ABDOMINAL IMAGING

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A Case of Fibrovascular Polyp of the Stomach: Sonographic and Computed Tomographic Findings

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Abstract

Fibrovascular polyps are rare, pedunculated, tumor-like lesions that are usually found in the esophagus; occurrence in the stomach is very rare. To our knowledge, sonographic and CT findings of a fibrovascular polyp in the stomach have never been reported. Here, we report a case of a fibrovascular polyp that was identified in the gastric antrum and prolapsed into the duodenal bulb. Sonography revealed a hyperechoic polypoid mass in the gastric antrum, which prolapsed into the duodenal bulb upon a change in the patient's position. CT also revealed a pedunculated polypoid mass with an inner fatty component.

Keywords: Stomach, Fibrovascular Polyp, Ultrasonography, Computed Tomography

1. Introduction

Fibrovascular polyps (FVPs) are rare, benign, pedunculated, submucosal tumor-like lesions composed of fibrous tissue, adipose tissue, and vascular components (1). Depending on the proportion of these pathologic components in a given lesion, FVPs have also been referred to as lipomas, fibromas, hamartomas, fibrolipomas, fibromyxomas, or fibroepithelial polyps (2). FVPs are usually found in the esophagus, hypopharynx, or, very rarely, in the colon (1, 3). FVPs arising from the stomach are very rare entities; only one previous case has been reported (1). Although that prior report did describe the computed tomographic (CT) findings of a typical FVP, it did not focus on these imaging findings. In addition, sonographic findings have not yet been reported. Thus, we report the sonographic and CT findings of a case of FVP of the stomach in a patient who presented with melena.

2. Case Presentation

A 54-year-old woman was admitted to our hospital with melena of one week's duration. Physical examination revealed pale conjunctivae. Her hemoglobin level was 4.4 g/dl, and all other laboratory findings were within normal limits. Emergent gastroscopy was performed, and a pedunculated polyp with erosion at its head was observed on the posterior wall of the gastric antrum. However, evidence of active bleeding was not identified on gastroscopy.

Abdominal sonography and CT scan were subsequently performed to evaluate other possible causes of the patient's symptoms. Sonography of the upper abdomen was performed using an iU22 scanner and a 2- to 5-MHz convex transducer (Philips Medical Systems, Bothell, WA, USA). Sonography revealed a hyperechoic polypoid mass with a size of approximately 4 × 2 cm, mostly covered by thickened hypoechoic mucosa (Figure 1A), which was confirmed microscopically. The right lateral side of the mass was not covered with hypoechoic mucosa. The mass prolapsed to some extent toward the duodenum when the patient's position changed from supine to right lateral decubitus (Figure 1B), suggesting a pedunculated morphology. Contrast-enhanced CT was performed to identify obscure bleeding in the upper gastrointestinal tract, and revealed an intraluminal polypoid mass measuring approximately 4 × 2 cm in the posterior wall of the distal gastric antrum and protruding into the duodenum (Figure 2). The mass was visualized with central fat attenuation and was covered with enhanced mucosa, except for the tip.

Laparoscopic partial gastrectomy was performed due

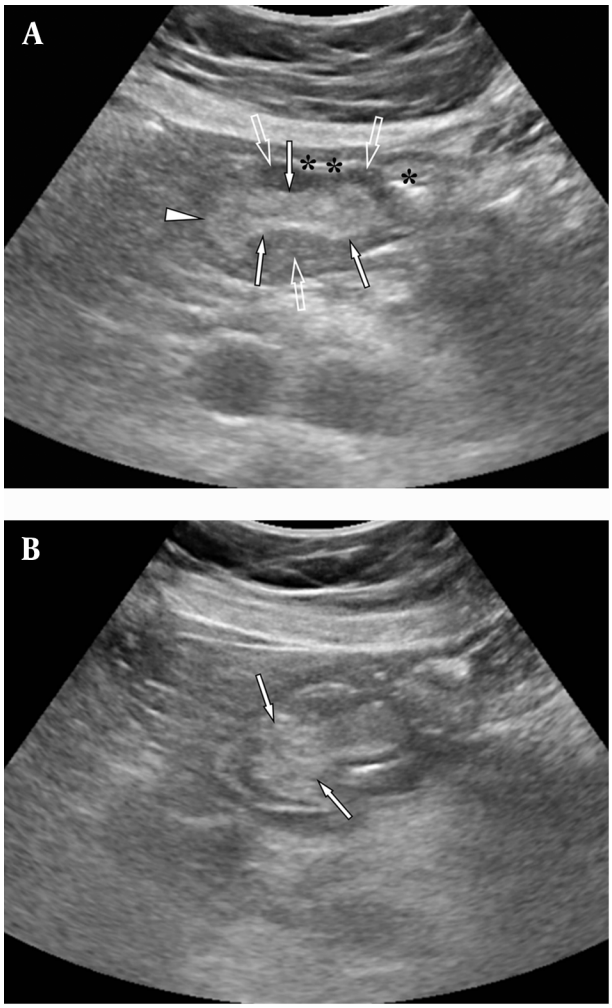

Figure 1. A 54-year-old woman with melena and severe anemia. A, Transverse gray-scale sonography of the epigastrium in the supine position shows a hyperechoic polypoid mass (arrows) in the gastric antrum lumen (asterisks), which is covered by thickened hypoechoic mucosa (open arrows) except for the right lateral side (arrowhead), suggesting denuded mucosa; B, On transverse gray-scale sonography of the epigastrium in the right lateral decubitus position, the mass (arrows) prolapsed toward the duodenum, indicating a pedunculated morphology.

to the risk of recurrent bleeding. The resulting gross specimen included an intraluminal polypoid mass measuring approximately 4 × 2 cm in size, with focal denudation of the mucosal surface of the tip. The cut surface of the mass revealed lobulated contours with a whitish-yellow solid area, as well as focally denuded mucosa (Figure 3A). Microscopically, most of the mass was located in the submucosal layer and was composed of mature adipose tissue with irregularly-shaped blood vessels and loose connective tissue (Figure 3B). These findings are consistent with FVP. The patient was discharged after an uneventful postoperative course.

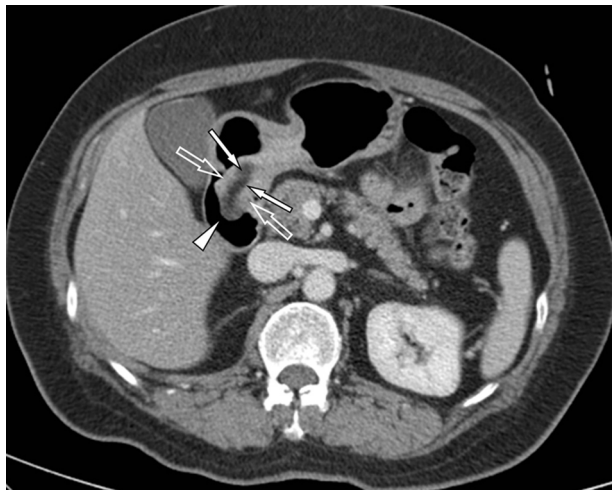

Figure 2. Contrast-enhanced axial CT imaging reveals an intraluminal polypoid mass in the distal antrum of the stomach with central fatty attenuation (arrows), which is covered by thickened hyper-attenuating mucosa (open arrows), except for a denuded mucosal portion (arrowhead). Note the protrusion of the mass into the duodenum.

3. Discussion

FVPs are rare benign tumors that usually occur in the proximal third of the esophagus (2). The mass is typically pedunculated and attached with a stalk to the esophagus. Dysphagia is the most common symptom of esophageal FVP. Other symptoms include regurgitation of the mass, foreign-body sensation, respiratory symptoms, and sometimes, bleeding from ulceration at the tip of the mass (2, 4). However, in the present case, the main symptom of the mass was melena, which was similar to a previously reported gastric FVP (1). Melena in both of these cases of gastric FVP may have been due to focal ulcerative changes of the mass.

The imaging findings of FVPs are dependent on the proportions of fat and fibrovascular components in these lesions (2). On CT, FVPs may manifest as heterogeneous masses with areas of fat attenuation mixed with areas of soft-tissue attenuation from fibrovascular components. Similar to CT findings, the sonographic findings of FVPs may include hyperechoic areas of fat tissue mixed with hypoechoic areas of fibrovascular components. Sometimes, one of the two components may predominate (5). The present case was predominantly composed of fat; thus, it was hyperechoic on sonography and demonstrated fat attenuation on CT.

The present case is the second case report of FVP arising from the stomach. The CT findings for the previously reported gastric FVP showed a polypoid mass located in the anterior wall of the lesser curvature of the gastric antrum,

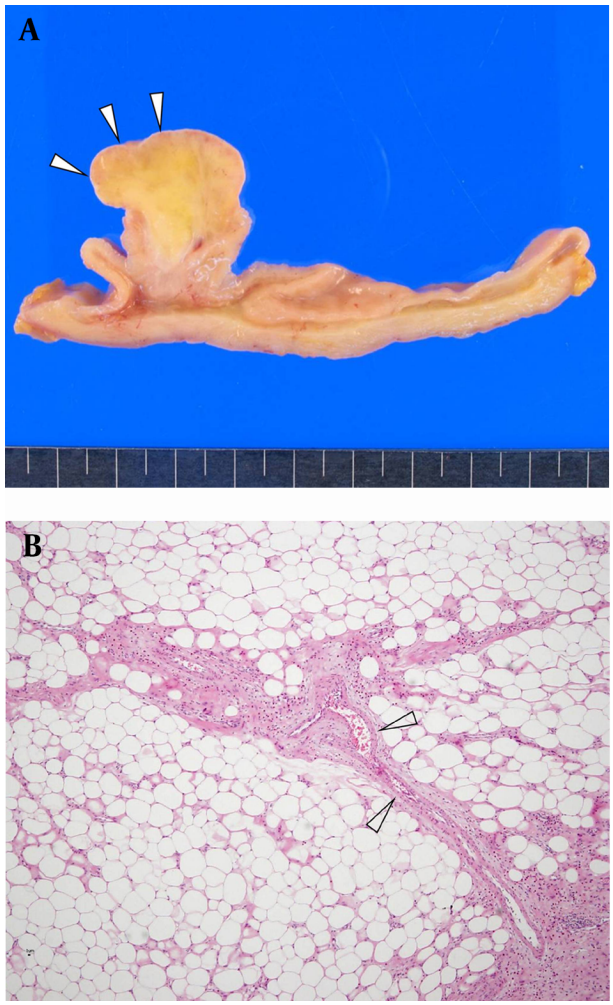

Figure 3. A, The cut surface of the gross specimen of the mass reveals a lobulating contoured polypoid mass with a whitish-yellow solid area. Some portion of the overlying mucosa is denudated (arrowheads); B, On photomicrograph (H & E staining, original magnification, ×100), the mass was composed of mature adipose tissue with irregularly-shaped blood vessels (open arrowheads) and loose connective tissue.

with central heterogeneous low density, suggesting only a minor component of fat tissue and marginal enhancement. In comparison with the previous report, the FVP of the present case contained more fat and was more pedunculated, similar to the predominant imaging features of esophageal FVPs.

Fatty masses in the stomach are rare, and gastric FVP should be included in their differential diagnoses. Other lipomatous masses involving the stomach include lipomas, angiolipomas, and liposarcomas (6). Lipomas are the most common gastric lipomatous tumors and are mostly located in the antrum. CT images will show a well-defined mass with homogeneous or slightly heterogeneous fatty attenuation, occasionally with a fibrous capsule (6). The present case of FVP was slightly more heterogeneous than a typical lipoma. In addition, fatty masses that are covered with thick mucosa may suggest FVPs, rather than lipomas. Angiolipomas are composed of mature adipose tissue with interspersed capillaries, which may be similar to the pathologic features of FVPs. The CT findings for angiolipoma suggest a fatty mass with strong contrast enhancement of vascular structures (6). A liposarcoma is usually described as a large exophytic mass connected to the gastric wall. Histologically, there are four types of liposarcoma: well-differentiated, myxoid, round cell, and pleomorphic. Among these, well-differentiated liposarcoma shows heterogeneous fat attenuation with less-aggressive features than other types of liposarcoma, which may make it difficult to differentiate FVP (6, 7).

Any intraluminal movable masses that originate from the stomach should also be considered in the differential diagnosis of FVP. Pedunculated polyps, inflammatory fibroid polyps, or any mass with a stalk can be movable and may occasionally be found prolapsed into the duodenal bulb (8). Therefore, when the fat component of FVP is scarce, differentiating it from other movable intragastric lesions may be difficult.

There has not yet been a report on the sonographic findings of gastric FVPs; only the endoscopic sonographic findings for esophageal FVPs have been reported (9). In the present case, the main sonographic finding was a hyperechoic mass, suggesting a fat-containing lesion, which is somewhat similar to the sonographic findings in gastric lipoma (10). In addition, another sonographic finding in the present case was the mobile nature of the mass when the patient's position changed during the sonographic examination. Such a finding suggests the presence of a stalk, which may be more clearly presented on sonography than on CT.

In conclusion, although its incidence is very low, gastric FVP may present as a fat-containing, pedunculated mass on both sonography and CT. The imaging findings for gastric FVP clearly correlate to its pathology. Thus, when a fat-containing, intraluminal mass with a mobile nature is encountered in the stomach on sonography or CT, FVP should be considered in the differential diagnosis.

Footnotes

Authors' Contribution: Study concept, design and editing: Yun Kyung Shin and Hyun Cheol Kim; data acquisition: Dal Mo Yang and Sang Won Kim; drafting of the manuscript: Sun Jung Rhee and Jong Soo Shin; analysis and interpretation of data: Yun Kyung Shin, Hyun Cheol Kim and Kyu Yeoun Won; literature search: Sang Won Kim and

Jong Soo Shin; critical revision of the manuscript for important intellectual content: Yun Kyung Shin, Hyun Cheol Kim and Sun Jung Rhee; study supervision: Hyun Cheol Kim.

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