consider extremely rare and routine lymph node dissection for GIST tumor was not recommended. Hence, we reported a case series of GIST that metastasize to lymph node along our experience in our center, hospital Taiping, Malaysia from 2010 until 2020. Hereby we report total of 3 out of 18 GIST cases that we encountered confirmed through histopathology the existence of lymph node metastasis.

Keywords: GISTs, Lymph nodes, Neoplasms

INTRODUCTION

Gastrointestinal stromal tumor (GIST) are mesenchymal tumors arising from the interstitial cells of Cajal. Mutation in KIT genes play a large role of which reported about 70-80% of all tumors and a number of platelet-derived growth factor receptor alpha (PDGFRA) mutation occurred about 30-40% patient with negative KIT tumors.¹ Common site of origin of tumor is stomach (39%) followed by small intestine (32%) and colorectal (15%). Common route of spread is through hematogenous to the liver and small number of lymph nodes metastasis was reported.² Hence, due to its rarity in lymph node metastasis, lymph node dissection in case of GIST was not routinely recommended in practice. However, we had encountered 3 out of 18 of GIST cases exhibit lymph nodes metastasis with the background of high mitotic rate activity.

CASE SERIES

Case 1

A 69-year-old male with underlying dyslipidemia. Initially presented to our center with dyspepsia and early satiety. Oesophagogastroduodenoscopy (OGDS) revealed a huge mass with typical central umbilication at the fundus of stomach. The biopsy of the mass revealed a c-KIT positive immunochemistry which confirmed it as a GIST. Preoperative computed tomography (CT) scan showed evidence of heterogenous hypodense liver lesion of varying size, largest at segment VII measuring about 3.4×2.6 cm.

Patient underwent proximal gastrectomy, en-bloc resection of tumor with splenectomy and diaphragmatic repair. Intraoperatively noted a large tumor arising from

the fundus of stomach that densely adhered to posterior abdominal wall, spleen, and diaphragm.

Post operative histopathological examination (HPE) from gastrectomy specimen confirmed existence of high-grade GIST (mitotic activity 30/50 hpf). Further dissection from the en-bloc specimen found a total of 28 lymph nodes harvested from greater and lesser omentum of which 2 out of 28 of it positive for nodal metastasis. There was evidence of perineural invasion however no lympho-vascular invasion noted.

Post operative patient developed complication with pulmonary embolism, anticoagulant therapy was initiated and subsequently was discharged well. However, he presented back after 4 months due to progression of disease and eventually succumbed to death due to his illness.

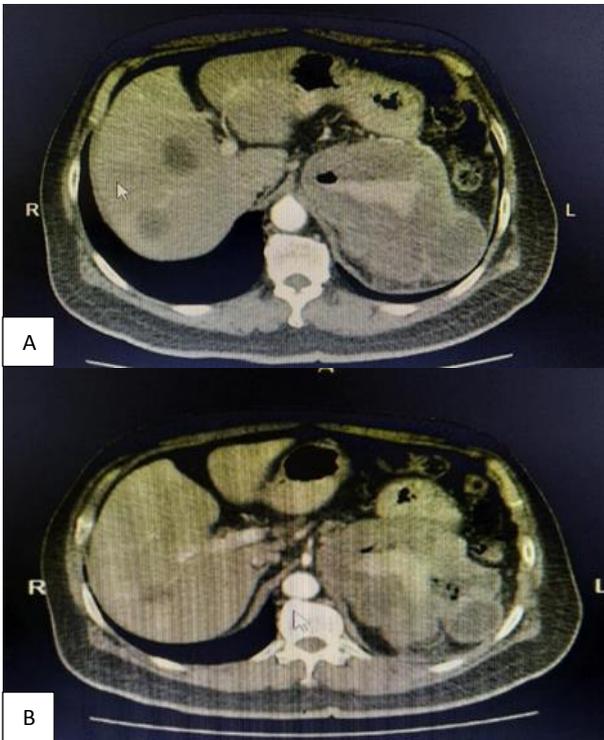


Figure 1 (A and B): CT scan of a large tumor arising from fundus of stomach with thickened stomach wall with evidence of liver metastasis.

Case 2

A 29-year-old female with no known medical illness. First presented to our center with a painless epigastric mass and anemia. OGDS revealed a central umbilicated mass from lesser curvature of the stomach. CT scan showed large exophytic mass arising from the lesser curvature of stomach, no distant metastasis particularly liver metastasis was encountered.

Patient underwent distal gastrectomy with Bilroth 1 reconstruction. Intra-operatively showed a large GIST

arising from the lesser curvature, just proximal to the pylorus with another existence of GIST tumor near the antrum of stomach.

Post operative HPE showed a high-grade GIST (mitotic activity 9/50 hpf). A number of 31 lymph nodes harvested from the lesser omentum and 3 out of 31 of lymph nodes confirmed the existence of nodal metastasis. No lympho-vascular or perineural invasion noted.

Post operatively patient was discharged well and subsequent follow up, patient did a positron emission tomography (PET) scan showed no evidence of active or recurrence GIST. We referred her afterward to oncologist for initiation of imatinib therapy.

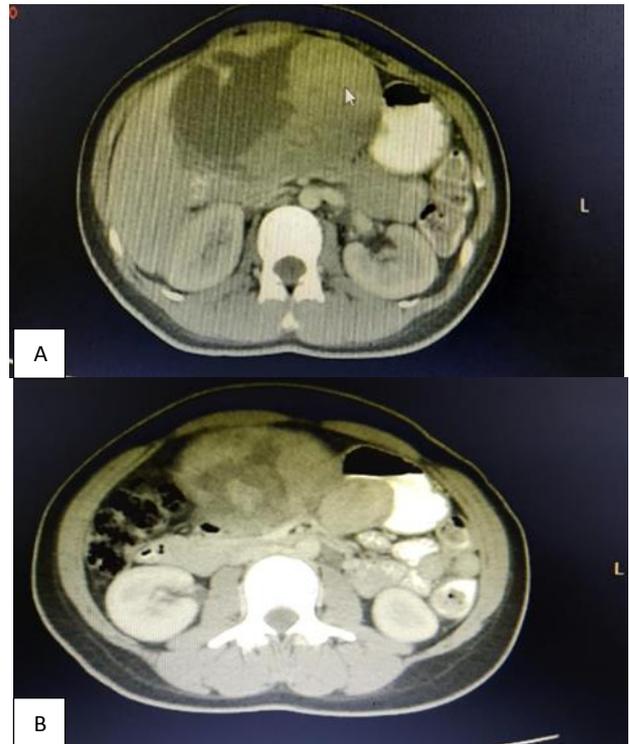


Figure 2 (A and B): CT scan of large tumor arising from the lesser curvature of the stomach.

Case 3

A 76-year-old female, first presented to our center with severe abdominal pain and peritonism. Our initial diagnosis was a perforated viscus and hence patient underwent for laparotomy.

Intraoperatively noted a tumor encasing the small bowel with a perforation at 25 cm from duodenojejunal junction. Gross contamination intraoperatively noted with food particles and hence patient underwent resection of small bowel tumor with primary anastomosis.

Post operative HPE of the small bowel revealed a high-grade GIST (mitotic activity of 30/50 hpf). Peri-ileal

lymph node was harvested from the specimen showed 1 out of 7 lymph nodes showed nodal metastasis.

Post operative patient was discharged well however she defaulted our follow up. Subsequent she presented back after 1 year with abdominal pain. CT scan was done showed multiple abdominal mass with nodal metastasis may represent recurrence of GIST. However, patient prognosis was poor and subsequent succumbed to death due to her illness.

DISCUSSION

GIST is defined as cellular spindle cell, epithelioid, or pleomorphic mesenchymal tumor of the gastrointestinal (GI) tract. Common presentations are gastrointestinal bleeding are hematemesis, hematochezia, melena or a positive stool blood test (55.8%), abdominal pain (38.5%), weight loss, or a general feeling of weakness and dizziness (each 13.5%).³

In our center 44% (n=8) of our GIST patient presented with symptom of bleeding (coffee ground vomitus, melanic stool), followed by abdominal pain 28% (n=5), abdominal mass 17% (n=3) and subsequent 5% (n=1) for dyspepsia and for altered bowel habit.

Lymph node spread in GIST are rare same goes to metastasis to the lungs, bone and peritoneum.^{2,4} Thus routine lymphadenopathy are not recommended in comparison with operating in gastric adenocarcinoma.

Agaimy et al described in their observation of low frequency of nodal metastasis in GIST however found out that those positive nodes were commonly in those <40 years old with gastric location and mixed/epithelioid type of morphology.⁵

In another study described by Carney et al found that about 14 out of 79 patients with Carney triad, a rare chronic disease with triad of GIST, pulmonary chondroma and extra-adrenal paraganglioma, do exhibit lymph nodes metastasis in their primary surgery. This accounted about 18% of Carney triad patient presented with lymph node metastasis.⁶

Either lymph nodes metastasis carrying significance prognostic factor in GIST remained controversial. Valadao et.al described in their study that lymph node metastasis had no prognostic significance for overall and disease-free survival.⁷

However, another retrospective analysis with surveillance, epidemiology, and end results (SEER) by Gaitanidis et al in 140 patients with lymph node metastasis (out of 1430 patients diagnosed as GIST) concluded that lymph node metastasis as an independent predictor of worse overall survival in patient with distant metastatic disease and worse overall survival in patients

with small intestinal tumors and also with patient with colorectal tumours.⁸

Current national comprehensive cancer network (NCCN) guideline on GIST doesn't recommend routine lymphadenectomy in view of low incidence nodal metastasis in GIST, however resection of pathologically enlarged lymph nodes should be consider in case of patient with well-known SDH-deficient GIST or known translocation-associated GIST.⁹

In another study conducted by Li et al in-SEER analysis in 3816 GIST patients found that routine lymphadenectomy has poor overall survival and cancer-specific survival in comparison with non-lymphadenectomy group. One of the hypotheses stated that unnecessary lymphadenectomy can destroy the immune microenvironment of the normal lymph node progressing to a high risk of recurrence and second it might due to its association with surgical trauma which increase post operative morbidity and mortality.¹⁰

Our cases series even though will not conclude the prognosis in lymph node metastasis. However, in our observation showed that all our cases with lymph node metastasis showed high grade mitotic activity with 2 out of 3 our cases showed progression of disease and eventually succumbed to their illness.

Apart from it, we do not routinely performed lymphadenectomy to GIST patient. Most of lymph nodes harvested is from the en-bloc resection of tumor either from the stomach or the small bowel. Our data reports are not enough to conclude the necessity to perform lymphadenectomy to patient.

CONCLUSION

In conclusion we reported a case series of three cases of GIST with lymph node metastasis in our center. Although lymph node metastasis is rare and routine lymphadenectomy was not recommended, we should be highly suspicious for lymph node metastasis especially in case of distant metastasis. More analytic data analysis or interventional study design is required in comparing the necessity of lymphadenectomy especially in group of distant metastases that are fit for operative intervention and the prognosis of lymph node metastasis in GIST patient.

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