CASE REPORT

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Giant Gastric Lipoma That Caused Gastric Outlet Obstruction Successfully Removed by Endoscopic Submucosal Dissection

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ABSTRACT Gastric lipomas (GL) are rare benign tumors of the stomach. Small GL (<2 cm in diameter) are usually asymptomatic. Large lesions can cause bleeding and obstruction. While endoscopic resection is the recommended treatment for small GL, there is no clear consensus for the treatment of larger lesions. Large GL can be removed safely using different endoscopic techniques [endoscopic mucosal resection, unroofing, loop and let go, endoscopic submucosal dissection (ESD)]. In the literature, there is a limited number of large GL cases treated by ESD method. Here, we presented a case of large GL causing gastric outlet obstruction that was treated with ESD method.

Keywords: Gastric lipomas; gastric outlet obstruction; endoscopic submucosal dissection

Gastric lipomas (GL) constitute less than 1% of gastric tumors.[1] They are generally asymptomatic. Gastric outlet obstruction (GOO) and upper gastrointestinal bleeding (UGIB) are the most common presentations in large lesions.[2] While treatment is not recommended for asymptomatic GL, there is no clear consensus regarding treatment for symptomatic GL.[3] GL can be resected using various endoscopic methods [endoscopic mucosal resection (EMR), unroofing, loop and let go, endoscopic submucosal dissection (ESD)].[4,5] In the literature, the number of large GL resected using ESD is quite low.[2] Here, we report a case where a large GL causing GOO was resected using ESD.

CASE REPORT

A 63-year-old female patient was admitted to our gastroenterology clinic with complaints of early satiety, nausea, and vomiting for 6 months. In esophagogastroduodenoscopy, a subepithelial lesion (SEL) approximately 7 cm in length, resembling lipoma in endoscopic appearance (yellowish hue and positive pillow sign) and causing GOO was observed on the posterior wall of the antrum (Figure 1).[6] Endoscopic ultrasonography (EUS) was performed with a radial-scanning 20-MHz catheter probe (UM3D-DP20-25R, Olympus Co. Ltd., Tokyo, Japan). EUS revealed an oval subepithelial, hyperechoic lesion in the antrum likely originating from the submucosa measuring 45 mm in thickness and 70 mm in diameter with well-defined outer endosonographic borders. Abdominal contrast-enhanced computed tomography (CT) revealed a well-circumscribed, homogeneous, 7×4.3 cm mass, with attenuation characteristic of fat, arising from the gastric antrum. The SEL on computed tomography was determined to be a GL (Figure 2). Because the patient did not wish to undergo surgery, ESD was performed after obtaining patient consent. Following the ESD procedure that lasted approximately 70 min, SEL was resected en bloc (Figure 3). No complications were observed during ESD. The GL, which could not be advanced from the

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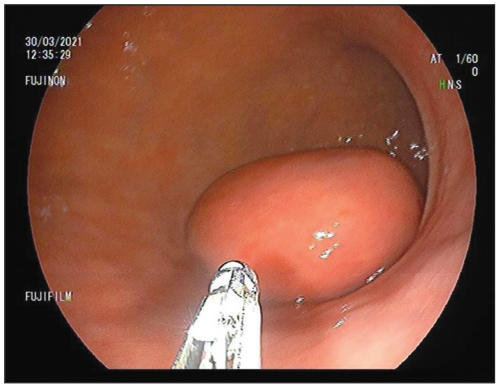

FIGURE 1: In esophagogastroduodenoscopy, a subepithelial lesion approximately 7 cm in length, compatible with lipoma, and causing gastric outlet obstruction was observed on the posterior wall of the antrum.

FIGURE 2: The subepithelial lesion (7×4.3×3.8 cm in diameter) on computed tomography was evaluated as a lipoma.

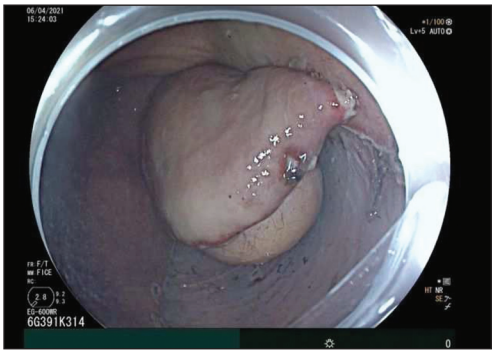

FIGURE 3: Endoscopic view during the dissection of the lipoma base.

cardia to the proximal despite repeated attempts, was divided by a snare in the stomach lumen and recovered through anendoscopic basket (Figure 4). Histopathological diagnosis was confirmed as GL. The patient had an uneventful post-ESD hospital course and was discharged on post-operative day 2. On follow-up visit two weeks later, the patient was completely asymptomatic for her previous obstructive symptoms. Informed consent was obtained from the patient.

DISCUSSION

Lipomas are slowly growing benign subepithelial tumors of mesenchymal origin.[7] They are mostly observed in the colon and gastric antrum in the gastrointestinal tract.[7] GL constitutes an extremely rare (1-3%) group among benign gastric tumors.[8,9] They are most frequently observed among people between the ages of 50-60 and are more common in women.[8]

GL is usually asymptomatic.[9] The larger the lesion diameter, the more likely they are to be symptomatic. Lesions >4 cm are defined as giant GL.[2] According to the study of Ingason et al., most frequently reported symptoms in GL were associated with GOO (nausea, vomiting, bloating, early postprandial fullness, and abdominal pain).[2] According to Cappell et al., UGIB due to ulceration on the lipoma is the most common symptom.[9]

Endoscopic diagnosis of GL is simple. Endoscopically, GL appears as a yellow hue. On touching the mucosa on the lesion with forceps, it seems to be soft and the point of contact collapses into the lesion (pillow sign). The pillow sign is quite (98%) specific for the diagnosis of lipoma.[7] The presence of a pillow sign with a yellowish appearance is usually sufficient for the diagnosis of lipoma.[2] Endoscopic

FIGURE 4: Piecemeal excision of the lesion after resection with endoscopic submucosal dissection.

biopsy is mostly nondiagnostic. Performing repeated biopsies from the same location increases the possibility of diagnosis.[7] However, if the endoscopic appearance is characteristic, biopsy is not recommended for lipoma diagnosis.[7]

EUS and CT are also beneficial in the diagnosis of GL.[10,11] In EUS examination, lipoma is generally defined as a homogeneous hyperechoic lesion originating from the submucosal layer.[10] In CT, lipoma is evaluated as a round or ovoid mass with a homogeneous appearance and with the same density as that of the subcutaneous adipose tissue (-80,-120 Hounsfield units).[11] These findings are pathognomonic for lipoma.

Lipomas are considered nonmalignant. Therefore, resection or surveillance is not recommended for asymptomatic lesions.[7] As per the literature, surgical resection has mostly been applied in the treatment of symptomatic and large GL. The number of patients undergoing endoscopic resection is rather limited, and these cases are presented in the form of case reports.[2,8,9,12,13] EMR, one of the endoscopic resection methods, is not recommended for lipomas >2 cm due to the risk of perforation and bleeding.[13] The most important disadvantage of the unroofing method is the risk of recurrence. Insufficient excision of the fibrous capsule is thought to be the cause of recurrence in GL.[13] The "ligate-and-let-go" method is considered as more suitable for pedunculated lipomas.[2] In our patient, we preferred ESD method, because the lesion was large and had no peduncle, and the patient did not want surgery. The number of GL treated with ESD in the literature is rare. The average size of lesions resected with ESD is 4 cm (range: 1.2-9 cm). En bloc resection was achieved in all of these cases.[2] To the best our knowledge, the GL presented in this report is one of the five largest volume lesions treated endoscopically and reported in the literature. In our procedure, as in other reported cases, no major complications were observed. Therefore, this case report once again demonstrated that ESD is safe in the treatment of large GL.

There is no study comparing ESD with other methods in the treatment of GL. The most important advantage of ESD method is that large lesions can be completely resected en bloc with its capsule.[2,13] As a result, the possibility of recurrence is eliminated. However, since passage can be difficult in terms of transesophageal passage, the most important issue limiting endoscopic resection in SELs is lesion size.[14] In this respect, since the giant lipoma in our patient could not be advanced from the cardia to the proximal after ESD, it could only be removed after being divided with a snare to ensure transesophageal passage. Unlike gastrointestinal stromal tumors, there is no seeding risk in case of disrupted capsular integrity in lipoma.[15] This situation is not thought to pose any risk for recurrence. Therefore, the giant lipoma in our patient was resected en bloc with its capsule using ESD method, and the transesophageal passage problem was eliminated by dividing the lesion using a snare.

In conclusion, ESD is a safe method in the treatment of large symptomatic GL. In large symptomatic GL, piecemeal excision of the lesion after resection with ESD may be a more non-invasive approach than surgery.

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Conflict of Interest

No conflicts of interest between the authors and / or family members of the scientific and medical committee members or members of the potential conflicts of interest, counseling, expertise, working conditions, share holding and similar situations in any firm.

Authorship Contributions

Idea/Concept: *Abdullah Murat Buyruk;* ***Design:*** *Abdullah Murat Buyruk;* ***Control/Supervision:*** *Abdullah Murat Buyruk; Halil Afşin Taşdelen, Aydın Aktaş;* ***Data Collection and/or Processing:*** *Abdullah Murat Buyruk, Ayten Livaoğlu;* ***Analysis and/or Interpretation:*** *Abdullah Murat Buyruk; Halil Afşin Taşdelen, Aydın Aktaş;* ***Literature Review:*** *Abdullah Murat Buyruk, Ayten Livaoğlu, Aydın Aktaş;* ***Writing the Article:*** *Abdullah Murat Buyruk, Halil Afşin Taşdelen, Ayten Livaoğlu, Aydın Aktaş;* ***Critical Review:*** *Aydın Aktaş;* ***References and Fundings:*** *Abdullah Murat Buyruk.*

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