

A rare submucosal gastric tumor. Gastric schwannoma

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Abstract

Schwannomas, which arise from the Schwann cells of the neural plexus on the gastric wall, are slow-growing, generally asymptomatic and frequently benign neoplasms. Gastric schwannomas account for only 0.2% of all gastric tumors. Gastrointestinal stromal tumors (GIST) should firstly be taken into consideration in the differential diagnosis of submucosal mass lesions originating from the gastric wall. Gastric schwannomas and GISTs are generally seen in middle-aged patients and they have similar clinical characteristics. Surgical resection is the selected treatment method for gastric schwannomas. Definitive diagnosis is achieved through histopathological and immunohistochemical analyses. The aim of this study was to present the case of a patient who had presented with anemia symptoms, received laparoscopic resection because of gastric submucosal mass lesion, and diagnosed with gastric schwannoma.

Keywords: Gastric Schwannoma; Gastrointestinal Stromal Tumors; Laparoscopy.

INTRODUCTION

Mesenchymal tumors of the gastrointestinal system (GIS) are classified as GISTs, leiomyomas, leiomyosarcomas, and schwannomas. The most frequently seen one is the GISTs (1). Schwannomas arise from the Schwann cells, are also known as neurinomas, slow-growing, generally asymptomatic, and frequently benign neoplasms. They are rarely seen in the GIS. They account for only 0.2% of all gastric tumors (2). Gastric schwannomas and GISTs are generally seen in middle-aged patients and they have similar clinical characteristics. Conventional imaging methods and endoscopic procedures, however, fail to yield a clear differentiation between these two mesenchymal tumors for a definitive diagnosis (3). Definitive diagnosis can be achieved through histopathological and immunohistochemical analyses of the surgical material. The aim of this study was to present the case of a patient who had received laparoscopic wedge resection having been pre-diagnosed with GIST but was diagnosed with gastric schwannoma as revealed by final pathology results.

CASE REPORT

A 75-year-old female patient presented to our clinic with complaints of fatigue, exhaustion, and lack of appetite.

She had had a history of GIS hemorrhaging about a month before her presentation. Her medical history revealed no comorbidities other than hypertension. Her physical examination unveiled no special characteristics. The results of her laboratory analyses were Hb: 9.8 gr/dl, Hct: 27.3% and her other laboratory results were within normal bounds. The patient's upper GIS endoscopy showed a polypoid lesion of about 5cm in size with smooth borders and ulcerated middle, located in the gastric corpus' greater curvature (Figure 1). The results were concordant with GIST, therefore no biopsy was performed. The abdominal computerized tomography (CT) of the patient demonstrated a mass lesion of about 48*29 mm in size on the gastric corpus' antrum level, protruding to the lumen with a pronounced contrast involvement (Figures 2A, 2B). In the light of current results, the patient was pre-diagnosed with GIST and surgical procedure was planned. The lesion was resected with sound borders by intraoperative gastroscopy and simultaneous laparoscopic gastric wedge resection (Figures 3A, 3B).

There were no intraoperative complications. The patient was discharged without any problems on the 4th postoperative day. The pathological analysis revealed an off-white colored solid lesion of 4.7*4.5*2.5 cm in size with smooth borders. The results of the immunohistochemical

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analysis were reported to be S-100 diffuse positive, CD 117, CD 34, smooth muscle actin (SMA), desmine negative, Ki-67 index of 4-5%. Mitosis 4/50 BBA, necrosis, and hemorrhaging were not observed, while cytologic atypia was mild and surgical borders were regular. In the light of these histopathological and immunohistochemical results, the case of the patient was reported to be concordant with schwannoma. The patient's initial follow-up of the first 6 months after surgery did not develop local recurrence and distant metastasis.

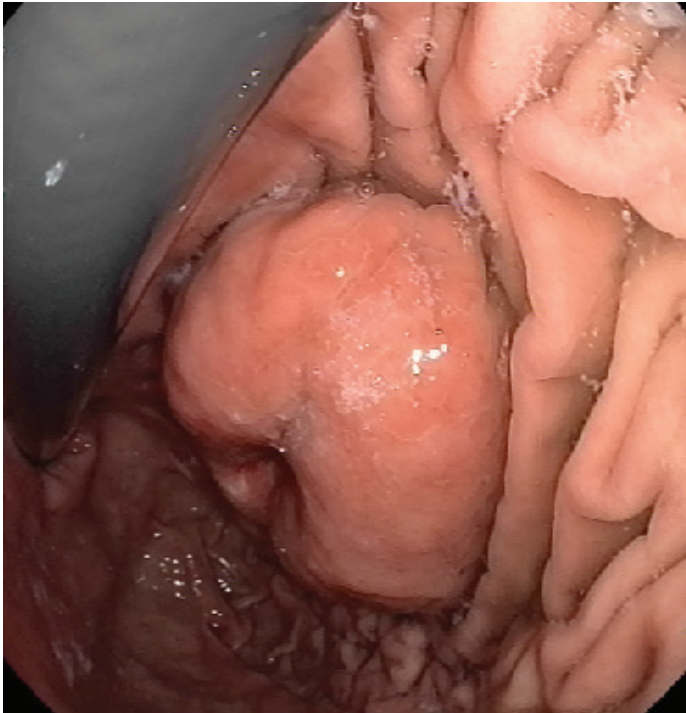


Figure 1. Endoscopic image of the gastric mass



Figure 2A. Abdominal CT image of the gastric mass lesion protruding to the lumen (Axial plane)

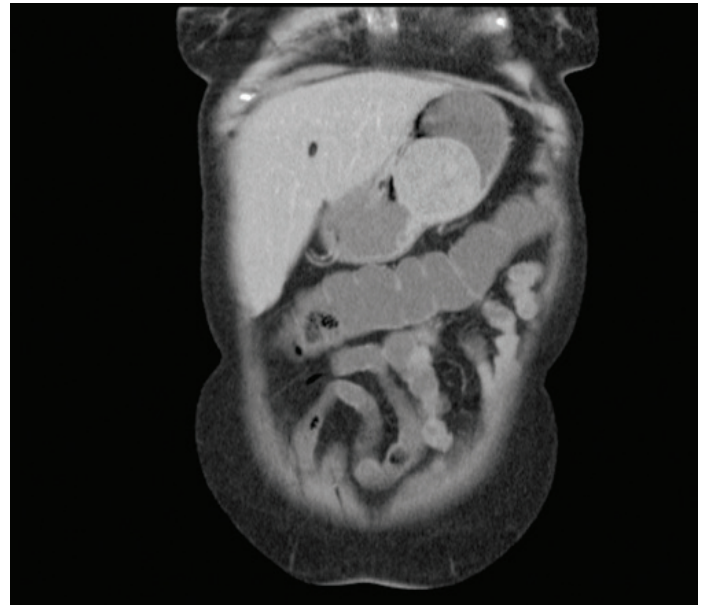


Figure 2B. Abdominal CT image of the gastric mass lesion protruding to the lumen (Coronal plane)



Figure 3A. Image of the surgical piece (Anterior)

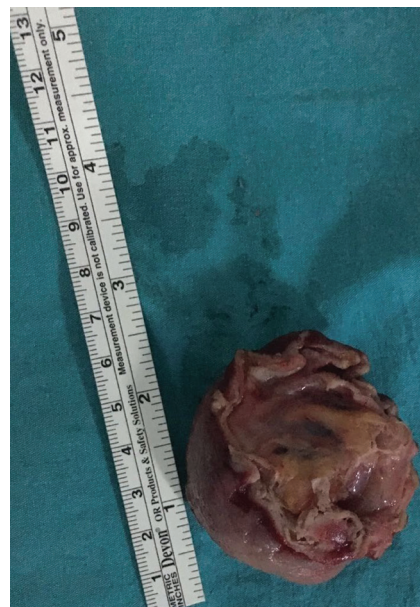


Figure 3B. Image of the surgical piece (Posterior)

DISCUSSION

Schwannomas are normally benign neurogenic tumors arising from the Schwann cells found around the axons of peripheral nerves. Gastric schwannomas make up only 0.2% of all gastric tumors (2). They originate from the Schwann cells of the neural plexus of the gastric submucosa and muscularis propria wall. They are generally asymptomatic and can randomly be detected endoscopically and radiologically. Epigastric pain, GIS hemorrhaging because of mucosal ulceration and anemia symptoms can sometimes be observed. History of GIS hemorrhaging and anemia were present in our case as well. There is limited information on the imaging characteristics of such tumors as gastric tumors are rare.

Upper GIS endoscopy, CT, and endoscopic ultrasonography (EUS) may prove to be helpful in diagnosis but definitive diagnosis can be achieved by pathological analyses. Gastric schwannomas can be seen as submucosal masses with ulcerated tops at a rate of 25-50%, as is the case with GISTs, by endoscopy (4).

The mucosa on the lesion is generally sound and endoscopic mucosal biopsy is not adequate enough for a definitive diagnosis. EUS can yield sufficient information to differentiate mesenchymal tumors from the normal muscular tissue and on the layer that the tumor arises from. EUS and thin-needle aspiration biopsy are currently suggested to be the standard methods for the sampling of submucosal tumors (5). Homogenous images are the common characteristics of gastric schwannomas as revealed by CT and they are seen as hypodense solid mass lesions with smooth borders and lobule contours (6). In spite of the macroscopic morphological similarities of mesenchymal tumors, their immunohistochemical characteristics are heterogeneous. S-100 is positive, CD 117, CD 34, SMA and desmine are negative in gastric schwannomas (7). GISTs should initially be taken into consideration in the differential diagnosis of submucosal mass lesions arising from the gastric wall. About 10 to 30% of GISTs have malign behavior. Gastric schwannomas, on

the other hand, are benign tumors with a good prognosis. Surgical resection is the selected treatment method for gastric schwannomas. All the data published so far have demonstrated that GIS schwannomas had perfect prognosis following surgical resection.

Consequently, gastric schwannomas that have a benign potential should be taken into consideration in the differential diagnosis of gastric submucosal mass lesions. Definitive diagnosis is achieved through histopathological and immunohistochemical analyses. Today minimally invasive methods are successfully performed especially for the mesenchymal tumors arising from the stomach. Surgical resection with negative surgical borders should be the selected treatment method for gastric schwannoma lesions.

Conflict of Interest, No conflict of interest was declared by the authors.

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