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# Laparoscopic Wedge Resection of Gastric Stromal Tumor (GIST)

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## ABSTRACT

**Introduction:** Laparoscopic treatment in general, in recent age has proven that it is well associated with low morbidity, mortality, fast recovery, less pain and sound oncologic outcomes. Recent reports from the National Comprehensive Cancer Network (NCCN) GIST Task Force and the GIST Consensus Conference under the auspices of The European Society for Medical Oncology (ESMO) show that laparoscopic resection may be used for small gastric GISTs (< 2 cm in size). **Case report:** We report, all the benefits of laparoscopic approach which include short hospitalization, less pain, better cosmetic effect and good oncological outcome, in this case report of 60 year old female patient with gastric GIST larger than 2 cm.

**Key words:** laparoscopic resection, GIST.

## 1. INTRODUCTION

Gastrointestinal stromal tumors (GISTs) are rare mesenchymal smooth muscle neoplasms. Approximately 60-70% are located in the stomach but can arise anywhere within the gastrointestinal tract. They are originating from the interstitial cells of Cajal or their stem cell precursors. The majority of GISTs (approximately 95%) express the CD117 antigen (KIT), a proto-oncogene product; 85-95% of these neoplasms have mutations in the c-KIT gene; only 5-7% has mutations in platelet-derived-growth factor a (PDGFRa). Often they are asymptomatic and found during examinations for other reasons. Usually they present themselves with abdominal pain and bleeding (1).

Diagnostic work up can be changing and consists of endoscopy, ultrasonography, computed tomography and/or magnetic resonance exam. Endoscopy often fail to detect sub-mucosal and extraluminal GIST, and a biopsy specimen is often negative. Fine-needle aspiration (FNA), performed under the guidance of ultrasound or computed tomography, have been developed as reliable method to obtain tumor cells, and have allowed the preoperative diagnosis of GIST by histological examinations with immunohistochemistry (2, 3).

Laparoscopic wedge resection could be considered as a procedure of choice and a valid alternative to the conventional open approach for the resection of gastric Gastrointestinal stromal tumors (GISTs) smaller than 2 cm;

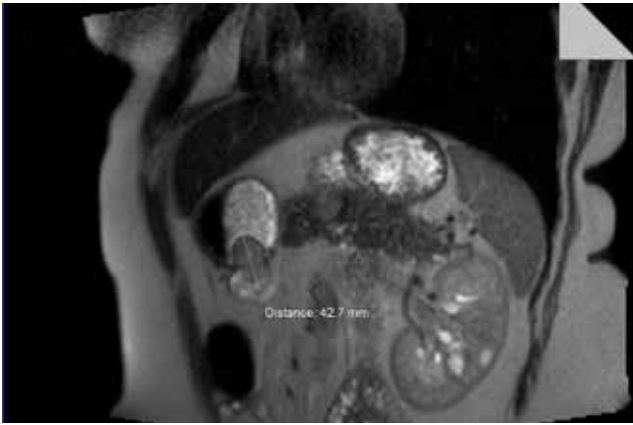
Recent reports from the National Comprehensive Cancer Network (NCCN) GIST Task Force and the GIST Consensus Conference under the auspices of The European Society for Medical Oncology (ESMO) show that laparoscopic resection may be used for small gastric GISTs (< 2 cm in size) (4).

The development of endoscopic stapling devices and the evidence that laparoscopic resection of GISTs is effective with minimal morbidity and no reported mortality (5).

There is still debate regarding the most appropriate operative approach for larger GISTs. Surgical resection with free margin is the gold standard treatment for GIST lesions and complete surgical resection is the only curative treatment of GISTs (6).

## 2. CASE REPORT

We present a 65 years old female patient admitted to hospital due to numerous vomiting, epigastric discomfort and loss of appetite. Ultrasound and endoscopy revealed a prominence into gastric lumen but endoscopic biopsy came negative for malignant disease. CT scan showed hyperdense extraluminal mass that protrudes to gastric lumen located and originating from posterior wall of stomach, but no signs of liver metastases, peritoneal dissemination and ascites. Magnetic resonance (Figure 1) with contrast confirmed CT scan findings and showed no



**Figure 1.** Magnetic resonance GIST with contrast



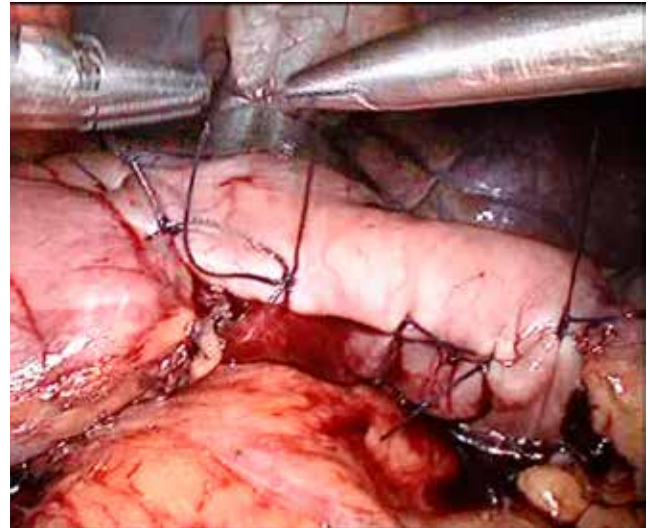
**Figure 2.** Gastric stromal tumor (GIST) attachment to vascular or other abdominal structures. Patient was informed about laparoscopic approach and gave informed consent.

*Surgical technique*

She underwent laparoscopic wedge resection using three ports and linear stapling (Figure 2). Resection stapler line was oversewn by intracorporeal second line using 3-0 Vycril (Figure 3). Extraction was done by Endobag through umbilical port site (Figure 4). Duration of operation was 65 minutes. There was no postoperative complication and patient was discharged on 5th day. Pathohistological finding confirmed GIST, and his size was 3,5x5x3,5 cm with mitotic activity of 1 mitose per 50 High Power Field. Immunohistochemical staining was positive for DOG-1 and CD117, and negative for Desmin and CD34.

**3. DISCUSSION**

As recommended for Gastric GISTs, treatment consists of surgical wedge resection without lymphadenectomy and represents cure for patients with primary localized tumors (7). Since gastric GISTs rarely metastasize to lymph nodes, there is no need for lymphadenectomy (8). In order to achieve adequate oncologic resection, 1 to 2 cm free margin is recommended (9, 10). So treatment of choice is simple wedge resection for gastric GISTs, and it carries low risk of complications, fast recovery and good oncological outcome (11). Recent reports from the National Comprehensive Cancer Network (NCCN) GIST Task Force and the GIST Consensus Conference under



**Figure 3.** Laparoscopic wedge resection of gastric stromal tumor (GIST)



**Figure 4.** Extraction GIST by Endobag through umbilical port site

the auspices of The European Society for Medical Oncology (ESMO) show that laparoscopic resection may be used for small gastric GISTs (< 2 cm in size) (4).

Laparoscopic resection of gastric GISTs appears safe when performed by a surgeon who is thoroughly familiar with laparoscopy the neoplastic characteristics of gastric GISTs (12). A special care has to be taken to prevent peritoneal seeding and possibility of capsular rupture during manipulation. Thus the size of tumor represents negative prognostic factor, and resection with free margins is curative predictor with good prognosis (12).

**4. CONCLUSION**

With this case report we demonstrate that laparoscopic approach is feasible and safe and follows all the principles needed for good oncological outcome with all the benefits of minimally invasive surgery even for GISTs that are larger than 2 cm.

**CONFLICTS OF INTEREST: NONE DECLARED.**

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