CASE REPORT

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Laparoscopic and Endoscopic Cooperative Surgery for Gastric Lipoma

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ABSTRACT

Laparoscopic and endoscopic cooperative surgery (LECS) is a procedure that combines laparoscopic gastric resection with endoscopic submucosal dissection to remove gastrointestinal tract tumors with minimal surgical resection margins. LECS was first investigated for the local resection of gastric gastrointestinal stromal tumors (GISTs), and the first reported version of LECS for GIST has been named "classical LECS". The advantage of LECS is the preservation of the stomach wall, supplying vessels and nerves. This helps save gastric motility and the patient's postoperative quality of life. Currently, classical LECS is a safe and useful procedure for gastric submucosal tumors (SMTs). In this case, we present a 17-year old female patient, who was presented to our department with discomfort and dull pain in the epigastrium. A gastroscopy examination revealed a large SMT ~7.0-8.0 cm in size in the corpus of the stomach. On computer tomography scan, this lesion was assessed as a lipoma. Considering the size of the lesion, the "classical" LECS procedure was chosen as a treatment modality that allowed to preserve the integrity of the stomach and the quality of the postoperative life of a young girl.

Keywords: Lipoma, gastric submucosal lesions, laparoscopic surgery, minimally invasive endoscopic surgery

INTRODUCTION

Laparoscopic and endoscopic cooperative surgery (LECS) is a procedure that combines laparoscopic gastric resection with endoscopic submucosal dissection (ESD) to remove gastrointestinal tract tumors with minimal surgical resection margins [1,2]. The advantage of LECS is the preservation of the stomach wall, supplying vessels and nerves. This helps save gastric motility and the patient's postoperative quality of life [2]. Currently, classical LECS is a safe and useful procedure for gastric submucosal tumors (SMTs) [1].

CASE PRESENTATION

A 17-year -old female patient was presented to the Department of Invasive Diagnostics and Treatment of the National Oncology Center for the gastroscopy examination with discomfort and dull pain in the epigastrium. In July 2022, a gastroscopy examination revealed a SMT ~7.0-8.0 in size, with a depressive ulcer on the surface in the middle part of the corpus, along the greater curvature, toward the posterior wall of the stomach. Biopsies were taken from the lesion, sucralfate and proton pomp inhibitors were prescribed to resolve the ulcer, and also computed tomography (CT) scan was planned. While an immunohistochemical analysis of biopsy samples revealed only "chronic inflammatory changes", on CT scan, this lesion was assessed as a lipoma. Due to the large size of the SMT, the LECS procedure was chosen as a treatment option. During the LECS procedure perfomed 1 month after gastroscopy, we noticed that the ulcer on the surface of the tumor had resolved. For the LECS operation, three laparoscopic ports were placed on the front wall of the abdomen. After the ESD was performed, the surgeon made a ~3.0 cm long gastrotomy in the anterior wall of the stomach, and the lesion was removed from the stomach into the abdominal cavity. An incision was extended from the port closest to the umbilicus, and the mass was removed from the abdominal cavity using a special mesh. The defect in the stomach wall was repaired laparoscopically. The ports were removed and replaced. Histopathological examination of the mass had confirmed that it was a lipoma (Figure 1).

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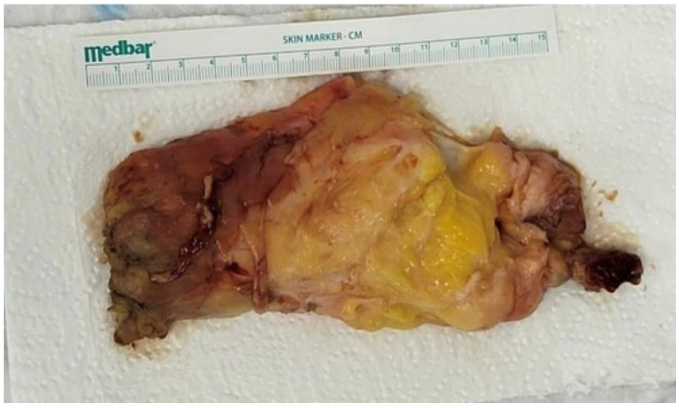

Figure 1. Removed lipoma

DISCUSSION

Gastric lipomas are rare tumors and account only 1-3% of benign stomach tumors [3]. The majority of these tumors are confined to the submucosa and are located in the antrum. While most gastric lipomas do not cause any complaints and are found incidentally, lipomas larger than 3 cm in size can cause symptoms such as upper abdominal pain and chronic gastrointestinal bleeding secondary to ulceration [3]. Small asymptomatic gastric lipomas should be observed, but larger, symptomatic lipomas should be removed [3]. Currently, endoscopic mucosal resection and ESD are used to remove large gastric [3] lipomas, but in our case,these options could not be perfomed because of the large size of the lesion, thats why the LECS procedure was chosen as a treatment modality. Sometimes the borders of gastric tumors, such as gastric cancer and SMTs, are not visible from the outside of the stomach, so it can be difficult to determine the exact resection margins of intraluminal tumors using traditional laparoscopic wedge resection [2]. LECS is a newly developed concept that combines ESD to determine the exact incision line and laparoscopic resection of the stomach wall [1,2]. LECS was first investigated for the local resection of gastric gastrointestinal stromal tumors (GISTs), and the first reported version of LECS for GIST has been named “classical LECS” [1]. The advantage of LECS is the preservation of the stomach wall, supplying vessels and nerves. This helps save gastric motility and the patient’s postoperative quality of life [2]. Since LECS was first reported in 2008, many researchers have used this procedure and currently, “classical LECS” is considered a safe and useful procedure for gastric SMTs without mucosal defects, independent of tumor location, such as proximity to the esophagogastric junction or pyloric ring [1,2]. In our case, a symptomatic large size lipoma was revealed and due to the benign nature of gastric lipomas [4], expand surgical interventions were not recommended. We have perfomed classical LECS procedure without any complications, and the lipoma was successfully removed. During the control gastroscopy, performed 2 months after the LECS, two scar tissues were observed at the site of the ESD and gastrotomy.

Classical LECS, which we had perfomed helped preserve the integrity of the stomach and the quality of postoperative life of a young girl.

Ethics

Informed Consent: We obtained consent from our patient for this publication.

Peer-review: Externally and internally peer-reviewed.

Authorship Contributions

Surgical and Medical Practices: F.G., A.A., A.H., G.A., T.M., M.M., C.A., Concept: F.G., A.A., A.H., G.A., T.M., M.M., C.A., Design: F.G., A.A., A.H., G.A., T.M., M.M., C.A., Data Collection or Processing: F.G., A.A., A.H., G.A., T.M., M.M., C.A., Analysis or Interpretation: F.G., A.A., A.H., G.A., T.M., M.M., C.A., Literature Search: F.G., A.A., A.H., G.A., T.M., M.M., C.A., Writing: F.G., A.A., A.H., G.A., T.M., M.M., C.A.

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