Gastric Calcifying Fibrous Tumor: A Clinicopathologic Analysis of 2 Cases

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Abstract
Calcifying fibrous tumors (CFTs) are rare benign mesenchymal tumors which show a predilection for soft tissue and the abdominal cavity. CFT usually affects children and young adults. To date, only twenty cases of CFTs have been reported in the literature confined to the stomach. We presented here two cases of gastric CFTs. One patient was a 55-year-old man and the other was a 56-year-old woman. The two patients presented with slight upper abdominal pain and dyspepsia. The two tumors both originated in the gastric body and gastric endoscopy revealed polypoid submucosal masses, covered by an intact mucosa. Both of the patients accepted a wedge resection of the stomach. Histologically, the tumor was typical with uniformly hypocellular coarse collagen, lymphoplasmacytic infiltrates and psammomatous calcifications. Immunohistochemically, the tumor cells were positive for vimentin and negative for CD117, CD34, DOG-1, S100, smooth muscle actin, desmin and ALK. The two patients with available follow-up had no evidence of recurrence after 19 and 24 months.

Keywords: Stomach; Calcifying Fibrous Tumor; Gastrointestinal Stromal Tumors

Abbreviations: CFT: Calcifying Fibrous Tumor; SMA: Smooth Muscle Actin; ALK: Anaplastic Lymphoma Kinase; GIST: Gastrointestinal Stromal Tumors; IMT: Inflammatory Myofibroblastic Tumor

Introduction
Calcifying fibrous tumor (CFT) is a rare benign mesenchymal tumor originally described by Rosenthal and Abdul-Karim as childhood fibrous tumor in two girls [1]. CFT was initially thought to be a reactive lesion resulting from tissue healing. However, recent studies demonstrated CFT is a real tumor with a tendency for local recurrence [2]. CFT of the stomach is quite rare [3-5]. Herein we present two cases of stomach CFTs and analyzed the clinicopathologic features of them. In addition, we reviewed the literature and differential diagnosis.

Case Report

Case 1

A 55-year-old man came to our hospital complaining of dyspepsia and slight upper abdominal pain from half a month ago. Physical examination and laboratory findings were normal. The patient underwent an endoscopic examination and revealed a submucosal mass at the greater curvature of the gastric body (Figure 1). Computed tomography scan demonstrated a well-circumscribed and homogeneous round mass at the great curvature of the gastric body. Then the patient accepted laparoscopic wedge resection of the gastric body. Macroscopically, the tumor was covered by intact mucosa and well-defined, measuring 1.5 × 1.0 cm. The cut surface was white to yellow. Microscopically, the tumor was well-circumscribed, but non-encapsulated. The tumor was surrounded by a peripheral cuff of lymphoid aggregates. The tumor cells were positive for vimentin and negative for CD117, CD34, DOG-1, S100, smooth muscle actin, desmin and ALK. The patient with follow-up had no evidence of recurrence after 9 months.

Case 2

A 59-year-old woman was admitted to our hospital and gastroscopy revealed a mass in the gastric body. A wedge resection of the stomach body was performed. Gross examination revealed a well-defined solid mass with overlying gastric mucosa, measuring 1.2 × 0.7 cm. The cut surface was firm and white-yellow. Histologically and immunohistochemically, the manifestation of the tumor was similar to that of the case 1. The patient with follow up had no evidence of recurrence after 14 months.
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Discussion

CFTs are rare, benign mesenchymal tumors and only twenty cases have been reported confined to the stomach. Most tumors were incidental findings at autopsy or during surgery for other purpose. Contrasting with CFTs of soft tissue, gastric tumors have higher age and smaller tumor size. These facts suggest that gastric CFTs may have different pathogenic pathways from their soft tissue counterpart. Furthermore, most CFTs are located in the stomach body, rare in the antrum and other sites [6,7]. Calcifying fibrous tumors must be included in the differential diagnosis from other gastric mesenchymal neoplasms such as inflammatory fibroid polyp, schwannomas, gastrointestinal stromal tumors (GIST) and inflammatory myofibroblastic tumor (IMT).

Inflammatory Fibroid Polyp: Inflammatory fibroid polyps are located mostly in the antrum. Eosinophilidominant inflammatory cell infiltrate is the feature of this tumors [8].

GIST: Psammomatous calcifications and lymphoplasmacytic infiltrates are not features of GISTs and most GISTs express CD117, DOG-1 and CD34 [9].

Gastric Schwannoma: The gastric schwannoma demonstrate strong S100 reactivity [10,11].

IMT: Most of the IMTs demonstrate immunoreactive for both SMA and ALK [12].

In summary, gastric CFTs are distinct clinicopathological body from their soft tissue counterparts. It could be demonstrated by their smaller tumor size, higher age at presentation, and uniformly benign course without local recurrence. The typical morphology and immunohistochemical patterns of CFTs will help to distinguish them from GIST and other spindle cell lesions of the stomach.

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