

Transgastrostomal Endoscopic Resection of a Gastric Lipoma Located in the Esophagogastric Junction : Report of a Case

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Abstract : We herein present a case of a gastric lipoma of the esophagogastric junction which was successfully resected by transgastrostomal endoscopic surgery (TGES). TGES was performed with a Buess-type rectoscope inserted through a temporary gastrostomy and guided by images transmitted to a monitor from a video camera and fiber optic system. The preoperative diagnosis was based on endoscopic ultrasonographic evidence of fat tissue identified by its homogeneous hyperechoic internal structure. The patient underwent a complete tumor resection by TGES and enjoyed a rapid postoperative recovery. TGES is considered to be a beneficial alternative to an open laparotomy because of its minimal invasiveness. We believe this simple technique is safe and effective for the resection of gastric submucosal tumors located in the esophagogastric junction.

Key words : Esophagogastric junction, Intraluminal surgery, Endoscopic surgery, Laparoscopic surgery, Submucosal tumor, Gastric lipoma

Introduction

Gastric lipomas are rare. Most are asymptomatic and are discovered incidentally, but they occasionally present with hemorrhaging or even gastrointestinal obstruction. We herein report here in a case of gastric lipoma located in the esophagogastric junction and accompanied by dysphagia, and we describe a successful resection of the tumor by the newly developed technique of transgastrostomal endoscopic surgery (TGES). Surgical problems related to the size or location of a lesion can be solved with such techniques as endoscopic submucosal dissection (ESD), a laparoscopic partial resection of the stomach,¹⁾ or the laparoscopic intraluminal (intra-gastric) surgical technique.²⁾ We used TGES, a further refinement of the laparoscopic intraluminal procedure in which endoscope instruments are all inserted into a single temporary gastrostomy to approach the lesion.

TGES is easy to approach loci of the stomach where it is impossible to be approached by EMR or laparoscopic partial resection, and a full-thickness excision is possible with TGES.³⁾ In addition, TGES decreases the pain experienced by patients, compared to other techniques.

Case Report

A 65-year-old male was diagnosed to be an asymptomatic submucosal gastric tumor, and thus had been followed up for every 6 months. Four years later, he began to suffer dysphagia. Gastroscopy revealed a 2.5×2.5-cm submucosal tumor located on the posterior wall under the esophagogastric junction; the overlying mucosa was normal (Fig. 1).

An upper gastrointestinal series showed a submucosal tumor protruding into the gastric lumen at the esophagogastric junction (Fig. 2). Endoscopic ultrasound (EUS) examination showed a hy-

pochoic tumor without extragastric growth. These findings suggested a lipoma. Due to the location of the tumor, EMR was not indicated because of the high risk of associated stenotic deformity. Accordingly, we decided to perform nucleation by the transgastrostomal approach, followed by a total gastrectomy with lymph node dissection if postoperative pathological examination of the initial surgical specimen showed it to be a

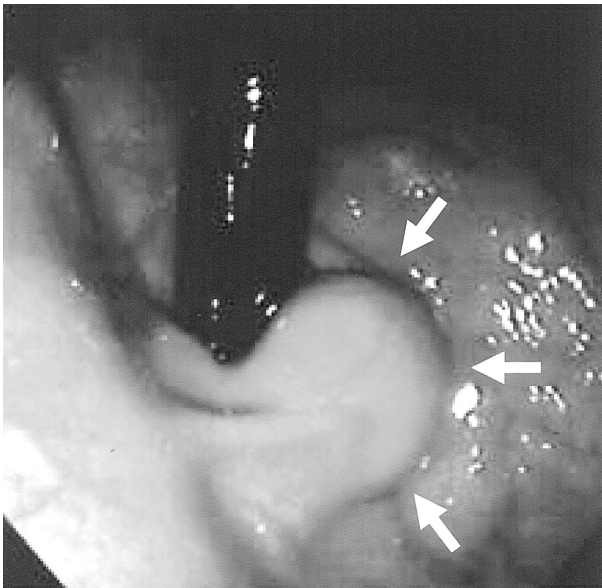


Fig. 1. Gastroscopy revealed a 2.5×2.5-cm submucosal tumor located on the posterior wall under the esophagogastric junction.



Fig. 2. An upper gastrointestinal series showed a submucosal tumor protruding into the gastric lumen at the esophagogastric junction.

liposarcoma.

Under general anesthesia, we made a midline incision about 4 cm long in the upper abdomen and entered the peritoneal cavity. An incision about 4 cm long in the anterior wall of the stomach was made, and a temporary gastrostomy was constructed with a series of interrupted sutures between the gastric and abdominal walls. A Buess-type rectoscope was inserted via this gastrostomy, advanced under direct vision to the desired location in the stomach, and locked in place by a supporting device (Fig. 3). A tumor resection was performed under guidance from a video monitor receiving images from a video camera with a glass fiber optical system.

An intramural soft and movable mass was seen on the posterior surface of the gastric wall just under the esophagogastric junction. Saline was injected into the submucosal layer from the edge of the tumor, and an incision was made in the floating mucosa. The tumor was resected carefully and removed from the underlying muscle layer (Fig. 4). After complete hemostasis, several interrupted transverse 4-0 polyglactin mucosal sutures were placed to approximate the mucosal edges. Finally, after removing the rectoscope, the temporary gastrostomy was closed.

The surgical specimen consisted of the gastric mucosa and esophageal mucosa containing a 2.5×2.0 cm submucosal mass colored slight yellow (Fig. 5).

A pathological analysis indicated mature adipose tissue, findings consistent with lipoma.



Fig. 3. A Buess-type rectoscope was inserted via gastrostomy.

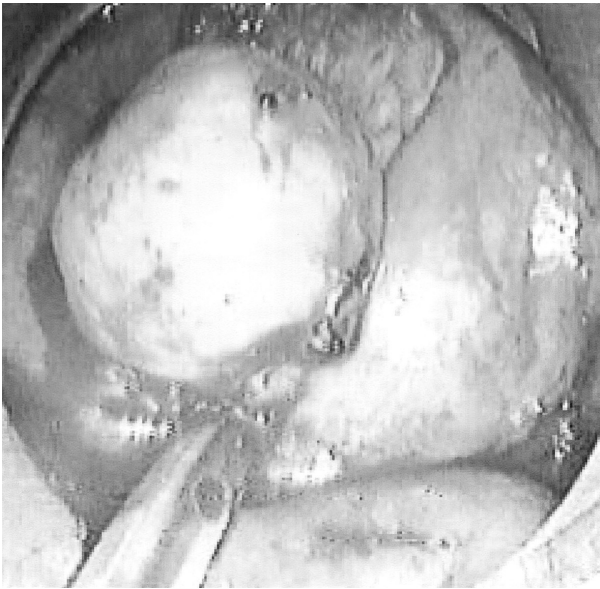


Fig. 4. The submucosal tumor was resected and removed from the underlying muscle layer.

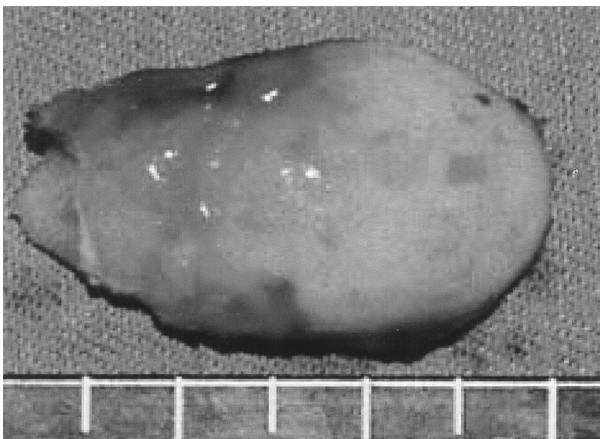


Fig. 5. 2.5×2.0 cm submucosal tumor; Pathological findings consistent with lipoma.

The postoperative course was uneventful. The nasogastric tube was removed one day after the operation, and the patient was discharged the 10th post operative day.

Following gastroscopy which performed 3 weeks after the operation showed only incisional wound with slight edema due to tumor resection, and no deformity or stenosis of the esophagogastric junction (Fig. 6). At five years after surgery, the patient remains well overall.

Discussion

Lipomas are benign tumors composed of mature

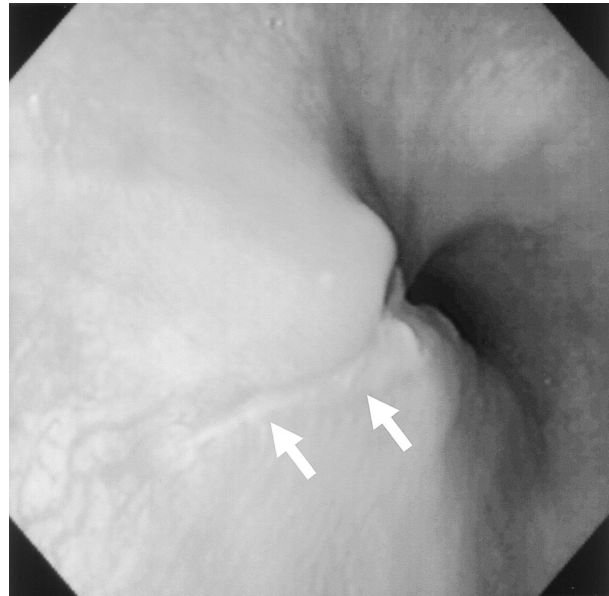


Fig. 6. No deformity or stenosis of the esophagogastric junction after the surgery.

adipose tissue that commonly occur in subcutaneous tissues. They constitute 6% of all gastrointestinal tumors, with the most common site being the colon, followed by the small intestine.⁴⁾ Gastric lipomas are extremely rare, having an incidence of only 1~3% of all benign gastric mesenchymal tumors.^{5)~8)} These are usually solitary (90%) and submucosal (95%)⁹⁾ in location; less than 5% are subserosal and 75% occur in the antrum.¹⁰⁾

Gastric lipomas are usually asymptomatic, but may present with abdominal pain, obstruction, or intussusception^{11)~12)} and bleeding.^{10)~11)} Clinically, symptoms are related to size, location, and development of complications. The most common clinical presence (50~60%) is upper gastrointestinal hemorrhage^{7)~13)} due to pressure necrosis of the overlying mucosa can be mild and lead to chronic anemia, or it can be severe, presenting a medical emergency. As a preoperative diagnostic method computerized tomography may suggest a diagnosis of lipoma due to the low attenuation value of fat, but this may be difficult to discriminate from liposarcoma.¹⁴⁾

Endoscopic ultrasound (EUS) is excellent examination to visualize all the structures inside a submucosal tumor and the diagnosis of the localization by contrasting the structure of layer in the gastric wall. Moreover, it is useful for obtaining information of the accurate depth to perform

surgical treatment.

Regarding this patient, it could get the essential assistant diagnosis to make the treatment policy of submucosal tumor by carrying out EUS preoperatively. According to a previous report, endoscopic fine needle biopsy can get the adipocyte, which was rich in the cell component.¹⁵⁾ If we concomitantly use computerized tomography and endoscopic fine needle biopsy, we would be able to get more certain preoperative diagnosis.

A surgical resection had been the mainstay of treatment for those lesions because of such complications as bleeding or intermittent obstruction, or in which malignancy cannot be excluded.⁶⁾¹⁶⁾ This patient remains asymptomatic in the early follow up period, the mass being an incidental finding in a routinely medical examination, but following to tumor growth in the esophagogastric-junction, he had complained dysphagia.

In Japan, benign gastric tumor or early gastric cancer is now treated successfully by endoscopic mucosal resection (EMR). This technique, however, is not indicated when the tumoral lesion is located near the esophagogastric junction or near the pylorus ring, and when the tumor size is greater than 20 mm.¹⁷⁾

The most appropriate laparoscopic approach should be selected according to the size and location of a tumor in the stomach. Ohashi et al.²⁾ has newly developed laparoscopic intraluminal (intra-gastric) surgery to enable access to a lesion on the posterior gastric wall. In the same time, Yamashita et al. first reported the concept of TGES in 1995.¹⁸⁾ They therefore simplified the maneuver of laparoscopic intraluminal (intra-gastric) surgery.

However, recent advances in techniques as endoscopic submucosal dissection (ESD) was expanded of selection criteria for those location and size of lesions,¹⁹⁾ TGES is one such excellent new method. Such a maneuver that reaches the intra-gastric lesion is easy, and it is possible in a short time to manage any sudden incidents. Furthermore, they enabled a full-thickness gastric excision to be performed both safely and endoluminally.³⁾ Laparoscopic intraluminal (intra-gastric) surgery requires inflation of the stomach with CO₂ gas during the operation. Sekimoto et al. reported that using

the Endo GIA is necessary in order to simultaneously resect and repair the gastric wall to avoid the deflation of the gastric lumen when resection of the full thickness of the stomach wall intraluminally. To successfully perform their procedure, the precise setting of intraluminal trocar placement and careful manipulation is required.²⁰⁾ For TGES, such problems arise, because we do not use CO₂ gas insufflation. Therefore, the advantages of TGES include easy preparation and capability for a full thickness gastric excision endoluminally. However, previous reports describes a gastrostomy to be associated with a risk of intraperitoneal contamination with gastric juices and bleeding from the gastric wall,²¹⁾²²⁾ our technique using Buess-type rectoscope is not associated with these risks. Watanabe et al. reported that this procedure could be done under epidural anesthesia. Namely, this approach is useful as the first choice of treatment for patients with serious complications who cannot tolerate anesthesia.²³⁾ Therefore, this minimum invasive surgery will be able to also shorten the length of hospitalization, thus providing substantial cost benefits.

Conclusion

We were able to resect gastric lipoma located in the esophagogastric junction easily and safely using the technique of TGES. The postoperative course was uneventful, and no postoperative deformity or stenosis of the stomach was observed. We therefore we believe that TGES is safe, and effective for the resection of gastric submucosal tumors located on the posterior wall near the esophagogastric junction.

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