Coexistence of gastric cancer and gastrointestinal stromal tumor: Report of two cases

Gastrik kanser ve gastrointestinal stromal tümör birlikteliği: İki olgu sunumu

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Gastrointestinal stromal tumors and adenocancers are distinct neoplasms originating from different cell layers. Though adenocancers constitute the most common type of gastric tumors, synchronous development of a gastrointestinal stromal tumor is extremely rare. ***Case 1:*** *A 63-year-old male patient underwent a radical total gastrectomy with D2 lymphadenectomy and Roux-en-Y reconstruction. Histopathologic and immunohistochemical examination of the specimen disclosed an advanced stage, intestinal type adenocancer intermixing with a distinct lesion of gastrointestinal stromal tumor. The early postoperative course was uneventful; however, recurrence was seen and he survived only 13 months.* ***Case 2:*** *A 60-year-old male patient underwent a distal subtotal gastrectomy with D2 lymphadenectomy, and reconstruction was provided with Billroth 2 procedure. Intraoperatively, a 0.5 cm vegetating lesion was detected on the gastric body and resected. Histopathologic and immunohistochemical examination disclosed an intestinal type adenocancer, and the incidental lesion was reported as gastrointestinal stromal tumor. His postoperative course was uneventful, and the patient is free of disease after one year. The conditions under which the synchronous tumors develop away from each other or collide are vague. Currently, the stage of the adenocancer and the size and mitotic manner of the gastrointestinal stromal tumors are the leading prognostic factors.*

Key words: Synchronous gastric tumors, collision

Gastrointestinal stromal tümörler ve adenokanserler, farklı hücre gruplarından köken alan, birbirinden ayrı neoplazilerdir. Adenokanserler en sık görülen gastrik tümörler olsa da, eş zamanlı bir gastrointestinal stromal tümör gelişimi oldukça nadirdir. ***Olgu 1:*** *63 yaşında erkek hastaya radikal total gastrektomi, D2 lenf nodu disseksiyonu ve Roux en Y rekonstrüksiyon uygulandı. Histopatolojik ve immunohistokimyasal değerlendirme sonucunda ileri evre, inestinal tip adenokanserin yanı sıra, bu hücreler ile iç içe, ayrı bir gastrointestinal stromal tümör saptandı. Erken postoperatif dönemi sorunsuz geçen hasta, 13 ay sonra nüks nedeniyle kaybedildi.* ***Olgu 2:*** *60 yaşında erkek hastaya distal subtotal gastrektomi, D2 lenf nodu disseksiyonu ve Billroth 2 rekonstrüksiyon uygulandı. Operasyon sırasında, mide korpus üzerinde 0.5 cm'lik vejetan bir lezyon saptandı ve rezeke edildi. Histopatolojik ve immunohistokimyasal inceleme sonucunda, intestinal tip adenokanser yanı sıra insidental lezyonun gastrointestinal stromal tümör olduğu rapor edildi. Postoperatif dönemi sorunsuz geçen hastanın bir yıllık takibinde nüks saptanmadı. Senkron tümörlerin hangi koşullar altında ayrı ayrı geliştikleri ya da çakıştıkları belirsizdir. Halen, adenokanserin evresi ile gastrointestinal stromal tümörün büyüklüğü ve mitoz sayısı öne çıkan prognostik faktörlerdir.*

Anahtar kelimeler: Senkron mide tümörleri, çakışma

INTRODUCTION

Gastrointestinal stromal tumors (GISTs) and adenocancers are distinct neoplasms originating from different cell layers. Though adenocancers constitute the most common type of gastric tumors, synchronous development of a GIST is extremely rare. Occasionally, the two lesions interpenetrate and are referred to as "collision tumors" (1). In this report, we present two cases of gastric cancers, one coexistent and one colliding with GISTs.

CASE REPORTS

Case 1

A 63-year-old male patient suffering from dysphagia and weight loss was admitted. His physical examination was remarkable for a bulk in the epigastrium. The gastroscopy revealed a macroscopically malignant mass filling the whole cardia and spreading to the corpus of the stomach. After the confirmation of the malignancy with multiple biopsies, the patient underwent a radical total gas-

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trectomy with D2 lymphadenectomy and Roux-en-Y reconstruction. Histopathologic examination of the specimen disclosed an intestinal type adenocancer of 9 cm, transmurally infiltrating the whole gastric wall, and 16 of the 30 dissected lymph nodes were found to be metastatic (Figure 1-a). In the muscularis propria, a distinct lesion of 0.4 cm, consisting of cellular proliferation with uniform spindle cells and intermixing with adenocarcinoma cells, was detected. Immunohistochemically, this lesion was positive with CD117, CD34 and smooth muscle actin, and negative with S-100 and desmin (Figure 1-b). No mitosis was observed in 50 high-power fields. *Helicobacter pylori* gastritis was positive. The final histopathologic diagnosis was collision of adenocancer and very low-risk GIST in the stomach. The early postoperative course was uneventful; however, recurrence was seen and he survived only 13 months.

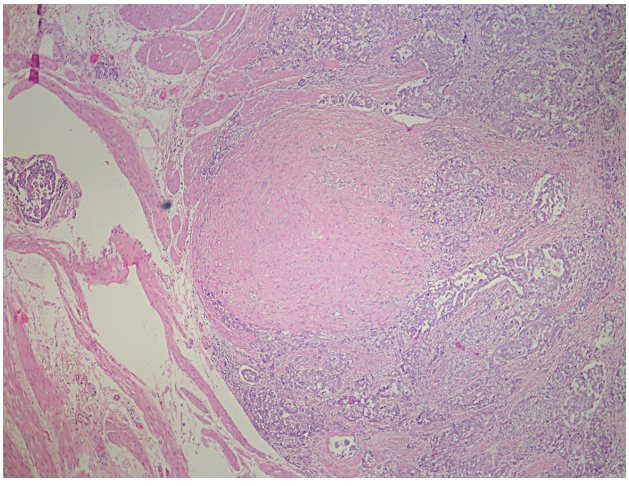

Figure 1-a. Intestinal type gastric cancer in the submucosa and muscularis propria in Case 1, in addition to GIST in the muscularis propria (hematoxylin & eosin x2).

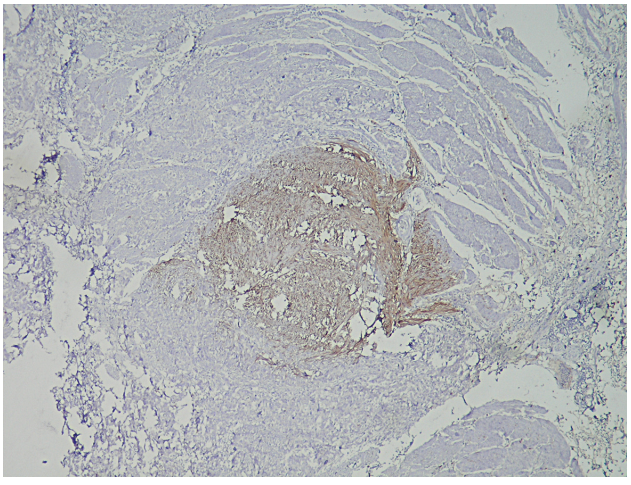

Figure 1-b. CD117 immunohistochemistry revealing GIST in Case 1 (CD117 x4).

Case 2

A 60-year-old male patient suffering from dyspepsia was admitted. His physical examination was unremarkable. Nevertheless, the gastroscopy revealed an ulcerated lesion at the posterior wall of the antrum. Malignancy was verified with biopsies. The patient underwent a distal subtotal gastrectomy with D2 lymphadenectomy, and reconstruction was provided with Billroth 2 procedure. Intraoperatively, a 0.5 cm vegetating lesion was detected on the anterior wall of the gastric body and a wedge resection was performed. Histopathologic examination of the specimen disclosed an intestinal type adenocancer of 4 cm, confined to the submucosa, and all the dissected lymph nodes were found to be reactive (Figure 2-a). Immunohistochemically, the incidental lesion stained positive with CD117, CD34 and smooth muscle actin, and negative with S-100 and desmin (Figure 2-b). No mitosis was observed in 50 high-power fields, and this lesion was reported as a very low-risk GIST. *H. pylori* gastritis was positive. His postoperative course was uneventful, and he was free of disease at the 12th month.

DISCUSSION

In this report, these two cases refined the features attributed to synchronous occurrence of adenocancers and GISTs. Customarily, the coexistence of these tumors in the stomach is announced with case reports. Therefore, definite conclusions could not yet be constituted, owing to the lack of strong evidence. However, the cumulative knowledge produced by the publications, particularly in the last decade, conduct physicians towards some considerations. The most reasonable theory aside from accepting the coexistence as a coincidence is the likelihood of a single carcinogenic agent interacting with two different cell lines (2). To date, no agent has been proven to be responsible for this phenomenon. Moreover, the conditions under which the synchronous tumors develop away from each other or collide are not clear. *H. pylori* is blamed both for the development of gastric adenocancers and lymphomas, and has been found in 78% of synchronous double tumors, implicating a possible role; nevertheless, there is no current evidence for a relationship with GISTs (3, 4). Despite detection of *H. pylori* infections in both cases presen-

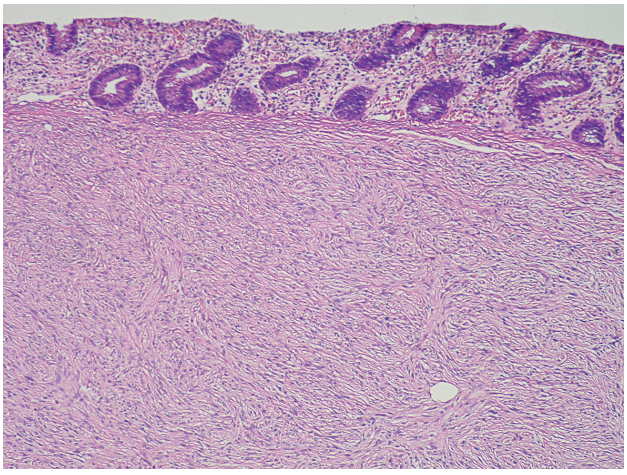

Figure 2-a. Intestinal type gastric cancer in Case 2 (hematoxylin & eosin x10).

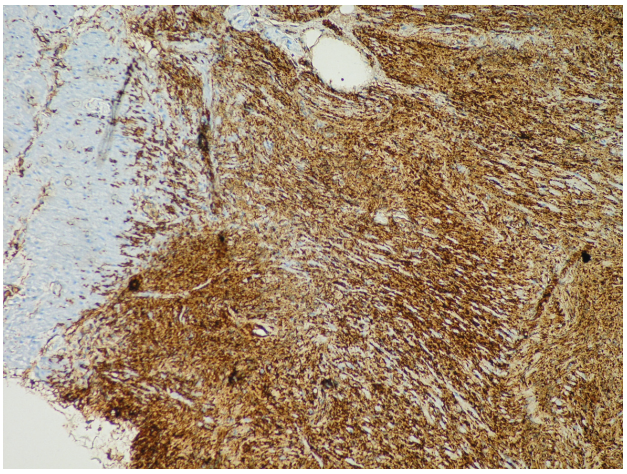

Figure 2-b. CD117 immunohistochemistry revealing GIST in Case 2 (CD117 x4).

ted here, there remains insufficient evidence with respect to this association.

In synchronous tumors of the stomach, macroscopic and microscopic features are the determinants from diagnosis to treatment. Patients are usually detected and treated for adenocancers, and GISTs are detected during the operations or histopathologic examinations of the specimen. Small GISTs arising from submucosal and muscular layers can be missed at endoscopic or radiologic assessments, and they can even escape the surgeon's intraoperative palpation. In most cases, positivity with CD117, CD34 and smooth muscle actin immunohistochemistry is essential in terms of the diagnosis of the second tumor (5). As for the adenocancer component, though it is not yet a rule, intestinal type adenocancers have a notable predominance in these patients (6).

The general expectation for the prognosis of these patients is similar to that for patients with only gastric cancers (6). The two patients reported here are consistent with this opinion. The small size and lack of mitosis in both patients' GISTs led us to consider that they had no malignant potential, since these are the prominent criteria of malignancy (5). According to the clinical and histopathological findings, the second patient with an earlier stage cancer will probably have a better survival than the first patient with advanced disease.

In conclusion, although it is not easy to speculate regarding these peculiar coexistent gastric neoplasms, the management of these patients is acquiring a route. Currently, the stage of the adenocancer and the size and mitotic manner of the GIST are the leading prognostic factors.

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