TMSJ
TURKISH MEDICAL STUDENT JOURNAL

Turk Med Stud J 2022;9(1):29-32
DOI: 10.4274/tmsj.galenos.2021.09.01.06

CASE REPORT

SYNCHRONOUS GASTRIC AND COLON ADENOCARCINOMA WITH SIMULTANEOUS SURGERY: A CASE REPORT

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ABSTRACT

Multiple primary tumors are rare but their incidence is increasing. We aimed to present a case report about a patient with synchronous gastric and colon cancer, who has undergone a simultaneous resection of both tumors and developed (preventable) postoperative complications. A 69-year-old male patient, who was diagnosed with severe acute respiratory syndrome coronavirus-2019 infection 3 months ahead of his admission, presented to the Trakya University due to gastric bleeding. Colonoscopy and esophago gastro duodenoscopy were performed upon complaints. The patient was diagnosed with synchronous gastric and colon adenocarcinoma. Total gastrectomy, left hemicolectomy, and Roux-en-Y esophagojejunostomy were performed simultaneously. Although there were no postoperative surgical complications, the patient developed a pulmonary embolism. In the presence of a gastrointestinal tumor, the synchronous or metachronous tumor should also be evaluated. The most appropriate surgical treatment is simultaneous resection of both tumors. Physicians should also consider the risk of a pulmonary embolism that may develop after these major surgeries.

Keywords: Synchronous neoplasms, gastric cancer, colon cancer, pulmonary embolism

INTRODUCTION

Multiple primary tumors were first defined as developing tumors with different histological features, localized in different positions and self-metastasized more than once in the same patient (1). Later, in 1932, it was published for the first time in a study by Warren and Gates (2), which included 1,259 case reports, and highlighted the importance of these tumors.

The prevalence of multiple primary tumors in the current medical literature is between 0.73-11.7% (3). Its incidence varies between 2% and 17% (4). While gastric cancer is the fourth most common type of cancer in the world; it ranks fifth for men and sixth for women in Turkey (5). Colorectal cancer follows a similar trend and while it is the third most common type of cancer seen in men and second in women in the world; it is in third place for both sexes in Turkey (5).

Multiple primary tumors consist of two subclasses: synchronous and metachronous (6). If the second tumor is detected earlier than 6 months after the first tumor, it is synchronous; if it is detected later than 6 months, it is called metachronous (6). These definitions vary depending on the source. While the distinction between synchronous and metachronous is determined in the 2-month mark based on the Surveillance Epidemiology and End Results Program data, International Association of Cancer Registries and International Agency for Research on Cancer (IACR/IARC) data suggest the 6-month mark (4, 7). European cancer registries commonly use IACR/IARC definitions in practice (4).

Examples of synchronous cancer combinations are esophagus and stomach, stomach and colon, stomach and duodenum. The combination of stomach and colon cancer is rare (8-10). Colorectal cancer is the most common synchronous cancer in patients with gastric cancer; on the other hand, the most

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Received: 23.09.2021 Accepted: 05.10.2021

Cite this article as: Kayabaş MY, Cakcak İE. Synchronous gastric and colon adenocarcinoma with simultaneous surgery: a case report. Turk Med Stud J 2022;9(1):29-32.

common synchronous cancer in patients with colorectal cancer is gastric cancer (6, 11).

We aim to present a case report about a rare case of synchronous gastric and colon cancer. We believe this case will contribute to the literature with the treatments performed and prognosis on this rare condition.

CASE REPORT

A 69-year-old male patient was admitted to the Trakya University Hospital with loss of consciousness due to gastric bleeding. No pathological finding was detected in the physical examination. The patient's family history revealed colon cancer in the patient's father. The patient had been diagnosed with severe acute respiratory syndrome coronavirus-2019 infection 3 months before presentation and had recovered since. The patient has a history of type 2 diabetes mellitus. The patient smokes 30 packs of cigarettes per year and does not consume alcohol. The patient has a history of angiography 3 years ago. The blood tests indicated the presence of anemia in the patient with a hemoglobin level of 9.6 g/dL.

Colonoscopy was performed on the patient and revealed an ulcerovegetan mass obstructing the lumen in the descending colon. An esophago-gastro-duodenoscopy was performed based on the patient's anemia. The esophagus and duodenum were found to be normal, and a malignant ulcer was found in the gastric fundus.

After the diagnosis of gastric cancer, positron emission tomography/computed tomography scan was performed for staging. Images suggested thickening in the abdominal wall and increased fluorodeoxyglucose (FDG) uptake in the stomach fundus and lesser curvature (Figure 1). Moreover, FDG uptake in the thickening area of the left colon wall was detected (Figure 2). No metastasis was detected in the imaging.

Biopsy from the colonoscopy report was evaluated as weak cohesive carcinoma infiltration in the stomach and adenocarcinoma in the colon. The patient was diagnosed with synchronous gastric and colon adenocarcinoma. Total gastrectomy, left hemicolectomy, and Roux-en-Y esophagojejunostomy were performed simultaneously.

On postoperative day 3, a thrombus was detected in the right pulmonary artery in the patient despite anticoagulant treatment (Figure 3). The patient was diagnosed with pulmonary embolism and is still being followed up in the intensive care unit. No other postoperative surgical complications were observed. Patient was started on enteral nutrition.

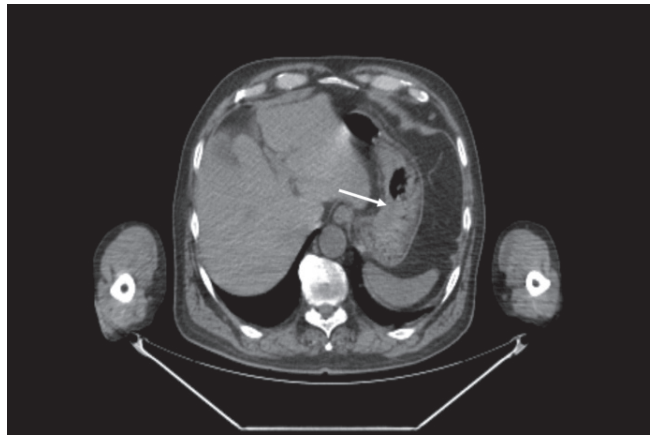

Figure 1: Abdominal computed tomography imaging without contrast. Increased thickness and irregularity in the abdominal wall at the level of the lesser curvature of the stomach (arrow).

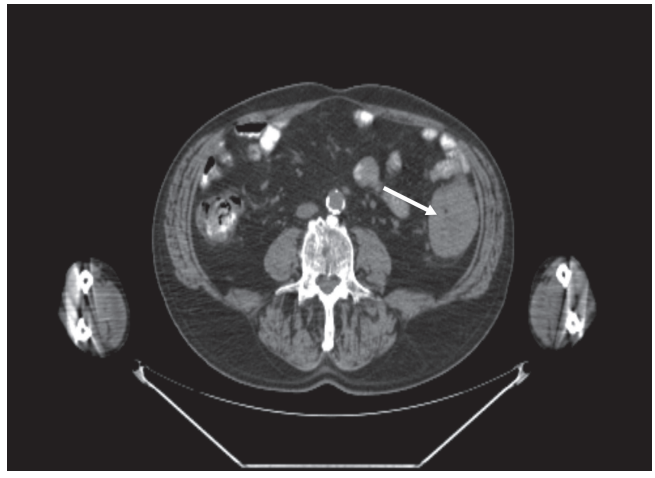

Figure 2: Abdominal computed tomography imaging without contrast. Increased tumoral wall thickness in the descending colon extending to the surrounding adipose tissues (arrow).

Figure 3: Contrast-enhanced thorax computed tomography scanning the pulmonary artery phase. Filling defect compatible with thromboembolism in the right main pulmonary artery (asterisk and arrow).

DISCUSSION

The etiology of the synchronous cancer is still unknown (11). Risk factors include defects in DNA error repair mechanism, family history, male gender, and increasing age (over 50 years of age) (11-15). The generally accepted incidence of synchronous tumors associated with gastric cancer is 2.0-10.9% (16). Ławniczak et al. (17) stated an incidence of 6.7%, whereas Ha et al. (6) suggested 1% (18). With the development of screening techniques in recent years, there has been an increase in the diagnosis of synchronous tumors (16).

Incidence rates suggest that when the patient has gastric cancer, we should also consider the possibility of a synchronous tumor, especially colorectal cancer (19). Colonoscopy should be performed for colorectal cancer in patients presenting with bleeding and bowel obstruction (19). Since these complaints may not always be present, screening tests should be performed for patients presenting with a form of gastric cancer (19). Further investigations should be performed in the preoperative period in patients who have gastric cancer or are older than 50 years of age, male, have a family history of gastric cancer, and undergoing cancer treatment (19). In addition, the risk of metachronous tumors should be considered in the postoperative period.

The prognosis of the patients with multiple tumors is primarily determined by the progression of gastric cancer and therefore it is crucial to first operate on gastric cancer (6, 20). Moreover, if only colon surgery was performed, the patient would not be able to intake nutrients due to gastric cancer. However, if only gastric surgery had been performed, an anastomotic leakage could have occurred due to obstructive colon cancer. As a result, a simultaneous surgery should be preferred as the treatment method as presented in this case.

Pulmonary embolism is the most common preventable cause of hospital deaths (21). The development of pulmonary embolism depends on many factors such as type of surgery, preoperative prevention methods used, patient's age, and gender of the patient (22). Overall, any type of surgery increases the risk of pulmonary embolism five times compared to patients with no history of surgery (23, 24). About 25% of all pulmonary embolism cases can be associated with recent surgery (23). Pulmonary embolism is seen 1.4 times more frequently in men (21, 25). The rates also vary according to the operated body region and type of surgery (22, 23, 26). In a United States-based study, 65% of patients with pulmonary embolism had undergone surgery, and 41% of these patients had undergone general surgery (26). Moreover, the same study revealed that 82% of these patients had undergone open surgery, suggesting that open surgery as a major risk factor (26). The second most common comorbidity was cancer, which was found in 22% of the patients. Anticoagulants were used in 56% of patients before postoperative embolism developed. The time between surgery and diagnosis of pulmonary is age-related and is 7 days above the age of 60 (26). The incidence of pulmonary embolism after major surgery varies by region and year. It was found to be 0.3-30% in a global review in Japan, 0.09% in a study conducted in the United States, and 11.8% in France (21, 23, 26).

Based on the patient's age, gender, cancer history, and the operation performed, the patient presented in this case was considered to have a higher risk of pulmonary embolism. The patient was put on compression stockings preoperatively and low molecular weight heparin was given as an anticoagulant. However, the patient still experienced a postoperative pulmonary embolism. The patient was transferred to the intensive care unit after the embolism and is still being followed up in the intensive care unit.

This presented case reflects the importance of evaluating synchronous or metachronous tumors in the presence of a gastrointestinal tumor. If there is another tumor present, the most appropriate surgical treatment is simultaneous resection of both tumors applied to the patient presented in this case. Finally, our case highlighted the importance of being extra vigilant for potential pulmonary embolism in higher-risk patients following multiple tumor surgeries.

Ethics Committee Approval: N/A

Informed Consent: Informed verbal consent was obtained from the patient.

Conflict of Interest: The authors declared no conflict of interest.

Author Contributions: Concept: M.Y.K., İ.E.C., Design: M.Y.K., İ.E.C., Supervision: M.Y.K., İ.E.C., Resources: M.Y.K., İ.E.C., Materials: M.Y.K., İ.E.C., Data Collection and/or Processing: M.Y.K., İ.E.C., Analysis and/or Interpretation: M.Y.K., İ.E.C., Literature Search: M.Y.K., İ.E.C., Writing Manuscript: M.Y.K., İ.E.C., Critical Review: M.Y.K., İ.E.C.

Financial Disclosure: The authors declared that this study received no financial support.

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