Case Report

Gastrointestinal stromal tumor with synchronous gastric cancer: report of a case and review of literature

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Abstract: Gastrointestinal stromal tumors (GISTs) are mesenchymal tumors of the gastrointestinal tract with immunohistochemical reactivity for CD117 antibody. Gastrointestinal stromal tumor with synchronous gastric cancer is rare. A 69-year-old male presented with one-week history of epigastrium pain and vomit was admitted to our hospital. Subtotal gastrectomy and D2 lymph node dissection were performed, and reconstruction was provided with Billroth I procedure. Pathological examination of the specimens revealed gastrointestinal stromal tumor and poor-differentiated gastric cancer, respectively.

Keywords: Gastrointestinal stromal tumor, gastric cancer, stomach

Introduction

Gastrointestinal stromal tumors (GISTs) are malignant or potentially malignant tumors that arise from mesenchymal cells of the gastrointestinal tract [1]. The first case of synchronous epithelial and stromal tumors was described in 2000 [2]. Since then, only less than twenty cases have been described in case studies and less than 100 cases have been reported totally in the literature. However, its clinicopathological features are vague. Its preoperative diagnosis rate is low and the prognosis may be influenced by the correct diagnosis. Here we present a rare case of gastrointestinal stromal tumor with synchronous gastric cancer and provide a literature review.

Case presentation

A 69-year-old Chinese male with one-week history of upper abdominal pain and vomiting was admitted to our hospital in January 2013. He denied any history of abdominal discomfort. The physical examination and routine laboratory tests upon admission were unremarkable. However, an upper gastrointestinal endoscopy showed a mucosal ulceration located on the antrum (Figure 1A) and a polypoid mass located in the distal body with intact overlying mucosa (Figure 1B). High-grade intraepithelial neoplasia and early gastric cancer were verified with biopsies of mucosal ulceration. The polypoid mass was suspected of gastric polyp without biopsy. No metastatic lesions were found in either the abdominal ultrasonography or the CT scan. The patient underwent a distal subtotal gastrectomy, with D2 lymph node dissection, and reconstruction was provided with Billroth I procedure. Pathological examination of the specimens revealed gastrointestinal stromal tumor and poor-differentiated gastric cancer, respectively.

Discussion

The incidence of GIST is about 10 to 20 per 1,000,000 per year [3, 4]. The most common
sites of GISTs are the stomach (60-84.8%), small intestine (10.5-30%), esophagus (1.2-5%), colon and rectum (3.5-5%) [1]. The coexistence of gastrointestinal stromal tumor with synchronous gastric cancer has been rarely reported. The preoperative diagnosis of GISTs depended mainly on imaging examination and biopsy [5-7]. However, gastric GISTs were often submucosal, muscular, or subserosal, with correctly preoperative diagnosis missed [8]. Clinical symptom of gastric GIST depends on tumor size and location. Many patients have no specific clinical symptoms when the tumor was small [1, 9]. Moreover, the clinical symptoms of gastric GIST with synchronous gastric cancer may be confused [1, 7, 9, 10].

In this case, the patient presented with one-week history of upper abdominal pain and vomiting. The symptoms attracted clinician’s more attention on gastric cancer located on the antrum. Biopsy examination of the polypoid mass located in the distal body was missing. Not only the neglect of biopsy frequently occurs, but also the covering gastric mucosa may often remain intact and the endoscopic biopsies can

Figure 1. A: Endoscopic image of a mucosal ulceration with bleeding located on the antrum. B: Gastrointestinal endoscopy showed a polypoid mass located in the distal body with intact overlying mucosa.

Figure 2. A: HE staining of the tumor showing poorly differentiated gastric adenocarcinoma cell (H&E, × 100). B: Photomicrograph from the resected polypoid mass showed whirling bundles of spindle cells with mitosis (H&E, × 100).
be inefficient [11, 12]. Subsequently, the correct diagnosis was made from postoperative histopathologic examination and immunohistochemical staining.

The correctly preoperative diagnosis of such cases can be a challenge. Lin et al. [12] retrospectively investigated clinical features of 42 patients of gastric gastrointestinal stromal tumor with synchronous gastric cancer and his study showed that 76.2% of patients are male and 71.4% of patients are over 60 years old. Surprisingly, only one tumor (2.4%) was detected before surgery. In present study, after performing a literature search, we also reviewed the clinical data of 13 patients with gastrointestinal stromal tumor and synchronous gastric cancer, and the details are showed in Table 1. The mean age was 72.3 years old and ranged from 60 to 86. Similarly, the patients with gastrointestinal stromal tumor and synchronous gastric cancer were seem old in age. As the pace of global ageing is impressive, such cases would not be rare. The histological subtype of the synchronous gastric cancer included adenocarcinoma and ring cell carcinoma of which incidence needs larger sample research to clarify. The rate of correct preoperative diagnosis of the 13 cases is low, and most of them were diagnosed postoperatively.

The study in Japan showed that the three years overall survival (OS) rate was 62.6%, in a 42 patients group with gastric GIST and synchronous gastric cancer [12]. Although the rate of correct preoperative diagnosis of GIST in such combination is low, the prognosis is not so disappointing. Interestingly, gastric cancer plays a major role on survival in such combination [12]. Kazuyoshi et al. [13] reported that the Japanese gastric cancer screening system could help early detect gastric GIST. Besides, enhancing awareness of clinician about multiple primary tumors may also raise the rate of correct diagnosis.

In spite of complete resection of the GISTs, GISTs may relapse and end in poor prognosis [14]. Adjuvant chemotherapy and targeted therapy are important for high-risk GISTs [12]. Therefore, awareness of such combination is important to make accurate and effective treatment strategy. More cases are required for evaluating the relationship and the tumorigenesis of such combination.

Disclosure of conflict of interest

None.

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References

[1] Lin YL, Tzeng JE, Wei CK and Lin CW. Small gastrointestinal stromal tumor concomitant...
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