International Surgery Journal
Bishnoi S et al. Int Surg J. 2023 May;10(5):944-947
http://www.ijsurgery.com
pISSN 2349-3305 | eISSN 2349-2902

DOI: https://dx.doi.org/10.18203/2349-2902.isj20231397

Case Report

Easier way of managing gastric gastrointestinal stromal tumor located at unusual site: a case report

Sunil Bishnoi, Vandana, Rahul Pusuluri*, Ashish Garg, Benazeer Hena Mohammad

Department of Surgery, Lady Hardinge Medical College, New Delhi, India

Received: 07 March 2023
Accepted: 07 April 2023

***Correspondence:**
Dr. Rahul Pusuluri,
E-mail: drprahul@yahoo.com

Copyright: © the author(s), publisher and licensee Medip Academy. This is an open-access article distributed under the terms of the Creative Commons Attribution Non-Commercial License, which permits unrestricted non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited.

ABSTRACT

Intraluminal gastric gastrointestinal stromal tumors (GISTs) located at the posterior wall and near the gastroesophageal (GE) junction represent a surgical challenge. We present a easier laparoscopic assisted mini laparotomy approach for resection of gastric GISTs of such location. A 42 years old female presented with history of Malena and anemia. Endoscopic and contrast enhaced computerised tomography (CECT) scan findings were suggestive of GIST arising from posterior wall along lesser curvature in proximal body of stomach. We planned her for surgical resection of tumor. During laparoscopy, posterior wall stomach was completely mobilised after dividing gastrocolic and phrenogastric ligaments. Due to unfavourable location of tumor in posterior wall and proximity to GE junction, accessibility for negative resection margin was difficult, so we did mini laparotomy (approx 5 cm midline incision) and already mobilised stomach is delivered out, wedge resection of tumor done after assuring resection margin with direct palpation. GISTs of the posterior wall and in close proximity to the GE junction can be safely resected with laparoscopic assistance using such an approach. This technique is useful alternative in unavailability of simultaneous laparoscopy with endoscopy as required in laparoscopic and endoscopic cooperative surgery in such locations of tumor.

Keywords: Gastrointestinal tumor, Posterior wall of stomach tumor, Esophagogastric junction laparoscopic

INTRODUCTION

Gastrointestinal stromal tumors (GISTs) are the most common sarcomatous tumors of gastric submucosa.[1] They derived from the interstitial cells of cajal, an intestinal pacemaker cell. They can involve any part of the GI tract, but most commonly found in the stomach (40-60%), small intestine (30%) and colon (15%).

Gastric GISTs can manifest at any age, but usually manifest in patients older than 50 years. Generally, have equal male to female ratio or slight male predominance. Upper gastrointestinal bleeding (usually malena or less commonly frank hematemesis) and abdominal pain are the most common primary presenting symptoms. Tumor rupture with intra-abdomial haemorrhage is uncommon, but when occurs, it require emergent surgical intervention. However, most of the patients are asymptomatic and diagnosed incidentally during endoscopic assessment or imaging performed for other indications, so the true incidence of this disease may be difficult to determine accurately.

At present, surgical resection with negative margin remains the only chance for cure. Both open and laparoscopic approaches have been described. The feasibility and safety of laparoscopic approaches have been established especially for lesion less than 5 cm in size.[2]

Laparoscopic approach to resection of gastric stromal tumors is tailored to the location of tumor in the stomach. In most circumstances, wedge resection is typically performed, especially for tumors in the anterior wall, and

greater curvature. However, the difficulty in accessing tumors located in the posterior wall, lesser curvature and near GE junction (GEJ) requires alternate approaches such as: transgastric, combined endoscopic-laparoscopic in order to preserve function with good oncological outcomes.

We present a laparoscopic with mini laparotomy approach, especially for those neoplasms located in the posterior wall adjacent to the GE junction. The aim of this technique is to provide a simplified method that provides good oncologic, functional and cosmetic outcome.

CASE REPORT

A 42 years old female, presented with history of melena and generalised weakness for one month. Patient didn't have any history of abdominal pain, vomiting, hematemesis. Her medical history was unremarkable and she has not recently used non steroidal anti inflammatory or steroid drugs. History of chronic liver disease and peptic ulceration were absent. Pallor was present on physical examination and abdominal examination was normal. Blood tests revealed a hemoglobin level of 7 g/dl, then one unit of packed red blood cells was transfused. Patient underwent abdominal Contrast Enhanced Computerised Tomography (CECT) scan. The images showed a well defined exophytic heterogeneously enhancing mass of size (5.7×4.4×4.7) cm, arising from the lesser curvature of the body of stomach, which was suggestive of mesenchymal tumor likely GIST.

She underwent to upper GI endoscopy under sedation. A polypoidal growth with central ulceration, of approximate size of 3.5×1.5 cm, seen along proximal body near lesser curvature. Endoscopic biopsy from growth revealed submucosal growth?

Based on CECT abdomen and endoscopy findings, the diagnosis of GIST rendered. In view of unfavourable location of tumor along lesser curvature in proximal body and chances of major gastric resection, patient started on neoadjuvant imatinib therapy to downstage and increase likelihood of gastric preservation.

After 8 months of Imatinib therapy, CT scan imaging was suggestive of partial response. Tumor of size (4.2×3.7×4) cm was arising from lesser curvature and posterior wall of proximal body of stomach.

Patient was planned for surgical excision of tumor. She underwent laparoscopy, ports positioned as depicted. After diagnostic laparoscopy, stomach is inspected to confirm exact position of tumor. Greater omentum was divided along greater curvature by dividing gastroepiploic and short gastric vessels, thus exposing posterior gastric wall. Phrenogastric ligament was divided and posterior wall of proximal stomach was made completely free. Tumor bulge was visualised in posterior wall and near greater curvature in proximal stomach.

Due to limited access to ascertain clear margins for resection and difficulty in placing endoscopic stapler because of unfavourable location of tumor in posterior wall along greater curvature and proximity to GE junction; decision was made of mini laparotomy. Via a approximately 5 cm mini laparotomy incision, already mobilised stomach is delivered out wedge resection of tumor done after assuring resection margin under direct palpation and ensuring patent lumen at GE junction by inserting boogie before firing with linear stapler. Postoperative period was uneventful. Histopathological findings suggestive of GIST, spindle cell type, with low histological grade and 1-2 mitotic figures/50 hpf.

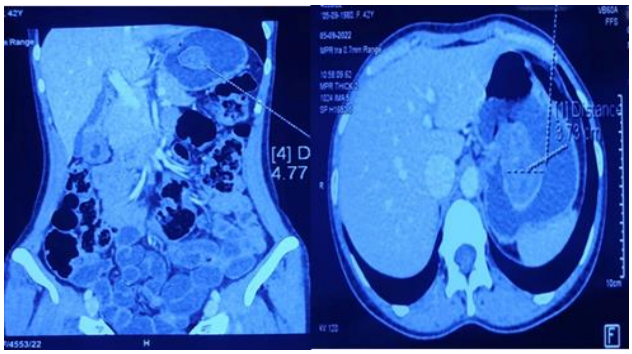

Figure 1: CECT abdomen showing gastric GIST in sagittal and cross section section images.

Figure 2: Endoscopic view of gastric GIST.

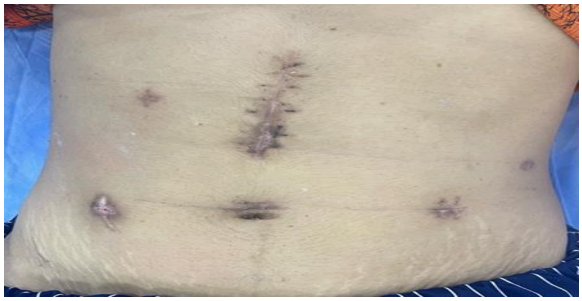

Figure 3: Laparoscopic port positions and mini laparotomy incision.

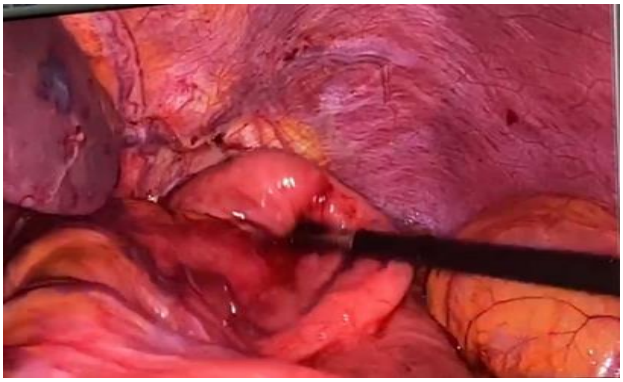

Figure 4: Laparoscopy showing GIST mass near GE junction over posterior wall of stomachs.

Figure 5: Midline mini laparotomy with mass.

Figure 6: Resected mass (stappled wedge resection).

DISCUSSION

Laparoscopic wedge resection is widely accepted as a choice of treatment for GIST, especially for tumors in the anterior wall and greater curvature. However, tumors on the posterior wall and near GE junction remain difficult to access margins for resection and difficult to resect.[3-5]

Several laparoscopic approaches have been described for the surgical treatment of gastric GIST near the GE junction or posterior wall. These approaches include tumor enucleation, exogastric wedge resection, transgastric tumor-everting resection, intragastric tumor everting resection, laparoscopic and endoscopic cooperative surgery and esophagogastrectomy.[6-8]

The optimal approach to GISTs located near GE junction is not well defined. Such tumors have been reported as the reason for conversion, planned open procedure, and exclusion indication for laparoscopic approach.[9]

Reported laparoscopic techniques for this specific location are few, may be due to the complex location and this undoubtedly requires the best oncologic result with anatomic and functional preservation. This complete laparoscopic mobilization of the stomach and extracorporeal wide local excision of tumor by mini-laparotomy incision is simpler technique which is useful in resource limited conditions like unavailability of simultaneous endoscopic facility.

CONCLUSION

Moreover, this type of resection respects the oncologic principle of no-touch with no need to open the stomach and can become an option for surgeons who treat this neoplasm.

This technique is effective in terms of treatment of tumors larger than 5 cm, located in posterior wall stomach near GE junction and preventing proximal gastrectomy with adequate margins.

Funding: No funding sources
Conflict of interest: None declared
Ethical approval: Not required

REFERENCES

1. Perez E, Livingstone A, Franceschi D. Current incidence and outcomes of gastrointestinal mesenchymal
2. tumors including gastrointestinal stromal tumors. J Am Coll Surg. 2006;202:623-9.
3. Ismael H, Ragoza Y, Caccitolo J, Cox S. Optimal management of GIST tumors located near the gastroesophageal junction. International J Surg. 2016; 25:91-6.
4. Xu X, Chen K, Zhou W, Zhang R, Wang J, Wu D et al. Laparoscopic transgastric resection of gastric submucosal tumors located near the esophagogastric junction. J Gastrointest Surg. 2013;17:1570-5.
5. Liao YT, Yang CY, Lai IR, Chen CN, Lin MT. Laparoscopic resection for submucosal tumors near the esophagogastric junction: feasibility and short-term outcome. Surg Innov. 2013;20:478-83.
6. Siow SL, Mahendran HA, Wong CM. Laparoscopic transgastric resection for intraluminal gastric gastrointestinal stromal tumors located at the posterior wall and near the gastroesophageal junction. Asian J Surg. 2017;40:407-14.

7. Ntourakis D, Mavrogenis G. Cooperative laparoscopic endoscopic and hybrid laparoscopic surgery for upper gastrointestinal tumors: current status. World J Gastroenterol. 2015;21:12482-97.
8. Lamm SH, Steinemann DC, Linke GR, Eucker D, Simon T, Zerz A et al. Total inverse transgastric resection with transoral specimen removal. Surg Endosc. 2015;29:3363-6.
9. Wilhelm D, von Delius S, Burian M, Schneider A, Frimberger E, Meining A et al. Simultaneous use of laparoscopy and endoscopy for minimally invasive resection of gastric subepithelial masses - analysis of 93 interventions. World J Surg. 2008;32:1021
10. Lee CH, Hyun MH, Kwon YJ, Cho SI, Park SS. Deciding laparoscopic approaches for wedge resection in gastric submucosal tumors: a suggestive flow chart using three major determinants. J Am Coll Surg. 2012;215:831-40.

Cite this article as: Bishnoi S, Vandana, Pusuluri R, Garg A, Mohammad BH. Easier way of managing gastric gastrointestinal stromal tumor located at unusual site: a case report. Int Surg J 2023;10:944-7.