CASE REPORT

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Two Gastric Lipoma Cases

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ABSTRACT In the present paper, it was aimed to discuss the clinicopathologic results of two cases who were diagnosed with gastric lipoma that is rarely seen, under the light of the literature. The first patient is a male dyspeptic patient aged 77 years, who applied with complaint of upper gastrointestinal hemorrhage. In the endoscopic examination, an obstruction localized at antrum and a 3 cm diameter mass causing irregularity were identified. The second patient is a 65 years old female patient, who applied with similar dyspeptic complaints. In the endoscopic examination of the patient, a mass with a diameter of 4 cm, located at the junction of the stomach corpus antrum, was described. Subtotal gastrectomy was applied to both patients. As a result of histopathological analysis of the materials, both cases were diagnosed with gastric lipoma. Gastric lipomas generally have submucosal localization. They are coincidentally detected during the endoscopic biopsies and treated with resection or subtotal gastrectomy.

Keywords: Stomach; lipoma; gastrectomy; dyspepsia

The benign gastric tumors may have epithelial or mesenchymal origin. The gastric lipomas are the rarely seen tumors, which are in the group of tumors with mesenchymal origin and which originate from slowly growing benign fat tissue.[1-15] Only 5% of them have gastric origin.[4,8,9,11,12] They constitute 2-5% of benign gastric tumors and <1% of gastric neoplasms.[1,4,5,9,11,13-15] They generally are single, capsuled, and yellow. They may rarely be multiple. They are similar to the lipomas at other localizations.[13,14] They have submucosal or subserosal localization.[1,2,4,8,13,14] The submucosal ones grow as intragastric, whereas the subserosal ones grow as extragastric.[2] Fifteen to forty-six percent of the patients are asymptomatic.[2,11-13]

Hemorrhages may occur depending on the ulceration of the mucosa covering the tumor. The non-specific symptoms such as loss of appetite, weakness, vomiting, and nausea may be seen. The lipoma located at antrum may cause obstruction as a result of prolapsing towards the duodenum.[2,11-15]

CASE REPORT

CASE 1

The first patient is a 77 years old male patient, who applied with complaints of loss of appetite, stomachache, and mild color change in stool (melena). Medical history and family history of the patient were uneventful. In the examination, the abdomen was found to be normal and there was no palpable mass, organomegaly, acid, collateral, defense, or rebound was detected. Other systemic examinations yielded normal findings. In the laboratory tests, hypochromic microcytic anemia was found. In the abdominal tomography, the stomach was not sufficiently filled with contrast agent and the walls couldn't be clearly examined in tomography. In the report, the endoscopic control in case of any clinical suspicion was recommended.

Repeated tomographic results were reported similarly. Then, the patient underwent endoscopy. In the endoscopy procedure, a 3 cm diameter mucosal

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irregularity that was narrowing the lumen located at antrum and couldn't be distinguished from gastric cancer was detected. Biopsies were obtained from the mass. No malignity was detected as a result of endoscopic biopsies, and reactive-reparative changes and chronic gastritis were reported.

The patient was then referred to the operation for surgical treatment. After the subtotal gastrectomy, the patient received no additional therapy. Together with peripheral omental tissues with 259 g weight and 14.9x9.5 cm dimensions, the material was macroscopically examined by opening along the large curvature when proximal end was open and distal end was closed using a clips. In this examination, a tumoral area obstructing the lumen, having 3.2x3.2x2.7 cm dimensions, and showing expansile growth character was detected with submucosal localization (10.5 cm from proximal end and 1.7 cm from distal end). The surface of cross-section had fatty tissue appearance. In total, 5 lymph nodes (3 around the small curvature and 2 around the large curvature) were distinguished.

In the histopathological examination of the cross-sections taken from the first case, the changes coherent with chronic gastritis at normal stomach zones and a sharply circumscribed tumoral mass containing surrounded by a thick and fibrous capsule were observed. They are composed of mature adipocytes, relatively uniform in size, lacking cytologic atypia and mitosis. Based on these findings, the cases were diagnosed with gastric lipoma and chronic gastritis (Figure 1 a, b).

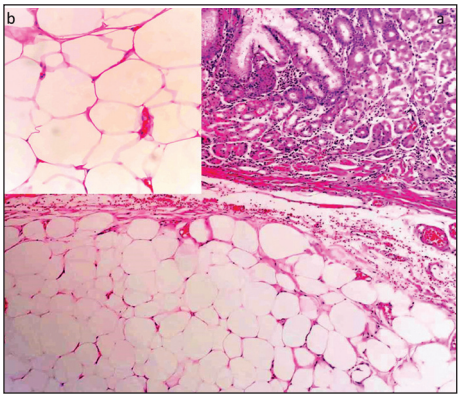

FIGURE 1a: Tumoral mass containing fat cells, thin fibrous tissues, and few congested veins covered by a relatively fibrous capsule at the region coherent with submucosa, (first case) (H&E x20). **b:** Inset shows mature fat cells exhibiting only slight variation in cellular size and shape, (first case), (H&E x40).

CASE 2

The second patient was a 65 years old female patient, who applied with dyspeptic complaints. In the endoscopic examination of the patient performed in another institution, a mass measuring 4 cm that has slightly sunken center and located at the intersection of stomach and corpus antrum was identified. Complete blood and biochemical analyses were performed and no result other than hypochromic microcytic anemia (iron deficiency anemia), hypercholesterolemia, and mild hyperglycemia was found.

In abdominal tomography, a massive lesion with luminal localization, 4x3 cm dimensions, and fat density was observed at the level of pyloric transition region. In liver, a hypodense cystic mass measuring 4x3.2 cm and significant hemorrhage was observed at segment 6. Moreover, in both kidneys, multiple parapelvic cysts (3.5 cm at medial region) with dispersed distribution were observed in both kidneys and multiple calcific and degenerated myomas in uterus. Endoscopy was recommended. In the contrast-enhanced magnetic resonance imaging was performed on the same day, a solid massive lesion located at the entry of stomach, having dimensions of 4x3 cm, showing no pathological contrast in post-contrast series, and suppressed at fat suppressed series was observed at the epigastric region. Then, in the endoscopy, a 4 cm diameter mass with external pressure appearance on the side of large curvature at antrum was identified.

A subtotal gastrectomy material weighing 256 g and measuring 14x7 cm was delivered to our department together with the peripheral omental tissue by clipping both ends. When examining the specimen by opening along the large curvature, a tumoral lesion measuring 4x3.2x2.8 cm, showing expansile growth character, obstructing the lumen, and having submucosal localization was found at the distance of 1.7 cm to distal end and 10.5 cm to proximal end. It was determined that the cross-section surface of the material had fatty tissue appearance (Figures 2 a, b).

In the histopathological examination of the cross-sections taken from the second case, the

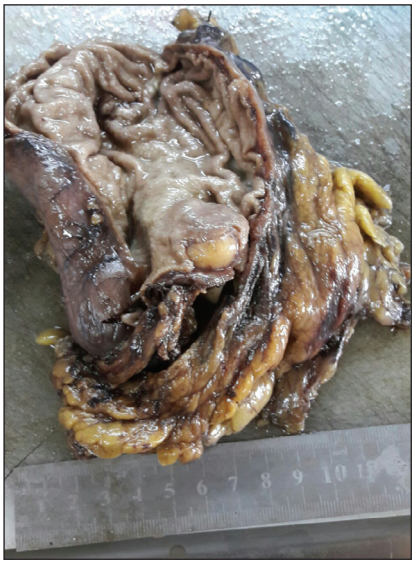

FIGURE 2a: Submucosal mass expansively pushing the lumen (second case), macroscopic view.

FIGURE 2b: Submucosal mass having fatty tissue appearance and surrounded by a thin capsule, (second case), macroscopic view.

changes coherent with chronic gastritis at normal stomach zones and a tumoral mass containing mature fat cells, thin fibrous tissues, and few congested veins covered by a relatively fibrous capsule at the neighboring zone were observed. No atypia was observed in tumoral cells. Based on these findings, the cases were diagnosed with gastric lipoma and chronic gastritis (Figure 3 a, b). The informed consent forms were obtained from the patients.

DISCUSSION

Lipoma may be seen at any region of the gastrointestinal system.[3] They are seen most frequently at the colon, especially on the right side. In several studies, it was claimed that they are observed in old women born in Europe.[3] Gastric lipomas are benign tumors that are rarely seen.[1-12] Ninety percent of gastric lipomas have submucosal localization and 10% have subserosal localization[1,2,4,5,8] They are located most frequently at antrum (75%) in the stomach.[1,3,14] In general, they are single, have soft and smooth surface and yellow color, are frequently seen at the ages of 50-60 years, and peak at 7th decade.[1,3,14] In parallel with the literature, our first case was 77 years old and the mass was located at the antrum.

The gastric lipomas are generally asymptomatic.[1,3] They are generally detected in endoscopic examinations performed for other reasons.[1,3] The complaints are related with the size of the tumor. The tumor becomes symptomatic when larger than 2 cm. The mucosa covering the tumor may become ulcerated and cause subtle or apparent hemorrhage and epigastric pain.[1,3,14,15] The most frequently reported complaint (50%) is abdominal pain. Gastrointestinal hemorrhage is the second most frequently seen symptom (37.5%). The frequency of dyspeptic complaints such as loss of appetite, nausea, and vomiting is 26% and the ones located at distal antrum may cause obstruction (33%).[1,3,14-19] The first case applied with

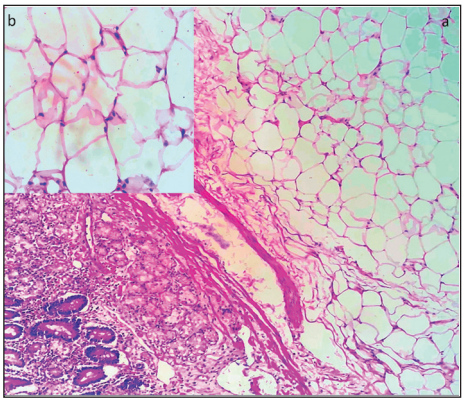

FIGURE 3a: Tumoral mass containing fat cells, thin fibrous tissues, covered by a relatively fibrous capsule at the region coherent with submucosa (second case), (H&E x20). **b:** Inset, high power view shows the tumour composed of mature adipocytes (second case) (H&E x40).

complaints of pain, loss of appetite, nausea, vomiting, and discoloration of stool. The second case applied with dyspeptic complaints. In endoscopic examination in both cases, the submucosal swollen lesions covered by mucosa with normal appearance were seen. As in both cases, the biopsies fall short in revealing the lesion since they cannot reach the submucosal layer.[1,3,15] If the biopsy is taken deep enough, the characteristic solid cordon regions consisting of submucosal lipocytes can be seen.[3] However, in the endoscopic examination, there are two hints indicating that the lesion is a lipoma. Softly sinking upon applying pressure on the lesion using endoscope or biopsy forceps during the procedure and regaining former shape when forceps is removed is named "cushion sign". On the other hand, the finding that lesion gains "tent" shape when held and retracted using forceps is called "tenting sign". Both signs are the findings supporting that the lesion is a lipoma.[1]

In barium graphs, mass image, lumen distortion, and mucosal irregularity can be observed and the "bull's eye" that is a filling effect distinguishing the lipoma from other mesenchymal tumors is another important finding. Computed tomography (CT) is a reliable diagnostic method.[1,3,14] In CT, a homogeneous and well-circumscribed mass localized in the wall and showing negative fatty tissue density at-50 and-120 Hounsfield units is observed and it cannot be distinguished from the other gastric tumors containing fatty tissue such as liposarcomas, anglipomas, and teratoma.[1] However, CT falls short in detecting the localization on the gastric wall. In the present case, to the contrary with literature, the abdominal tomography didn't yield the desired results. The endoscopic ultrasonography (USG) is one of the best methods in determining the wall localization of the lesion. Moreover, endoscopic USG enables the submucosal biopsy procedure. However, it is not sufficient for distinguishing the malignant and benign ones. No malignant transformation was reported but there may be synchronous malignant lesions.[1] The researchers reported that the transcutaneous echography to be performed on a stomach full with fluid can be used instead of other expensive endoscopic methods.[3]

From macroscopic aspect, the tumor seems as a well-circumscribed mass with submucosal localization. Gastric lipomas appear as sharply demarcated, solitary, smooth, soft masses, most often more than 2 cm in diameter with an average size of 6.5 cm.[16,17] The large lesions may be ulcerated. Secondary fibrotic or hemorrhagic changes can be observed on the floor of ulcer.[3] On cut surface, they appear fibrous capsule, bright yellow, round and greasy, unless they have become infracted.[16,17] In both of our cases, the mass was sharply demarcated, showing expansile growth character, obstructing the lumen, and having submucosal localization, smooth, nodular lesion, It was determined that the cross-section surface of the material had fatty tissue appearance, surrounding thick, fibrous capsule and a yellow, round, greasy cut surface.

Histopathologic examination, lipomas appear similar to surrounding fat as they are composed of mature fat cells that may vary slightly in size and shape and tend to be slightly larger than surrounding fat. The nuclei are regular, there is an absence of nuclear hyperchromasia, and they lack cytologic atypia.[17] As the mass grows, it may cause thinning of the mucosa and in some cases, ulceration. In these cases, sclerotic septas extending from the base of the ulcer and penetrating the tumor are detected. This is characteristic of an atypical granulation tissue. In these cases, proliferation of pleomorphic spindle-shaped or stellate cells in the stroma can be observed.[1-17,20-22] Both benign and malignant fatty tumors stain positively for vimentin and S-100 protein.[17] In the histopathological examination of our cases, the changes coherent with chronic gastritis at normal stomach regions and a tumoral mass containing mature fat cells, thin fibrous tissues, and few congested veins covered by a relatively fibrous capsule at the neighboring region coherent with submucosa were observed.

Gastric liposarcomas are at the beginning of the differential diagnosis of gastric lipomas.[23] Clinically, there is no specific distinguishing feature for the two tumors. Perhaps the most helpful imaging method for radiological examinations is CT. The presence of a well-circulated fatty dense tumor with large areas in the submucosa supports the diagnosis of liposarcoma.[16] CT can also rule out possible secondary le-

sions and lymphadenopathy. As we mentioned above, lipomas are macroscopically solitary, well-circumscribed, soft consistency, usually larger than 2 cm. The cross-sectional surfaces are bright yellow, encapsulated, mostly round lesions. Large lesions tend to be ulcerated and histopathologically, submucosally located, sharply demarcated, thick and fibrous encapsulated. They are composed of mature adipocytes, relatively uniform in size and lacking cytologic atypia. However, as the diameter increases, traumatic and inflammatory changes occur, causing necrosis, ulceration and bleeding. Morphologically, secondary changes such as nuclear hypertrophy, hyperchromasia, fat necrosis, fatty cysts and foamy macrophages can be seen, which may suggest a well-differentiated liposarcoma.[1-3,16,17,24] However, the presence of lipoblasts demonstrative for liposarcoma leads us to the diagnosis of liposarcoma with radiological findings. By immunohistochemistry, MDM2 and CDK4 immunoreactivity are observed in liposarcoma cases.[1-3,16,17] In addition, GIST cases from submucosal lesions are also included in the differential diagnosis. These GIST cases are distinguished by histopathological findings and immunohistochemically c-KIT, DOG1 and CD34 positivity.[20,23]

The treatment of gastric lipoma is controversial since it is rarely seen and the large ones are symptomatic. In general, the asymptomatic lipomas smaller than 2-3 cm do not require surgery or the endoscopic excision yields satisfactory results.[15] For the tumors larger than 2-3 cm, the surgical excision or subtotal gastrectomy would be a sufficient treatment since the endoscopic approach is risky in terms of perforation.[15] In the present case, the subtotal gastrectomy was applied and no additional therapy was needed.

In conclusion, especially the patients with prolonged dyspeptic complaints should be examined more carefully and gastroscopic imaging or other imaging methods should be planned. No diagnosis of peptic ulcus should be made and no medical treatment should be initiated before the gastroscopic examination.

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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: *Şirin Küçük;* ***Design:*** *Şirin Küçük, İzzet Göker Küçük;* ***Control/Supervision:*** *Şirin Küçük, İzzet Göker Küçük;* ***Data Collection and/or Processing:*** *Şirin Küçük, İzzet Göker Küçük;* ***Analysis and/or Interpretation:*** *Şirin Küçük;* ***Literature Review:*** *Şirin Küçük, İzzet Göker Küçük;* ***Writing the Article:*** *Şirin Küçük, İzzet Göker Küçük;* ***Critical Review:*** *Şirin Küçük;* ***References and Fundings:*** *Şirin Küçük;* ***Materials:*** *Şirin Küçük.*

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