

Case Report

Synchronous and Metachronous Colon Cancers in Patients with Gastric Cancer: Report of 2 Cases

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Keywords

Gastric cancer · Colonofiberscope · Colon cancer · Follow-up

Abstract

Colorectal cancer is the most common synchronous or metachronous cancer in patients with gastric cancer. I report two cases of synchronous and metachronous colon cancer with gastric cancer. Case 1: A 70-year-old man was admitted to our hospital for the treatment of gastric cancer, which had been diagnosed during esophagogastroduodenoscopy (EGD) screening. The recommended preoperative testing was colonofiberscopy (CFS). The CFS revealed a 3-cm ulcerofungating mass, located 20 cm from the anal verge. The pathological report showed a well-differentiated adenocarcinoma. Consequently, we performed radical total gastrectomy and low anterior resection simultaneously. There was no recurrence during the 40-month follow-up of this individual on an out-patient basis. Case 2: A 71-year-old man who was treated with laparoscopically assisted distal gastrectomy (LADG) due to early gastric cancer underwent regular follow-up examination with EGD and abdominopelvic computed tomography. A CFS performed 5 years after the LADG revealed a polypoid mass in the sigmoid colon. The pathological report showed a villous adenoma with adenocarcinoma in situ. The patient underwent a colonofiberscopic mucosectomy. At 36 months after the endoscopic mucosectomy, the patient remained free of recurrence.

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Introduction

Nation-wide cancer screening and radical operation schemes have markedly improved the prognosis of gastric cancer in Korea [1]. The improved outcomes of gastric cancer and the increasing longevity of the population increase the chance of detecting synchronous and metachronous cancers in gastric cancer patients, with a reported incidence of 3.4% [2]. The most common synchronous neoplasm associated with gastric cancer is colorectal cancer, with a frequency ranging from 20.1% [2] to 37.2% [3, 4]. The detection of synchronous and metachronous cancers provides an opportunity to treat both cancers simultaneously using less invasive techniques to beneficially influence the prognosis and quality of life of the patients. This article reports on 2 gastric cancer patients with synchronous and metachronous colon cancer, which were diagnosed during colonofiberscopy (CFS) screening and treated with simultaneous operation and endoscopic mucosal resection.

Case 1

A 70-year-old man was admitted to our hospital for the treatment of gastric cancer, which had been diagnosed during esophagogastroduodenoscopy (EGD) screening at a local clinic. The patient's past medical history was unremarkable. Laboratory findings were within their normal limits including tumor markers, serum carcinoembryonic antigen, cancer antigen 19-9, and α -fetoprotein. The EGD showed an ulcerofungating mass in the midbody posterior wall of the stomach, and an ulcerative lesion in the midbody anterior wall of the stomach (Fig. 1). The pathological report revealed a moderately differentiated adenocarcinoma. The CFS revealed a 3-cm, ulcerofungating, colonic mass, located 20 cm from the anal verge (Fig. 2A). The biopsy diagnosed the mass as a well-differentiated adenocarcinoma. Four polyps were found in the ascending colon, and the biopsy diagnosed a tubular adenoma with low-grade dysplasia after polypectomy (Fig. 2B). Three-dimensional computed tomography (CT) of the stomach showed infiltrative wall thickening at the low gastric body from the lesser curvature to the posterior wall (Fig. 3). Fluorine-18 fluorodeoxyglucose (FDG) 6.5 mCi positron emission tomography-CT showed a focal FDG-avid mass in the midbody lesser curvature side of the stomach and a focal FDG-avid mass in the descending colon (Fig. 4). Consequently, we performed radical total gastrectomy and low anterior resection simultaneously. The pathological report of the stomach showed a poorly differentiated adenocarcinoma, with primary tumor invasion of the muscularis propria (pT2 tumor), and 1 metastasis out of 49 resected lymph nodes. The pathological report of the colon showed a moderately differentiated adenocarcinoma, with pT3 tumor invasion into the pericolic fat, and no metastasis in 18 resected lymph nodes. According to the 7th edition of the American Joint Committee on Cancer (AJCC) tumor-node-metastasis staging system, the stomach cancer was T2N1, stage IIa, and the colon cancer was T3N0, stage IIa. This patient undertook adjuvant chemotherapy with TS-1 for 1 year. There was no evidence of recurrence during the 40-month outpatient follow-up after the simultaneous operation.

Case 2

A 71-year-old man was admitted to our hospital for the evaluation and treatment of gastric cancer that had initially been diagnosed during a routine check-up EGD. The patient's

past medical history was unremarkable. Laboratory findings were within their respective normal ranges including the tumor markers, serum carcinoembryonic antigen, cancer antigen 19-9, and α -fetoprotein. The EGD revealed a 1.5-cm, superficially elevated, IIA type of early gastric cancer on the lesser curvature side of the gastric antrum. The lesion was diagnosed as a moderately to poorly differentiated adenocarcinoma on pathological examination. Abdominopelvic CT found no evidence of distant metastasis. Given the clinical diagnosis of early gastric cancer, the patient had a laparoscopically assisted subtotal gastrectomy (LADG) with D1 plus lymph node dissection. Histopathological examination revealed a tubular adenocarcinoma, which had invaded the mucosal lamina propria and no lymph node metastasis out of 14 resected lymph nodes. The postoperative course was uneventful, and the patient was discharged 12 days after the resection. The patient was followed up regularly with EGD (Fig. 5) and abdominopelvic CT without any recurrence of cancer. The CFS, which was undertaken 5 years after the operation, revealed a 2-cm polypoid mass in the sigmoid colon, located 15 cm from the anal verge (Fig. 6). Histopathological examination revealed a villous adenoma and high-grade dysplasia with focal adenocarcinoma in situ. The patient had a colonoscopic mucosectomy. Histopathological examination diagnosed a well-differentiated adenocarcinoma, arising in the tubulovillous adenoma, confined to the mucosa (pTis), no lymphovascular tumor emboli with negative resection margins. Follow-up examinations including EGD, abdominopelvic CT, and CFS, which were undertaken 7 years after the initial operation and 2 years after the colonoscopic mucosectomy for colon cancer, revealed no evidence of cancer recurrence. We monitor this individual at our out-patient department.

Discussion

In several Asian countries, including Korea and Japan, the frequency of synchronous gastric and colorectal cancer ranges between 4% [4] and 20% [2]. Saito et al. [4] reported that when colonoscopy was selected as the screening method of choice in gastric cancer patients, synchronous colorectal cancer was detected with a high prevalence of 4%. Therefore, they recommended that if possible, a colonoscopic screening is performed before treatment of patients older than 50 years with gastric cancer [4]. Here, patient 1 was a 70-year-old man who had been diagnosed with advanced gastric cancer during EGD screening at a local clinic. We recommended CFS screening, and colon cancer was diagnosed incidentally without any symptoms related to colorectal cancer. The patient underwent a radical operation for stomach and colon cancer simultaneously. The incidence of colorectal cancer is increasing rapidly in Korea [5, 6]. Hence, before surgery, a CFS in elderly patients who are diagnosed with stomach cancer is advisable. The use of CFS in asymptomatic elderly men for colorectal cancer is beneficial to identify patients with advanced neoplasia and to remove the lesions [7, 8].

According to some researchers, patients with gastric cancer may be at an increased risk of developing synchronous or metachronous colorectal cancer, and there seems to be some genetic and environmental association between gastric and colorectal cancer [9]. The incidence of second primary cancer in gastric cancer patients is highest in the colorectum followed by lung and liver. Furthermore, 80% of all gastric cancer patients with second primary cancers are male [9]. Eom et al. [2] reported that the incidence of colorectal cancer is higher in patients with another primary cancer than in the general cancer population and that metachronous cancers developed steadily for 5 years following the operation of gastric cancer. Thus, they suggested that preoperative staging for synchronous colorectal cancer and periodic examination for metachronous cancer are mandatory following surgery for

gastric cancer [2]. Here, patient 2 was diagnosed with colon cancer during CFS screening, 5 years after LADG for gastric cancer, and the patient was treated with colonoscopic mucosectomy without operation. Lee et al. [3] reported that the incidence rate of synchronous colon cancer might have been higher if they had performed routine CFS in gastric cancer patients. Consequently, they planned to carry out a routine CFS examination on those determined by this study to be at high risk [3].

In conclusion, synchronous and metachronous colorectal cancers in gastric cancer patients are not infrequent. Therefore, preoperative staging for synchronous cancer and periodic examination for metachronous cancer are necessary following surgery for gastric cancer, regardless of whether or not there are symptoms. Surgeons should pay attention to the possible occurrence of a second primary cancer, particularly in colorectal cancer patients with gastric cancer, with elderly men being more at high risk.

Statement of Ethics

Written informed consent for the publication of this paper was obtained from the patients.

Disclosure Statement

I wish to confirm that there are no known conflicts of interest associated with this publication and that there has been no significant financial support for this work.

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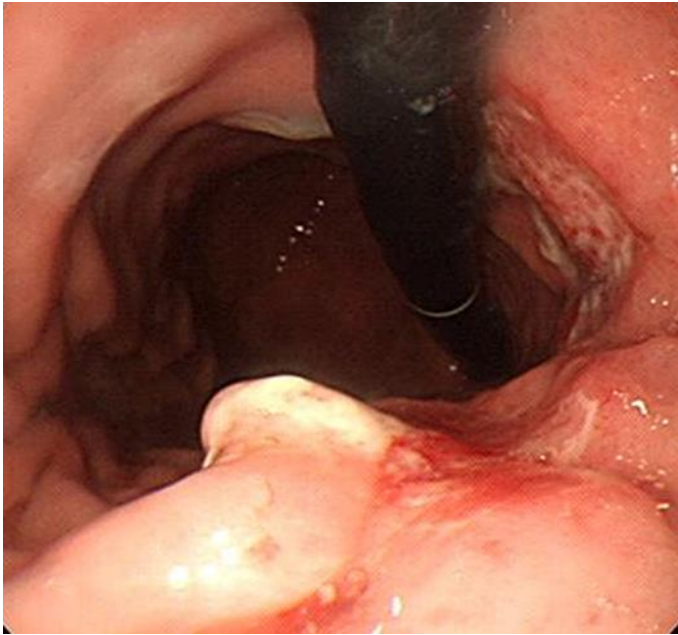


Fig. 1. Esophagogastroduodenoscopy showed an ulcerofungating mass at the midbody posterior wall of the stomach and an ulcerative lesion at the midbody anterior wall. The pathological report diagnosed a moderately differentiated adenocarcinoma.

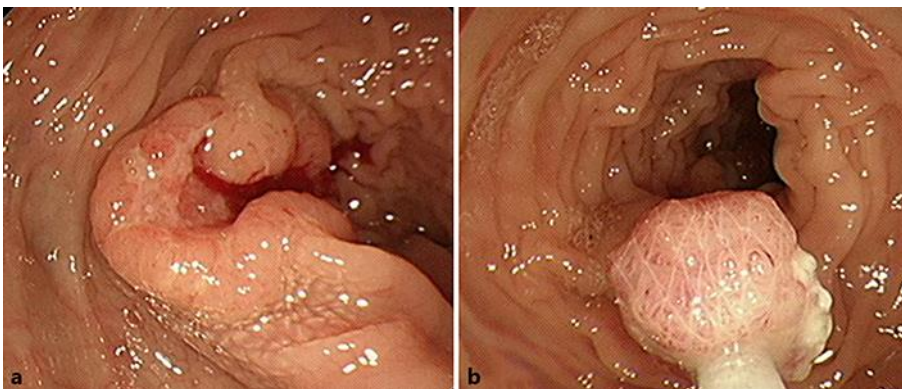


Fig. 2. a Colonofiberscopy revealed an ulcerofungating colonic mass, located 20 cm from the anal verge. The biopsy diagnosed a well-differentiated adenocarcinoma. **b** Four polyps in the ascending colon. The biopsy diagnosed a tubular adenoma with low-grade dysplasia after polypectomy.



Fig. 3. Stomach 3D computed tomography showed infiltrative wall thickening at the low gastric body from the lesser curvature to the posterior wall.

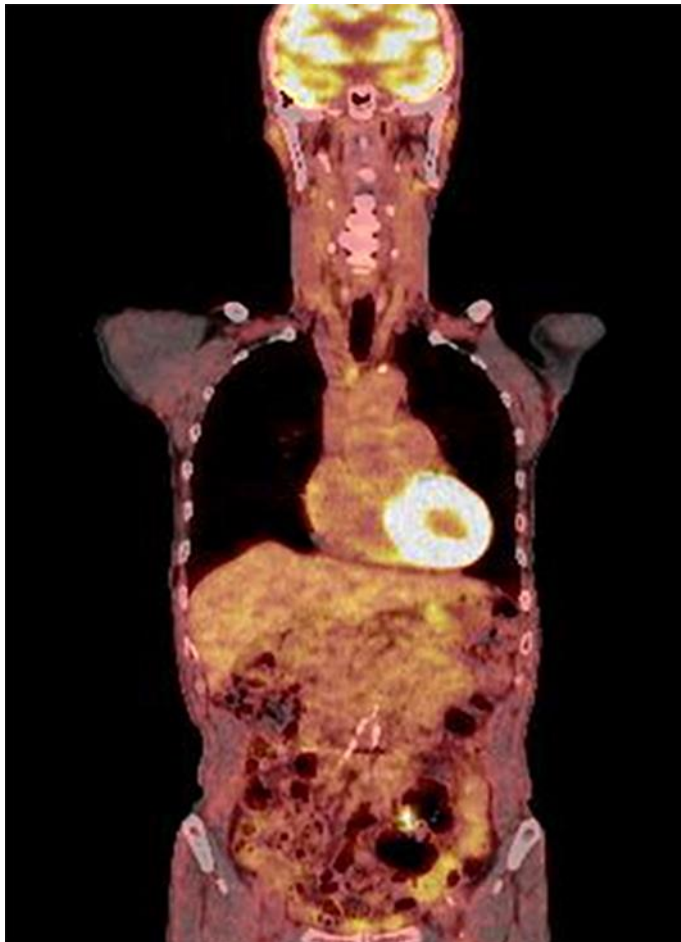


Fig. 4. F-18 FDG positron emission tomography-CT showed a focal FDG-avid mass at the descending colon and a focal FDG-avid mass in the midbody lesser curvature side of the stomach.

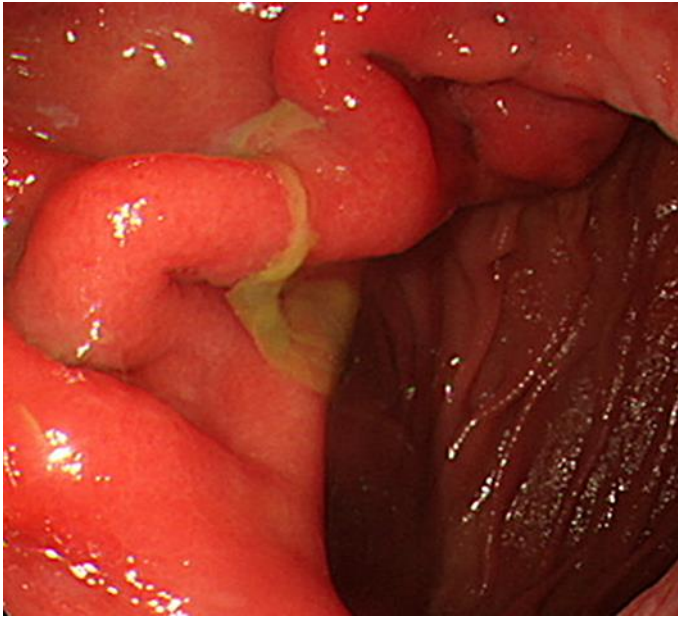


Fig. 5. Follow-up EGD showed no evidence of cancer recurrence 5 years after LADG due to early gastric cancer.

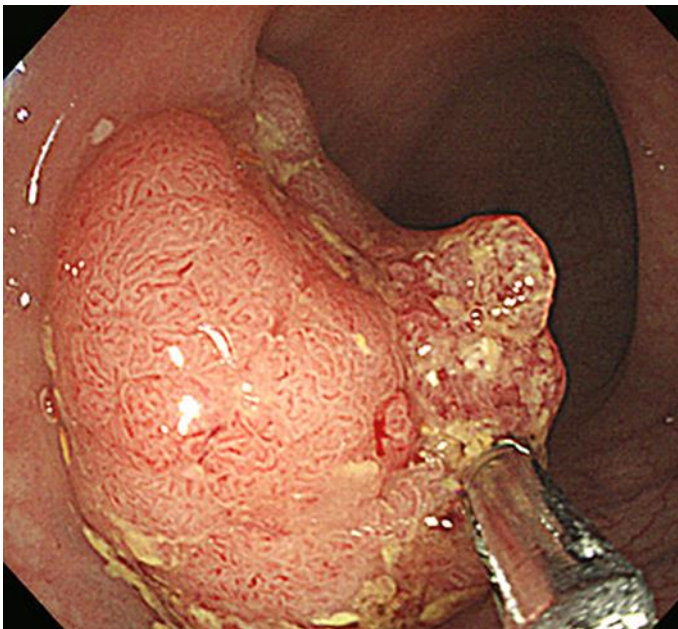


Fig. 6. Follow-up CFS, which was taken 5 years after LADG due to gastric cancer, revealed a colonic villous adenoma with high-grade dysplasia with focal adenocarcinoma in situ.