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Synchronous gastric leiomyoma and intramuscular abdominal wall granular cell tumor with similar imaging features: A case report

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ABSTRACT

INTRODUCTION: Gastric leiomyomas are benign mesenchymal tumors, comprising about 2.5% of gastric neoplasms, which can be difficult to differentiate from gastrointestinal stromal tumors which have malignant potential. Granular cell tumors in the abdominal wall are also rare. Since mesenchymal tumors are difficult to diagnose by imaging, further studies are needed to establish the diagnosis.
PRESENTATION OF CASE: A 60-year-old asymptomatic woman underwent routine upper endoscopy and was found to have a gastric submucosal lesion. Computed tomography scan also showed an abdominal wall mass. The appearance of both lesions on imaging studies were similar, but it was unclear if the two lesions had the same origin. Endoscopic ultrasound-guided fine needle aspiration biopsy of the gastric lesion was insufficient to establish the diagnosis. Laparoscopic-endoscopic cooperative resection of the gastric lesion and ultrasound-guided core-needle biopsy of the abdominal wall mass enabled pathological diagnosis of both lesions.
DISCUSSION: Diagnostic imaging findings of these two lesions were similar. Histologic and immunohistochemical studies are essential to establish a definitive diagnosis. Laparoscopic-endoscopic cooperative surgery may be an effective minimally invasive approach, allowing both pathological diagnosis and complete resection of a gastric submucosal tumor, especially when endoscopic-ultrasound guided fine needle aspiration or biopsy fails to make the diagnosis.
CONCLUSION: Laparoscopic-endoscopic cooperative surgery can be an effective minimally invasive approach to resect some lesions. This is first report of the patient with a synchronous gastric leiomyoma and an intramuscular granular cell tumor in the abdominal wall.

1. Introduction

Gastric leiomyomas represent approximately 2.5% of all gastric neoplasms [1], while gastrointestinal stromal tumors (GISTs) are the most common mesenchymal tumors of the stomach [2]. Gastric leiomyomas share many characteristics with GISTs, although GISTs have malignant potential [3,4]. Diagnosis of a gastric leiomyoma by imaging studies is often difficult [1,5]. Endoscopically obtained biopsy specimens may be insufficient to establish the diagnosis due to the thick overlying mucosa [6]. Fine-needle aspiration obtained with or without endoscopic ultrasound guidance may be adequate to establish the pathological diagnosis of a submucosal tumor [6]. The diagnostic yield of aspiration biopsies of gastric lesions is not high [7]. Granular cell tumors are rare and typically originate from the head, neck and tongue [8]. Overall, <1% of all granular cell tumors are malignant [9]. The abdominal wall is an extremely rare site for granular cell tumors [10].

We report a patient with a gastric leiomyoma and an intramuscular abdominal wall granular cell tumor which showed similar features on diagnostic imaging. Laparoscopic-endoscopic cooper-

Abbreviations: GIST, gastrointestinal stromal tumor; FNA, fine needle aspiration; SUV, standardized uptake value; CT, computed tomography; MRI, magnetic resonance imaging; ^{18}F-FDG-PET, 18F-fluorodeoxyglucose positron emission tomography.

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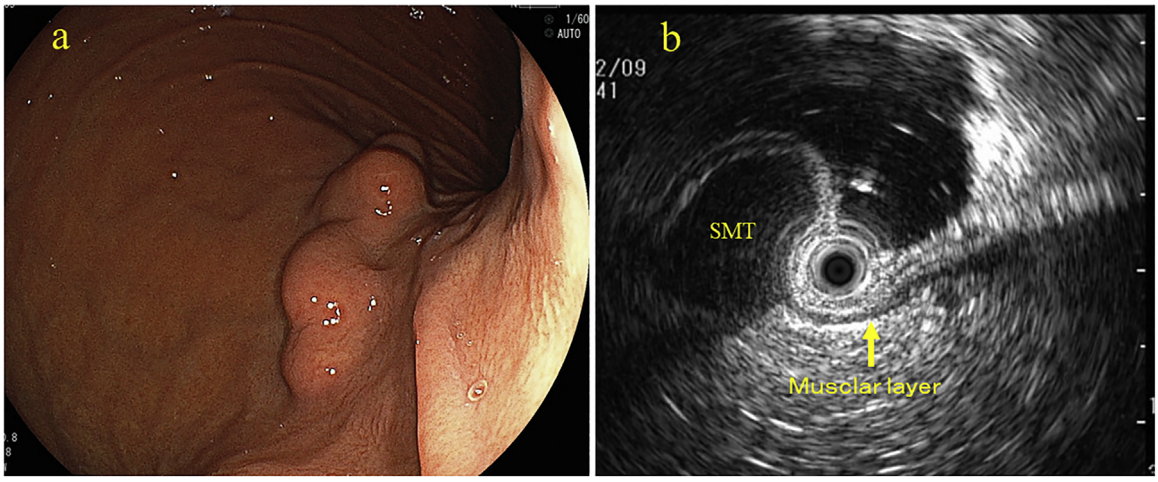

Fig. 1. Upper gastrointestinal endoscopy showed a 30 mm submucosal polypoid lesion on the posterior wall of the proximal stomach (a). Endoscopic-ultrasound showed that the submucosal tumor was homogenous with an echogenicity similar to that of the normal muscularis (arrow) (b).

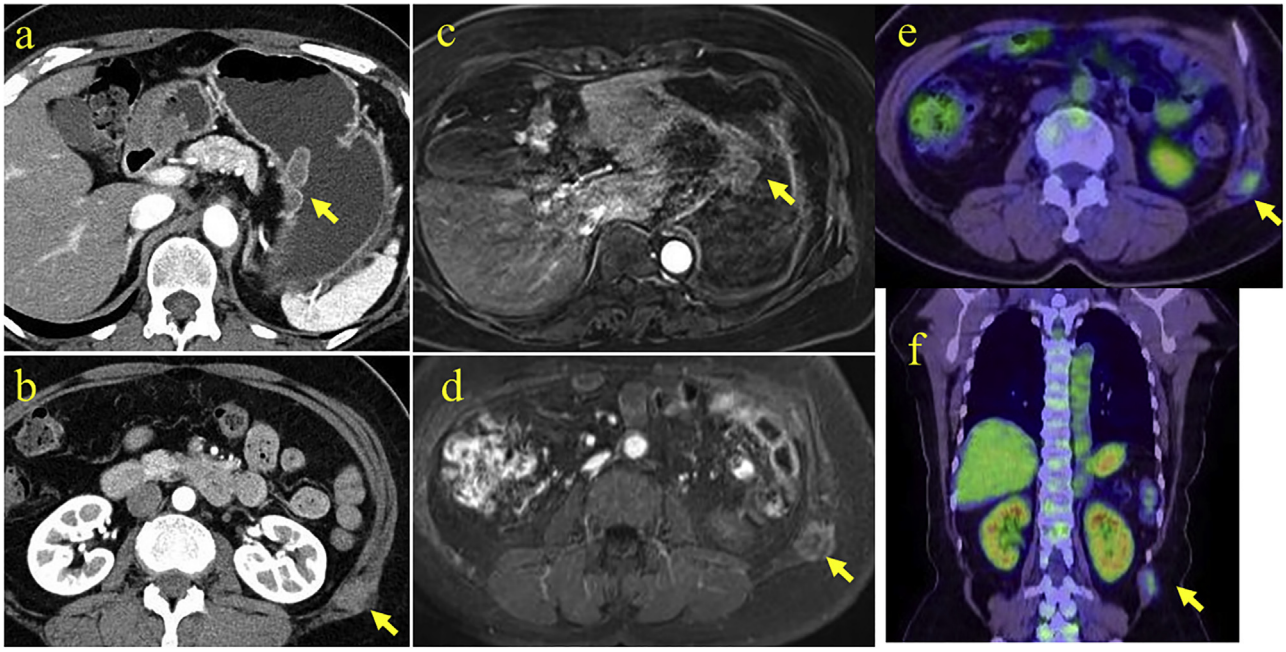

Fig. 2. Contrast-enhanced computed tomography (CT) scan revealed poorly enhanced tumors in the stomach (a) and the anterior abdominal wall (b) (arrows). Axial enhanced T1-weighted image on magnetic resonance imaging showed similarly homogeneous moderate enhancement in both gastric (c) and abdominal wall lesions (d) (arrows). 18F-fluorodeoxyglucose positron emission tomography CT scan revealed 18FDG uptake only in the abdominal wall lesion with a maximum standardized uptake value of 1.92 (e, f) (arrows).

ative surgery enabled both establishing a pathological diagnosis and resection of the gastric submucosal tumor [11]. This work is reported in line with the SCARE criteria [12].

2. Presentation of case

An asymptomatic 60-year-old Japanese woman with no significant past medical history underwent routine upper endoscopy, which revealed a 30 mm submucosal lesion on the posterior wall of the proximal stomach (Fig. 1a). Endoscopic ultrasound showed a homogeneous low echo lesion in the muscularis of the gastric wall (Fig. 1b). Endoscopic ultrasound-guided fine-needle aspiration biopsy was performed twice, but was insufficient to establish a diagnosis. An incidental soft tissue mass was found in the anterior abdominal wall by contrast-enhanced computed tomography (CT) scan, and further evaluated with magnetic resonance imaging (MRI). CT scan revealed poorly enhancing lesions in the stomach (Fig. 2a) and anterior abdominal wall (Fig. 2b). Axial T2 – weighted images on MRI scan showed a homogeneous low signal intensity and enhanced T1-weighted image showed homogeneous moderate enhancement of both the gastric (Fig. 2c) and abdominal wall lesions (Fig. 2d). Fluorine-18 fluorodeoxyglucose positron emission tomography (^{18}F-FDG-PET) CT revealed ^{18}F-FDG uptake only in the abdominal wall tumor with a maximum standardized uptake value (SUV_{max}) of 1.92 (Fig. 2e, f). It was considered that the gastric submucosal tumor and abdominal wall tumor may be of similar origin, possibly with malignant potential. Laparoscopic-endoscopic cooperative surgery was used to resect the gastric submucosal tumor. Ultrasound-guided core-needle biopsy of the abdominal wall tumor was performed. The gastric submucosal tumor was composed of two white solid areas, each about 20 mm (Fig. 3a). Histopathologic examination showed elongated fusiform cells with