

Case Report

Laparoscopic Sleeve Resection of Gastric Fundal Gastrointestinal Stromal Tumour: A Case Report

Usman Mohammed Bello¹, Saminu Muhammad², Nura U. Aliyu².

¹ Department of Surgery Aminu Kano Teaching Hospital Kano. ² Department Of Surgery Bayero University Kano/ Aminu Kano Teaching Hospital Kano

*Correspondence: Dr Usman Mohammed Bello. Usman Mohammed Bello Tel: +23480368933, Email: belloum01@yahoo.co.uk

Submitted: 8 January 2022. Published: 12 March 2023

ABSTRACT

Gastrointestinal stromal tumours (GISTs) are rare tumours of mesenchymal origin that arise from interstitial cell of Cajal. They are all considered potentially malignant especially those >1cm in size. Commonly has hematogenous mode of metastasis, therefore lymph node dissection usually not performed after the adequate resection with good margin of 1-2 cm. This index case was a 56year old man who was managed for locally advanced gastric fundal GISTs and had laparoscopic wide local excision of the tumour.

Keywords: Gastrointestinal stromal tumour, Laparoscopic resection, sleeve resection.

INTRODUCTION

Gastrointestinal stromal tumors (GISTs) are rare neoplasms.^[1] They represent only 0.1% to 3% of all gastrointestinal malignancies.^[2] It's the most common gastrointestinal mesenchymal tumor arising from interstitial cell of cajal.^{1,2} GISTs typically occur in middle-aged and elderly individuals, with a median age at presentation of approximately 60yrs.^[3] Their endoscopic appearance is that of a submucosal mass with normal overlying mucosa.^[4] If these tumors become large, however, they may present with symptoms of abdominal pain and bleeding.¹

All GISTs should be considered potentially malignant, especially those >1 cm in size, tumor size and mitotic index are the most important prognostic variables.^[3] Site of origin is also prognostic, with gastric GISTs behaving less

aggressively than intestinal GISTs.^[5] When GISTs do metastasize, they do so by a hematogenous route (most commonly to peritoneal surfaces and the liver).^[2] Therefore, lymphadenectomy is typically not performed at the time of gastric resection for GIST.^[5] Additionally, unlike adenocarcinoma, GISTs do not present with an intramural growth pattern and thus gross margins of 1 to 2 cm are deemed adequate for resection of a GIST.^[4]

Due to the less radical nature of surgery required for appropriate oncologic resection of these tumors as compared to adenocarcinoma of the stomach, minimally invasive surgical techniques have become widely accepted as an appropriate and acceptable operative approach for these tumors.^[6] Chemotherapy in GISTS is given with tyrosine kinase inhibitors like imatinib or sunitinib. These

Access to the article



Website: www.jmbsr.com.ng

eISSN: 2971-7833

pISSN: 2971-7108

 10.5281/zenodo.7744925

How to cite this article

U M Bello, S Muhammad, N U Aliyu. Laparoscopic Sleeve Resection of Gastric Fundal Gastrointestinal Stromal Tumour: A Case Report. *J Med & Bas Sci Res.* 2023;4(1-2):127-130. DOI: 10.5281/zenodo.7744925

agents act by blocking signals via C-kit and PDGFRA receptors.^[7] It is given preoperatively as induction therapy for irresectable or borderline resectable tumors or as adjuvant therapy in patients having high risk of recurrence and metastatic disease. Sunitinib is second line therapy which is given in imatinib resistant cases.^[7]

CASE PRESENTATION

The patient was a 56 years old man who presented with complaints of recurrent hematemesis and melena of 4 years duration. The haematemesis occasionally contained clots and associated with passage of melena stool. There was history of

epigastric pain dull in nature and non radiating.No history of change in bowel habit, no easy satiety, no anorexia or weight loss, no chest pain or abdominal distention. No swelling in any part of the body and no jaundice. Current episodes started two weeks ago and patient was transfused with 3 unit of blood.

Patient was not a known hypertensive or diabetic, and does not smoke cigarette or ingest alcoholic beverages.

Examination revealed a middle aged man, not pale, not dehydrated, anicteric, no pedal edema and no significant peripheral lymphadenopathy. His vitals were normal, chest and abdominal examination revealed normal findings.

Abdominal CT scan revealed a gastric fundal mass that was well circumscribed, and upper gastrointestinal endoscopy showed huge

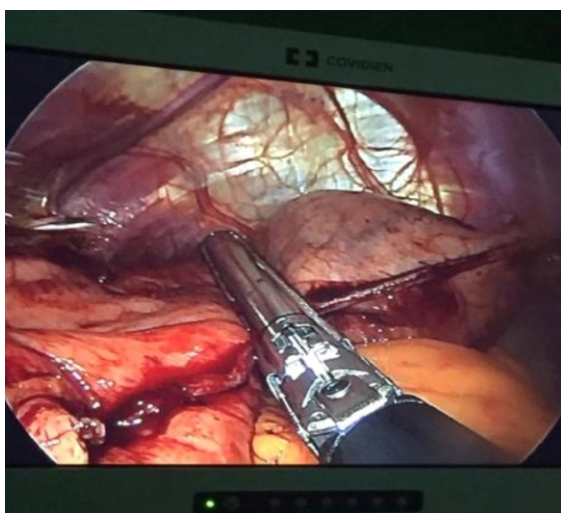


Figure: shows the mass resected with Endo GIA stapler (Original)



Figure 3 shows the resected mass (original)

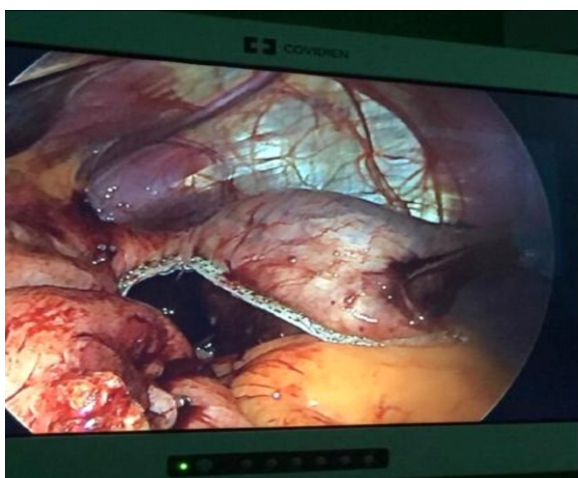


Figure 2: shows the mass With stappled line in situ (original)



Figure 4 shows the the port sites sutured with umbilical port Site extended for tissue retrieval (original)

umblicated fundal mass with evidence of recent bleeding, biopsy was taken for which the histology revealed an intact mucosa devoid of erosion and ulceration, lamina propria was inflamed and show foci of lymphoid follicles with prominent germinal center, however no malignant features were seen. Other baseline investigations which included full blood count, urea electrolytes and creatinine, clotting profile and echocardiography were all within normal range.

Informed consent was obtained the patient was prepared for laparoscopic wide local excision of the tumour. Intraoperative findings included well circumscribed mobile mass at the fundus of stomach and hiatus hernia (Figure 1).

Endoscopic linear cutting (Endo GIA Stapler, Covidien Inc USA) stapler was applied and the tumour was resected along with 2cm normal margin and placed into a retrieval bag and specimen retrieved via extended umbilical port sites (Figure 2, 3 and 4). The hiatal hernia was repaired by approximation of the crura using non absorbable sutures by intracorporal suturing techniques.

Surgical field irrigated and suctioned, 12mm ports sites were closed in layers (the fascia and skin) and the 5mm ports had only skin closed

Patient recovered from anesthesia immediately and was move to the ward. He was placed on intravenous fluids, analgesics, omeprazole and antibiotic. He did well and was commenced on graded oral sips on first operative day one. Patient was discharged on post operative day 3 on oral antibiotics, omeprazole and analgesics. Histology of resected specimen showed features of gastrointestinal stromal tumour with negative resection margins, immunohistochemistry shows CD 117 positivity. Presently he is on adjuvant Imatinib treatment

DISCUSSION

The goal of surgery for GIST is to perform a margin-negative resection.^[5] Wide margins

beyond a R0 resection have not been definitively linked with improvements in survival or recurrence, particularly in the era of effective medical therapy.³ There are also no data indicating that patients with an R1 (microscopically involved) resection require re-excision.^[2]

Laparotomy has been standard in GIST surgery; now, laparoscopic surgery is also considered the standard procedure for surgery in cases of small GISTs less than 5 cm.^[6] Laparoscopic surgery for GISTs has been shown to be less invasive, less painful, and have a faster postoperative recovery and better cosmetic outcomes than open surgery, with similar oncologic prognosis.^[3] In laparoscopy, concomitant use of endoscopy may facilitate securing oncological margins and adequate patency of the remnant gastrointestinal lumen.^[1]

One of the typical surgeries includes laparoscopic endoscopic cooperative surgery (LECS) and related procedures, which are feasible and safe in short-term outcomes and have similar oncological outcomes to those of open surgery after long-term follow-up.^[2] These procedures benefit organ function preservation by minimizing resection of normal organs in addition to being less invasive.^[3] They may work for surgery of GISTs near the esophagogastric junction (EGJ) or pylorus, although surgery itself is technically demanding in these locations.^[7] laparoscopy alone was done in our patient due to absent endoscopic facilities in our theatre, more so there was adequate space from the oesophagogastric junction.

Initially, laparoscopic surgery is predominantly performed for GISTs that are smaller than 5 cm, but currently, it is applied to GISTs larger than 5 cm.^[6] In our patient the size of the resected specimen was 7cm. Several retrospective studies and their meta-analyses suggest that laparoscopic surgery for large GISTs shows similar operation times, and less blood loss, postoperative morbidity, and shorter in-hospital days than open surgery.^[4]

Risk assessment in localized GISTs should be done, aim to identify GISTs likely to recur after

surgery, hence, to identify GISTs requiring multidisciplinary treatment and/or intense follow-up.^[3] Tumor size, location, and mitotic count of tumor cells under a microscope are well-established independent prognostic factor. Using the Gold's nomogram in the stratification systems, size was categorized as <2 cm, 2~5 cm, 5~10 cm, and >10 cm, and mitosis was categorized as <5/5 mm², 5~10/5 mm², > 10/5 mm². However, these factors are continuous variables showing a non-linear relationship with recurrence rate.^[6]

Conclusion: our early experience has shown that laparoscopic resection of Gastric GISTs is feasible in select patients though at substantial cost due to need for laparoscopic staplers .

Conflict of interest: None

REFERENCES

1. Are W, Stromal G. About Gastrointestinal Stromal Tumor What Are Gastrointestinal Stromal Tumors ? Am cancer Soc. :1–10.
2. Žokalj I, Čulinović-čaić R, Magaš Z, Pavčec Z, Saghir H, Igrac J, et al. Gastric gastrointestinal stromal tumour. RadiolOncol. 2008;42(November):187–95.
3. Altintas Y, Bayrak M. Surgery Research and Practice Gastrointestinal Stromal Tumor : Diagnosis and Management. Int J Surg Res Pract. 2019;6(1):1–9.
4. Abbas F, Dar WR, Latief M, Farooq S, Parry MA, Ziaulhaq P, et al. Journal of Molecular Imaging & Gastrointestinal Stromal Tumors : A Review. J Mol imaging Dyn. 2016;6(1):1–3.
5. Parab TM, Derogatis MJ, Boaz AM, Grasso SA, Issack PS, Duarte DA, et al. Gastrointestinal stromal tumors : a comprehensive review. J GastrointestOncol. 2019;10(1):144–54.
6. Gervaz P, Huber O, Morel P. Surgical management of gastrointestinal stromal tumours. Br J Surg. 2009;96:567–78.
7. Nishida T, Yoshinaga S, Takahashi T, Naito Y. Recent Progress and Challenges in the Diagnosis and Treatment of Gastrointestinal S t r o m a l T u m o r s . <http://www.mdpi.com/journal/cancer>. 2021. p. 1–22.