Splenic Cyst Mimicking Gastric Subepithelial Tumor Diagnosed by Endoscopic Ultrasonography

Recent research reveal that the diagnosis of gastric extraluminal compressions mimicking subepithelial tumor is increasing in numbers as esophagogastroduodenoscopy becomes widespread. Endoscopic ultrasonography is a very useful tool for differentiating extraluminal compressions from subepithelial tumors. Gastric extraluminal compressions are due to compression by either normal adjacent organs or pathologic conditions. Pathologic conditions are mainly benign, but some requires operation according to its size. We report a case of a 24-year-old female, who underwent esophagogastroduodenoscopy and was misdiagnosed with gastric subepithelial tumor. Endoscopic ultrasonographic findings showed anechoic cyst outside the gastric wall, which revealed to be a splenic cyst. (Korean J Helicobacter Up Gastrointest Res 2012;12:116-119)

Key Words: Splenic cyst; Endosonography; Subepithelial tumor; Extraluminal compression

INTRODUCTION

Detection rate of subepithelial tumor-like lesions have recently been rising because of increased screening esophagogastroduodenoscopy (EGD). These lesions have normal mucosa and protrude into the lumen of the gastrointestinal tract. Subepithelial tumor-like lesions are mainly divided into subepithelial tumors and external compression. Accurate differential diagnosis of these two lesions via EGD is difficult. On the other hand, multiple layers of the gastrointestinal wall can be precisely recognized and the adjacent organs can be definitively identified via EUS. Thus, EUS is frequently used to diagnose the staging of localized gastrointestinal tumors and subepithelial tumors. In addition, as subepithelial tumors and external compression can be distinguished via EUS, unnecessary tests or procedures can be foregone. A splenic cyst is a very rare disease with an incidence rate of only 0.07%. Although it is mostly asymptomatic, its symptoms appear as it becomes larger. If splenic cyst has risk of complication with a diameter larger than 5 cm, surgical treatment should be considered. Using EUS, the authors diagnosed a splenic cyst that had been misdiagnosed as a subepithelial tumor. And its diagnosis is reported herein.

CASE REPORT

A healthy 24-year-old female patient visited the outpatient department of the authors’ hospital. She had been diagnosed
Young Kyoung Sa, et al: Splenic Cyst Mimicking Gastric Subepithelial Tumor Diagnosed by EUS

Fig. 1. Endoscopy shows 3.0 cm sized dome shape mucosal protrusion covered with normal mucosa at fundus.

Fig. 2. Endoscopic ultrasonography shows 4.6×3.5 cm sized anechoic mass with internal septation and calcification outside gastric wall.

Fig. 3. Gastric wall compression by splenic cyst on abdominal CT.

with a 3 cm sized subepithelial tumor in the gastric fundus via EGD when she visited a private clinic due to dyspepsia. At the time of her visit, her blood pressure, pulse rate, and respiratory rate were 120/80 mmHg, 88/min, and 20/min, respectively. On her physical examination, there was no particular finding in her abdomen. She had no history of trauma. Her complete blood cell count showed the following normal findings: a white blood cell count of 5,500/mm³, hemoglobin 13.3 g/dL, and platelets 214,000/mm³. Her blood chemistry was normal, as follows: total protein 6.5 mg/dL, albumin 3.9 g/dL, total bilirubin 0.6 mg/dL, AST 14 U/L, ALT 16 U/L, ALP 64 U/L, amylase 66 U/L, and CA 19-9 3.1 U/mL.

When EGD was conducted at the authors’ hospital, the patient was diagnosed as a 3 cm sized protruded lesion with normal mucosa in the gastric fundus. The bridging fold formed by the protruding mucosal fold was observed around the lesion. When the lesion was pressed with biopsy forceps, it was firm, non-movable, and fixed (Fig. 1). Neither a cushion sign nor a rolling sign appeared. A 4.6×3.5 cm sized mass that compressed the stomach outside the gastric wall was observed via EUS. The internal mass was anechoic and had septum. The mass was diagnosed as a splenic cyst because it was connected to the spleen (Fig. 2). When abdominal CT was conducted to confirm the diagnosis, the thin-walled splenic cyst with a septum and 0.5 cm-sized calcification inside the mass were also observed (Fig. 3).

As the patient had no symptom and her cyst was smaller than 5 cm in diameter, surgery was not performed and she was merely monitored.

DISCUSSION

Unlike a cyst of liver, kidney, or ovary, a splenic cyst is a very rare disease. The Martin’s classification⁶ of splenic cysts divides them into primary cysts and secondary cysts depending on the presence of epithelial cells in the outermost layer of the cyst. A secondary cyst occurs mainly due to abdominal trauma. Primary cysts are further divided into parasitic cysts and non-parasitic cysts. No cases of parasitic cysts have been reported in Korea. Non-parasitic cysts are further classified into
congenital cysts and neoplastic cysts. Congenital cysts are divided into epidermoid, dermoid, and mesothelial cysts depending on the type of their epithelial cells.

Non-parasitic cysts frequently occur in young adults, particularly in women. More than 70% of people with non-parasitic cysts have symptoms. Approximately 50% of asymptomatic patients have a mass that palpated in the left upper quadrant. The symptoms are non-specific and occur mainly due to the physical compression caused by the splenic enlargement. Cyst rupture is rare but is the most severe complication, that include intra-abdominal bleeding, peritonitis, and sepsis.

EUS, CT, and MRI are mainly used to diagnose splenic cysts. In addition, aspiration of the cystic fluid, followed by the measurement of tumor markers such as amylase, CA19-9, and CEA, or bacterial culture or cytology is conducted to diagnose splenic cysts. The effectiveness of EUS in the diagnosis of splenic cysts has not been reported yet.

Because of the increased conduct of EGD, the detection rate of the lesions covered with normal mucosa which protrude into the internal gastric wall has been increasing. These lesions are divided into subepithelial tumors and extrinsic compression by adjacent organ or mass. Patients are diagnosed with a subepithelial tumor if a mass is observed in the internal gastric wall via EUS, whereas they are diagnosed with external compression via EUS if adjacent organs or masses press the gastric wall outside the gastric serosa, the fifth layer. EUS has a specificity of almost 100% in the aforementioned cases. Additional tests to confirm the external compression diagnosed via EUS include abdominal sonography, CT, and MRI. If the lesion is small, however, it could not be detected via such imaging tests.

Various etiology induce extrinsic compression of stomach. It is classified into compression by normal adjacent organs such as the spleen, liver, pancreas, gall bladder, intestine and pathologic lesions. Pathologic causes are usually benign and include hepatic cysts, pancreatic cysts and renal cysts, gall bladder enlargement, lymph node enlargement, liver abscess and splenic artery aneurysm. Malignant lesions include hepatocellular carcinoma, liver metastasis, pancreatic cancer and lymphoma of the spleen.

Presumptive compressing structure is influenced by which portion of stomach indented. Compression by the spleen or the splenic vessel is mainly observed in the gastric fundus, whereas compression by the liver, gall bladder or pancreas is mainly observed in the gastric body. In particular, pathologic conditions caused by diseases of the liver and the gall bladder mainly occurs in the anterior side of the gastric body. External compression occurs more often in the gastric body or the fundus than in the gastric antrum.

The goals of the treatment of splenic cysts include the removal of the cyst, the prevention of its recurrence and complications. As non-parasitic cysts less than 5 cm in diameter often show spontaneous regression, they can be monitored without operation. Indications of operation include cysts larger than 5 cm in diameter, which are susceptible to complications and all cysts with symptoms. For surgical treatments, total splenectomy was regarded as a surgical principle in the past. Surgical treatments that preserve the parenchyma of the spleen, however, such as cystectomy, marsupialization, partial cyst decapsulation and partial splenectomy, have been developed with the increase in the physiological and immunological importance of the spleen. Because of the recent development of laparoscopic surgery, partial splenectomy using laparoscopy has been mainly conducted, and has reported good outcomes.

Via EUS, the authors diagnosed splenic cyst that had been misdiagnosed as subepithelial tumor on EGD. With the increase in the conduct of EGD, the number of cases of external compression misdiagnosed as a subepithelial tumor is also expected to increase. Especially at splenic cyst, ultrasonography show typical round homogeneous, anechoic, with marked echogenic thin wall sometime with septation and calcification. So, EUS is useful as a primary additional test because it has a high sensitivity in differentiating the external compression from the subepithelial tumor. In addition, unnecessary tests or surgeries can be avoidable. Follow-up studies have shown that external compression does not require additional treatments in most cases, but malignant lesions are observed in some cases. Furthermore, the splenic cyst shown in this study was a benign lesion, but could require surgery depending on the size of the lesions.

The authors herein reported a case of the splenic cyst diagnosed via EUS that had been misdiagnosed as a subepithelial tumor on EGD.

REFERENCES

2. Kim MS, Kim JO, Youn DJ, et al. Diagnostic usefulness of endo-


