

**LAPAROSCOPIC MANAGEMENT OF A LARGE EXTRINSIC GASTRIC LIPOMA**

Gloire À Dieu Byabene, \*Dr. Sorin Cimpean, Mattia Bez, Marie-Thérèse Marechal and Benjamin Cadiere

Saint Pierre University Hospital.

\*Corresponding Author: Dr. Sorin Cimpean

Saint Pierre University Hospital.

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**INTRODUCTION**

Gastric lipomas are slow growing benign tumors composed of mature adipose tissue and the gastrointestinal tract is a rare site of occurrence. The occurrence is rare and account for less than 1% of all tumors of the stomach and 5% of all gastrointestinal lipomas.<sup>[1,2]</sup> Within the gastrointestinal tract, the colon is a common site of involvement followed by the ileum and jejunum.<sup>[3]</sup>

Generally unusual and slow growing, they are localized in the submucosa in 90% to 95% of cases and in the serosa in 5% to 10% of cases.<sup>[4]</sup>

They are mostly asymptomatic and incidental in nature. Some lipomas may become symptomatic and can result in gastrointestinal bleeding, iron-deficiency anemia, gastric outlet obstruction and intussusceptions.<sup>[5,6]</sup>

We present the case of a patient with a large extrinsic gastric lipoma localized on the gastric antrum who was treated by laparoscopic approach.

**Clinical Image**

A patient, 50 years old, presented for in consultation for an epigastric gravity-type pain, gastroesophageal reflux disease caused by pyrosis and regurgitation, repeated post prandial vomiting, early satiety and permanent discomfort. A weight loss of about 15 percent in the last 6 months has been reported. These symptoms appear progressively in the last year. The medical history revealed two cesareans operations and high blood pressure.

The first hypothesis of chronic gastritis has been raised. A *Helicobacter pylori* serology has returned positive and the eradication treatment has been initiated. The gastroscopy revealed a large submucosal lesion more than 5 cm in diameter located at the small curvature, in its lower portion at the angle. On the ultrasound level, identification of a large lesion estimated at 85 x 40 mm in diameter, appearing heterogeneous and generally hyperechoic, with poor vascularization, located internally in relation to the muscularis, even if the superficial wall has, in addition to the mucous membrane and sub-mucous membrane layers, a thin hypo-echo edge surrounding the lesion. A biopsy was performed. The anatomopathological exam found a gastric. The

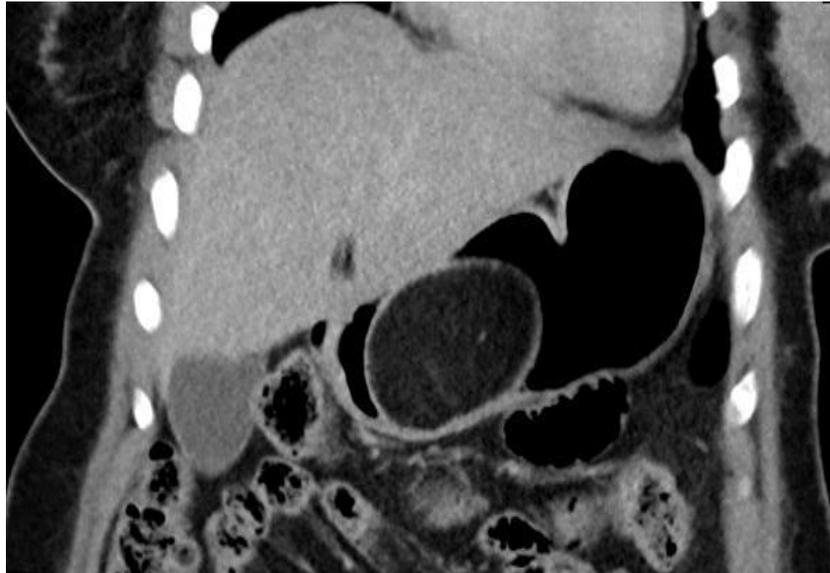
abdominal CT scan found a gastric mass developed in the posterior surface of the gastric wall, which measures 85 x 37 mm. FIG 1.

**Operative technique**

The procedure consisted in an exploratory laparoscopy and excision of a voluminous gastric lipoma. Four trocars were required for the surgery: a 12 mm trocar in the peri-umbilical position, a 5 mm trocar in the left flank and a 5 mm trocar in the right flank. The rear cavity of the epiploons by the supra-colic and sub-omental route using a monopolar coagulation device was performed. The gastric mass was identified on the posterior surface of the stomach facing the gastric cavity. A linear longitudinal gastrotomy with respect to the mass was performed, with the opening of the serosa and the different layers of the gastric muscle layer. The lipoma was revealed and dissected of his lodge using the forceps and the monopolar coagulation. Submucosa and mucosa were kept intact. Manual gastroraphie using PDS 2-0 was performed. The lipoma was extracted by a Pfannenstiel incision.

**Post-operative course**

The postoperative evolution was eventful. The oral alimentation was resumed on the second postoperative day. has been gradually restored. The patient described a very quick improvement of the symptomatology. A control gastroscopy was performed 6 weeks postoperative which was normal with no sign of gastric stenosis.



**Fig. 1:** Abdominal CT-scan. Sagittal section showing the lipoma on the posterior wall of the stomach.

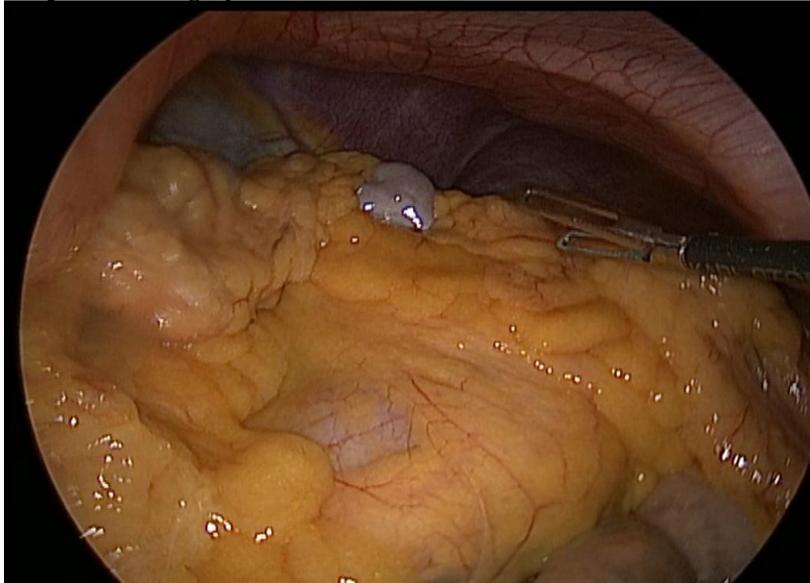


**Fig. 2:** Abdominal CT scan: coronal view revealing the relationship between the lipoma to other intra-abdominal organs.

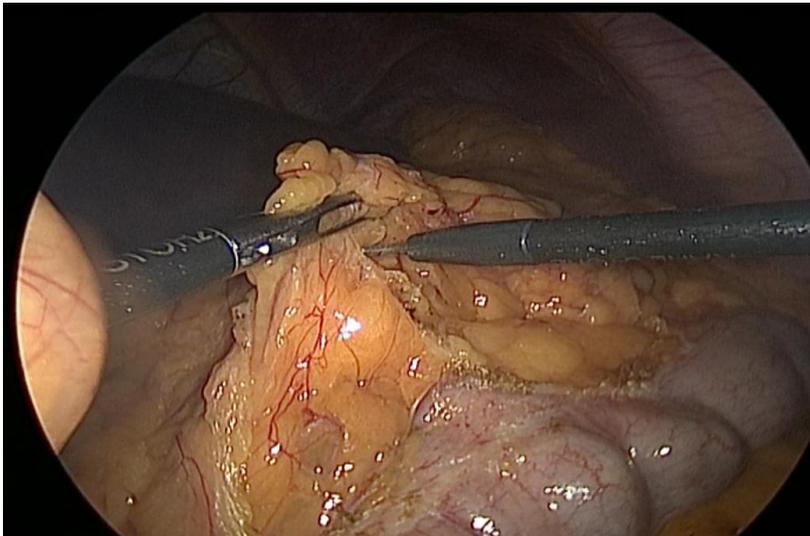


**Fig. 3:** Operative piece who weighed 88 grams and measured 9 x 5 x 2 cm.

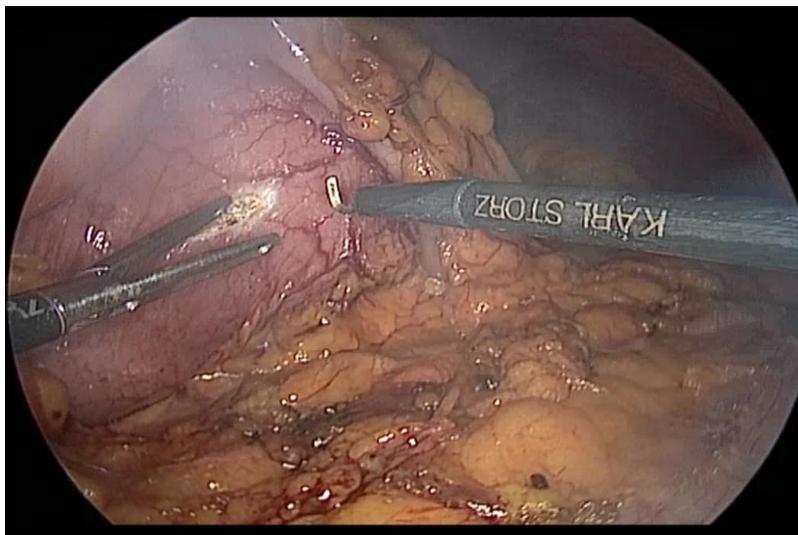
**Operative technique- steps of the surgery**



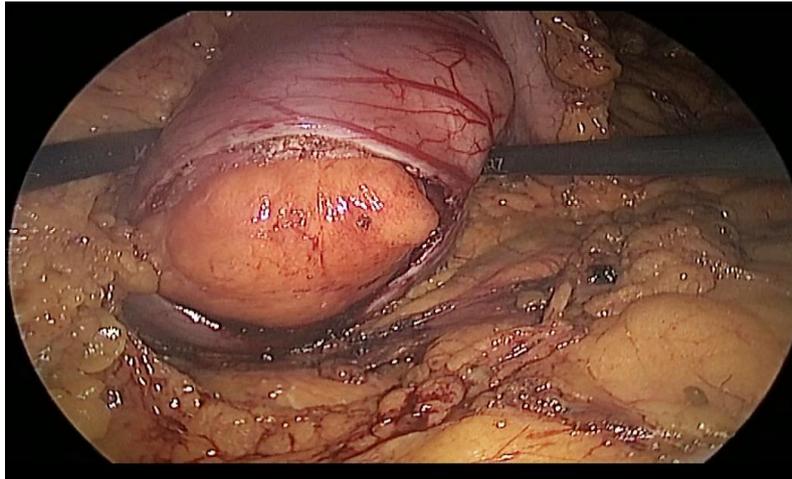
**1. Visualization of the gastric curvature projecting the lipoma.**



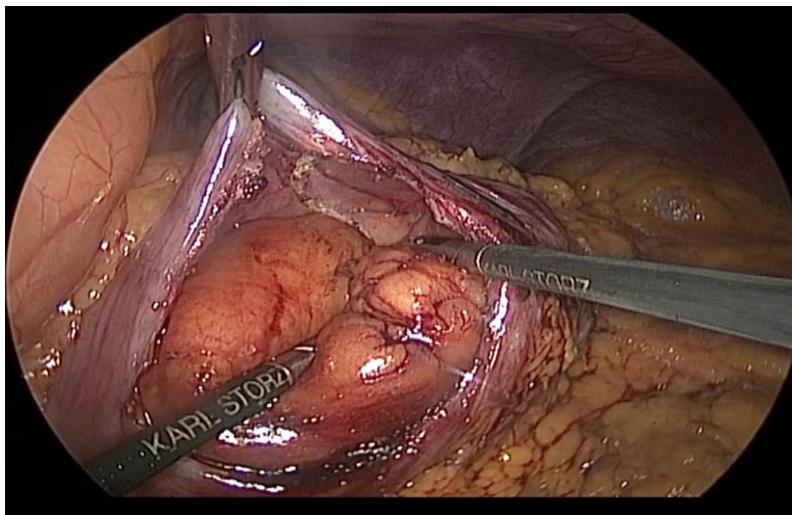
**2. The opening of the rear cavity.**



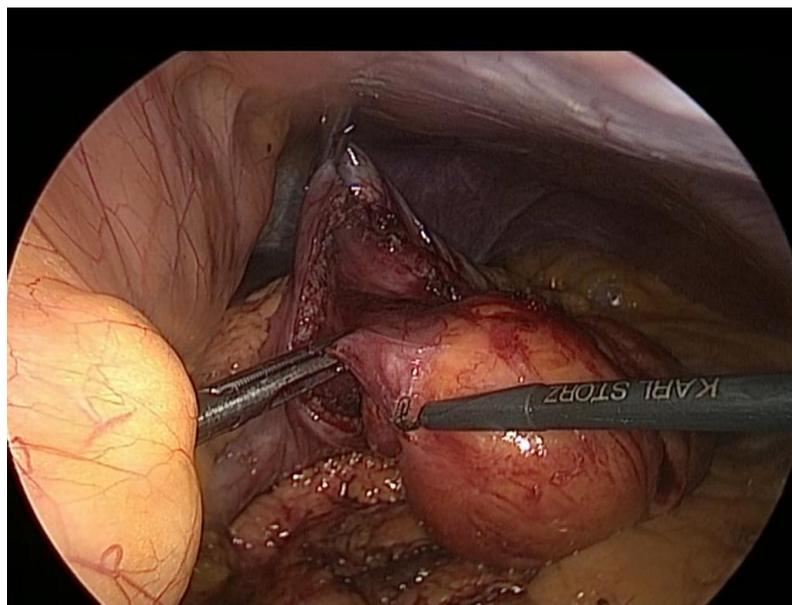
**3. Longitudinal incision facing the lipoma on the posterior surface of the stomach.**



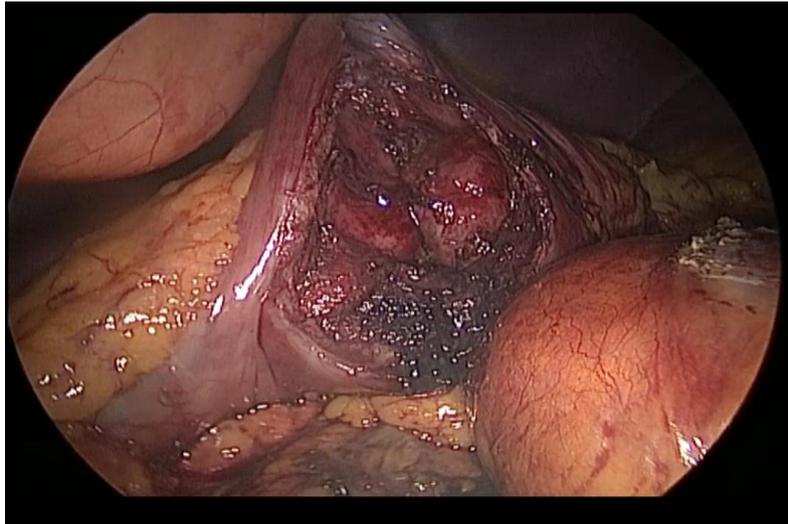
4. Access to the lipoma after incision of all gastric layers, sparing the sub-mucosa.



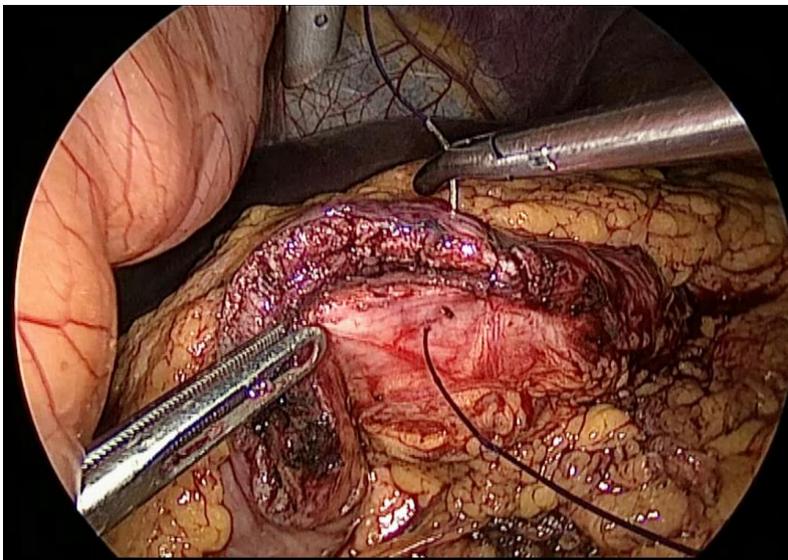
5. Mobilization of the lipoma.



6. Enucleation of the lipoma of his compartment.



7. End of lipomectomy, showing non-breaking of the sub mucosa.



8. Suture of the gastric incision.



9. Placement of a plastic bag and extraction of the lipoma by a Pfannestiel incision.

## DISCUSSION

Lipomas are benign soft tissue tumors that are composed of mature lipocytes and circumscribed by a fibrous capsule. Macroscopically, lipomas are formed by yellowish fat tissue of various sizes. Even though the etiology remains unknown, studies suggest that lipomas might be related to an embryological sequester of adipocytes or even be due to the natural process of aging.<sup>[7,8]</sup>

Gastric lipomas are rare and account for 2–3% of all benign tumors of the stomach.<sup>[3,9,10]</sup> Gastric lipomas prevail between the fifth and seventh decades of life and are found mainly for women. Usually are small and asymptomatic and are detected incidentally.<sup>[11]</sup> Sometimes are large or poorly circumscribed but usually are smooth, mobile and painless.<sup>[12]</sup>

The symptoms produced by gastric lipomas are related to the size of the lesion. When small (< 2 cm), lipomas are usually asymptomatic and often discovered incidentally. When are larger than 3 cm are usually symptomatic.<sup>[3,13]</sup>

In our case the tumor had almost 9 cm. This can explain why our patient had gastric pain, feeling of gravity, vomiting. This was probably caused by the compression of the stomach by the large lipoma due to its localization on the antrum with a notion of weight loss of about 15 percent which suggested a malignant lesion as a differential diagnosis. Most of the gastric lipomas arise on the antrum and lesions closer to the pylorus are more likely predisposed to a prolapse through. A fundic lipoma has less obstructive symptoms than the one that is on a lower floor of the stomach.<sup>[3]</sup>

Larger lesions however may cause a wide range of symptoms, from ulceration and bleeding which may cause hematemesis or melaena, to symptoms of early satiety, indigestion. The differential diagnosis of gastric lipoma includes peptic ulcer disease, stromal tumor, liposarcoma, fibroma, gastrointestinal stromal tumor or a glomus tumor.<sup>[14,15]</sup>

A preoperative histopathological diagnosis can be difficult to obtain due to the submucosal location of most lipomas, which means that endoscopic biopsies may be non-contributive to the diagnostic.<sup>[16]</sup> The abdominal CT scan is very helpful for the diagnosis: a homogenous mass with fat density ranging between –70 and –120 HU is essentially pathognomonic for a gastrointestinal lipoma. Generally, the abdominal CT scan and endoscopy with biopsy can be enough to confirm the diagnostic of gastric lipoma. In the past, prior to the availability of modern imaging modalities, the diagnosis was generally made after surgical resection.<sup>[17,18,19]</sup>

For our patient the diagnosis was suspected when the upper endoscopy was revealed a mass in the antrum and is was it was confirmed by the abdominal CT scan and biopsy.

Because of the rarity of these lesions, there is no clear consensus on the treatment. The most of the cases are managed through surgical resection which can cause significant morbidity according to a systematic review of 32 cases of large gastric lipoma published by Cappell *et al.*<sup>[20]</sup> The various procedures performed in these cases include submucosal mass excision and enucleation of the lesion, suitable for small lesions. Partial and in rare cases total gastrectomy accompanied these procedures depending on the size and degree of wall involvement by the tumor. Incidental lipomas should not be treated, as there are no reports of malignant degeneration. Although asymptomatic small lipomas are usually not treated but the most of the surgeons prefer to treat larger lipoma due potential risk of mechanical complication of symptoms, imminent life-threatening risk or the impossibility of excluding malignancy. Surgery is the treatment of choice for symptomatic large tumors. Endoscopic polypectomy can be tried for submucosal lesions smaller than 3 cm. The larger broad-based tumors have higher risk of perforation by endoscopic approach.<sup>[21,22,23]</sup> Endoscopic resection has become important since frequent uneventful surgical and post-operative reports were published.<sup>[24]</sup>

The most important differential diagnosis for gastric lipoma aside from liposarcoma is a gastrointestinal tract soft tissue tumor such as a gastrointestinal stromal tumor, leiomyoma, fibroma, and their malignant variables. Occasionally, gastric lipomas may also have to be distinguished from other types of intramural tumors, such as the neurilemoma, adenomyoma, Brunner's gland adenoma, and heterotopic pancreas.<sup>[25]</sup>

In our case we decided to perform an extrinsic enucleation by laparoscopy without breaking in the submucosal and mucosal layer. The decision was taken due to anatomopathological exam who revealed no sign of a malignancy. The operative specimen was extracted through a mini Pfannestiel incision for aesthetic purposes and through the old caesarean section scar.

## CONCLUSION

Large gastric lipomas are rare. Accurate diagnosis of gastric lipoma can be reached with a combination of endoscopic and imaging diagnostic techniques.

The laparoscopic approach is feasible with a very low morbidity and gastric lipoma resection.

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