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Case Report

A Case of Gastric Leiomyoma with Choledocholithiasis and Bilateral Ureteric Calculi

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Abstract

Gastric leiomyomas are benign uncommon tumors that originate from smooth muscle cells in the stomach wall. Approximately 2.5% of all gastric neoplasms are gastric leiomyomas. These are typically diagnosed at the age of 50–70 years, but may be found incidentally during medical evaluation or when they cause symptoms such as pain, bleeding, or obstruction. The standard treatment would be a gastric leiomyomectomy, however, with the advent of minimally invasive surgery, laparoscopic excision of the tumor, wedge resection, and transgastric excision of the tumor are viable options. The histopathological features and immunohistochemical markers are crucial in differentiating gastric leiomyomas from their more common counterparts – gastrointestinal stromal tumors and should be kept in mind as a possible differential diagnosis. In this study, we present a case of a 36-year-old female with choledocholithiasis and bilateral ureteric calculi who was found to have an incidental finding of esophagogastric growth, eventually diagnosed to be gastric leiomyoma.

Key words: Bilateral ureteric calculi, Choledocholithiasis, Gastric leiomyoma, Gastrointestinal stromal tumor, Laparoscopic surgery, Minimally invasive surgery

INTRODUCTION

Gastric leiomyomas are benign uncommon tumors that originate from smooth muscle cells in the stomach wall. Approximately 2.5% of all gastric neoplasms are gastric leiomyomas. These are typically diagnosed at the age of 50–70 years, but can be found incidentally during medical examinations or when they cause symptoms such as pain, bleeding, or obstruction. These tumors are primarily found as submucosal growths in the antrum and body of the stomach and may be intraluminal or extramural. They tend to grow slowly and are usually asymptomatic unless they lead to bleeding from mucosal ulceration. On upper gastrointestinal (UGI) studies, they show up as a filling deformity of the gastric wall and on endoscopy, they may be viewed as a submucosal growth, appearing as smooth, well-defined tumors, with stretched and effaced mucosal folds overlying the lesion, also referred to as the Schindler's sign. The standard treatment would be a gastric leiomyomectomy, however, with the advent of minimally invasive surgery, laparoscopic excision of the tumor and wedge resection and transgastric excision of the tumor are viable options.[1]

Management strategies for gastric leiomyomas depend on factors such as tumor size, symptoms, and patient preferences, often involving periodic monitoring for asymptomatic small tumors rather than immediate intervention.

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CASE PRESENTATION

A 36-year-old female presented to our outpatient with complaints of abdominal pain for the past week. The pain was localized to the right hypochondrium and lumbar

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regions. There was no other significant history. She was also diabetic and was on regular medications for the same. On examination, abdominal examination was unremarkable, with no palpable mass, and minimal tenderness at the right hypochondrium and left lumbar region. Routine blood investigations were normal. On further evaluation with an abdominal computed tomography, she was found to have cholelithiasis with choledocholithiasis, bilateral ureteric calculi, and right-sided hydroureteronephrosis, and an incidental finding of growth on the lesser curvature of stomach – with radiological features suggestive of gastrointestinal stromal tumor (GIST) [Figure 1].

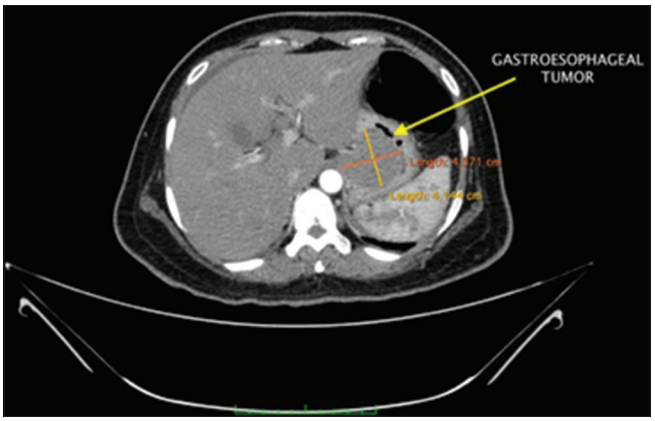

Figure 1: Contrast-enhanced computed tomography abdomen showing growth on the lesser curvature of the stomach

A multidisciplinary approach was taken to treat the patient, and she underwent right percutaneous nephrolithotomy with bilateral double J stenting and endoscopic retrograde cholangiopancreatography with sphincterotomy and stenting for the management of choledocholithiasis, the patient was then discharged and followed up closely, with a plan for laparoscopic cholecystectomy and excision of the gastric tumor. Four weeks later, the patient was readmitted, and a UGI scopy was done, on which a submucosal lesion of 4 × 5 cm was noted on the lesser curvature of the stomach, just below the gastroesophageal junction [Figure 2].

Figure 2: Upper gastrointestinal scopy showing submucosal lesion

Once appropriate consent and anesthesia clearance were obtained, the patient was planned for elective surgery, that is, laparoscopic transgastric excision of esophagogastric junction growth with cholecystectomy. After the creation of pneumoperitoneum through the 10 mm umbilical port, two 5 mm working ports were made on either side of the 10 mm camera port. One 5 mm port was made in the right hypochondriac region for liver retraction, and one 10 mm working port was made in the epigastric region, which was inserted transgastrically, and minimal pneumo was introduced into the stomach, as shown in Figure 3. Hence, an endoscopic view of the tumor was achieved.

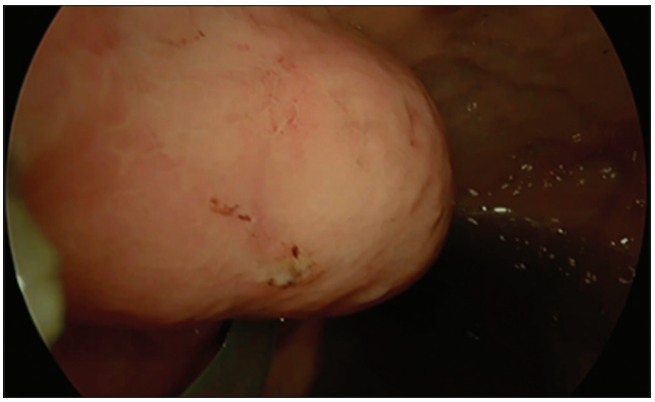

Figure 3: Endoscopic view of tumor

The incision made was lengthened slightly and the tumor was dissected from the mucosal layer, using blunt dissection and harmonic scalpel, was removed in toto through the 10 mm port, and sent for histopathological analysis. Hemostasis was secured, and the gastrotomy was closed using barbed sutures and PDS sutures, after ensuring the appropriate placement of the Ryles tube [Figure 4].

We then proceeded with a standard laparoscopic cholecystectomy. Postoperatively, the patient had an uncomplicated recovery. A fluoroscopy study was done on POD 4, which was normal [Figure 5], and the patient was discharged on the 5th post-operative day after the resumption of the normal diet.

Histopathology revealed features suggestive of a benign leiomyoma, and further, immunohistochemistry was positive for SMA, <1% for Ki67, and negative for CD 117, and DOG 1 thus ruling out the possibility of a gastrointestinal stromal tumor [Figure 6].

DISCUSSION

Gastric leiomyomas comprise approximately 2.5% of all gastric neoplasms. As in our case, most are asymptomatic, however, some patients may present with symptoms such as post-prandial fullness or gastrointestinal or ulcerative bleeding. Both genders are equally affected. The condition usually is diagnosed in patients over 60 years of age; however, any age group may be affected.[2] Gastric leiomyoma presents as small solitary tumors which are smooth and well-circumscribed. The surrounding mucosa is normal and may have some ulceration overlying the mucosa at the tumor site. If a pedunculated mass is present in the antral region, it can present as a gastroduodenal intussusception. On histopathology, unlike GISTs, which stain positive for CD-117 and CD-34, gastric leiomyomas and schwannomas typically do not express these markers. Histologically, gastric leiomyomas consist of hyperplastic smooth muscle cells with low mitotic activity, SMA positivity, and minimal c-kit expression. Some documented complications associated with this disease are intraperitoneal discharge secondary to mucosal ulceration, gastric volvulus, gastric tumoral torsion, and hemorrhage.[3] Either CT scan or endoscopy can be used to diagnose GLM, and endoscopic ultrasound can be used for localizing smaller GLM. Endoscopic resections may not be possible but can be used for histopathological diagnosis and further subtyping of disease. Pre-operative endoscopic marking may help during laparoscopic resection of GLM situated on the posterior wall. The treatment for GLM is surgical resection. It can be performed by open method or laparoscopically, and pedunculated GLM may be resected using endoscopic polypectomy or enucleation.[4] In this case, laparoscopic transgastric excision was performed, and the minimally invasive technique was vital in the ease of post-operative recovery of the patient.

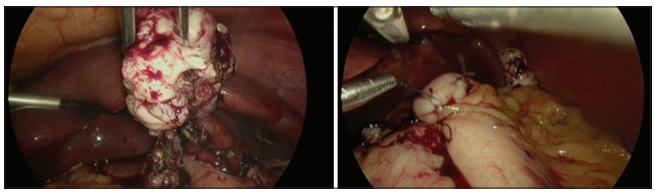

Figure 4: Tumor excised in toto and gastrotomy sutured

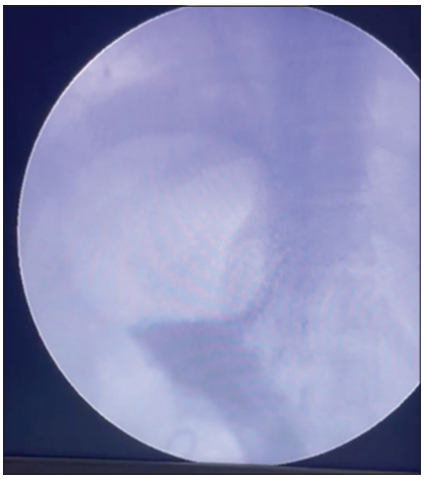

Figure 5: Fluoroscopy showing gastric continuity and no evidence of contrast extravasation

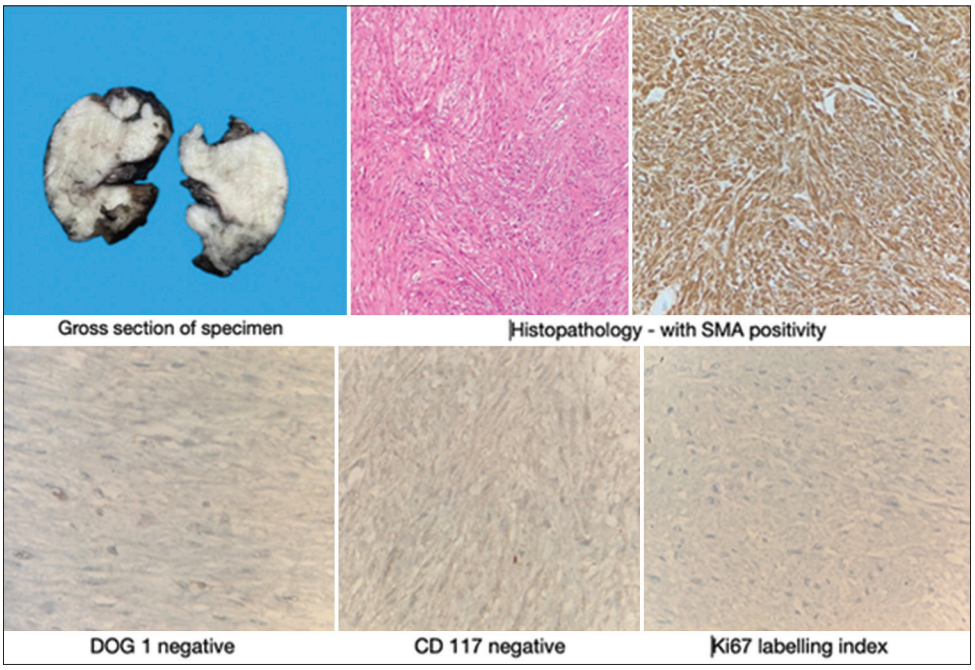

Figure 6: Gross specimen and histopathological images of the tumor

CONCLUSION

Minimally invasive surgery has proven beneficial in the treatment of submucosal gastrointestinal tumors, such as gastric leiomyomas. The diagnosis of such tumors is usually incidental, and when diagnosed the laparoscopic approach for resection is considered safe and beneficial. The histopathological features and immunohistochemical markers are crucial in differentiating gastric leiomyomas from their more common counterparts – GISTs, and should be kept in mind as possible differential diagnoses.

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