CASE REPORT

Triple Synchronous Primary Cancers of Rectum, Thyroid, and Uterine Cervix Detected during the Workup for Hematochezia

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Abstract

Multiple primary cancers are defined as multiple occurrences of malignant neoplasm of different histologic origin in the same individual. The synchronous occurrence of triple distinct cancers in the same patient is very rare. Herein, we report an extremely rare case of synchronous triple primary cancers of the rectum, thyroid gland and uterine cervix; all were detected during the work-up for hematochezia. To the best of our knowledge, this is the first such report in the medical literature.

Key words: multiple primary, neoplasms, rectum, cervix uteri, thyroid gland


Introduction

Multiple primary cancers are defined as those cases that display primary malignant tumors of different histologic origins in one person. The number of patients diagnosed with multiple primary cancers has recently been increasing due to the improved diagnostic techniques, the prolonged life span and the increased incidence of long-term survival of patients with malignancy. However, most multiple primary cancers are double primary cancers, and the incidence has decreased as the number of concomitant cancers has increased (1).

We present herein a case of synchronous triple primary cancers of the rectum, thyroid gland and uterine cervix in a 56-year-old woman with hematochezia.

Case Report

A 56-year-old woman was admitted to our hospital because of hematochezia and her bowel habits had changed in the recent two months. She was a nonsmoker and non-drinker. Her past medical history was unremarkable, and there was no family history of malignancy. The vital signs and physical examination were normal except for lower abdominal mild tenderness on palpation. The laboratory findings were as follows: hemoglobin 11.7 g/dL, white blood cell count 11,400/μL, platelet count 455,000/μL, carcinoembryonic antigen 37.72 ng/mL, squamous cell carcinoma antigen 0.1 ng/mL, serum T3 140.38 ng/dL, free T4 1.13 ng/dL, thyroid stimulating hormone 1.545 μIU/mL and thyroglobulin 701.70 ng/mL. All of the other laboratory values were normal. Colonoscopy showed a huge, luminal encircling, ulcerative, friable mass with marked luminal narrowing at a site 8 cm to 18 cm from the anal verge (Fig. 1), and the biopsy revealed mucinous adenocarcinoma with signet-ring cells (Fig. 2A). CT of the abdomen and pelvis showed luminal narrowing and marked wall thickening involving the rectosigmoid colon, and the perirectal and pericolic lymph were enlarged. As expected, the PET-CT scan demonstrated an abnormal FDG uptake in the rectosigmoid colon, with a maximum SUV of 7.2. In addition, there was also an incidental finding of a nodular area with increased metabolic activity in the left thyroid lobe; this area demonstrated a maximum SUV of 8.1 (Fig. 3). Percutaneous sonography-guided fine needle aspiration was done for the left thyroid lesion, and this lesion was cytologically confirmed to be papillary adenocarcinoma.

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Figure 1. The colonoscopic findings. Colonoscopy showed a huge, luminal encircling, ulcerative, friable mass with marked luminal narrowing at a site 8 cm to 18 cm from the anal verge.

Figure 2. Microscopic findings of the colonoscopic biopsy and the uterine conization. (A) Mucinous adenocarcinoma with signet-ring cells infiltrated into the lamina propria in the rectosigmoid colon (Hematoxylin and Eosin staining, ×200) and (B) the squamous cell carcinoma in the uterine cervix involves the endocervical glands with tiny invasive nests of neoplastic cells in the uterine cervix (Hematoxylin and Eosin staining, ×200).

Figure 3. The PET-CT scan demonstrated an abnormal FDG uptake in the rectosigmoid colon. In addition, there was also an incidental finding of a nodular area with increased metabolic activity in the left thyroid lobe.

carcinoma. Although she was without gynecologic symptoms, according to the American Cancer Society screening guidelines, we checked a pap smear, which also showed squamous cell carcinoma. We performed uterine conization. The cervical cancer was staged IA1 and so accordingly, it was completely resected (Fig. 2B). For the treatment of the rectal and thyroid gland cancers, we had planned to operate simultaneously but this could not be performed due to cancer peritonei after administering neo-adjuvant chemoradiation therapy for the rectosigmoid lesion. The patient was treated with palliative chemotherapy with the FOLFOX regimen and she has been under follow-up for 12 months.

Discussion

In 1977, Moertel (2) proposed definitions that included those for multiple primary cancers and multicentric cancers, and these classifications are widely used today. Group I includes multiple primary cancers occurring in organs with the same histology, group II includes multiple primary cancers that originate from different tissues and group III consists of cancers from different tissues and organs that concurrently exist with group I cancers, and they form multiple primary cancer of three or more cancers. Group I is further subdivided into group A, which includes cancers that occur in the same tissue and organ, group B, which includes cancers that are from the same tissue and different organs, and group C, which includes cancers that occur in bilateral organs. Moertel et al (3) classified multiple primary cancers as those that are observed at the same time or within six months as synchronous multiple primary cancers, and these cancers develop at more than a six-month interval as metachronous multiple primary cancers. On the other hand, many studies have defined 1 year as the dividing time of these two types of multiple cancers (4). Therefore, the present case is included in group II, and the patient’s cancers were the synchronous type.

A previous study defined the incidence of multiple primary cancers, which also included autopsy cases, as 1.8%-11% of all cancers (5). The wide variation in the prevalence of multiple primary cancers could be attributed to several factors, such as the year and criteria of the diagnosis of the multiple primary cancers, the patients’ characteristics and the criteria of selecting cases for autopsy (6).
Kim et al (7) studied a group of 102 patients who had multiple neoplasms, including colorectal cancer. The incidence of synchronous primary cancers of thyroid and colorectal cancer was 8%, and the incidence of synchronous primary cancers of cervical and colorectal cancer was 2%. There have been many case reports about multiple primary cancers. However, to the best of our knowledge, the present case of synchronous triple primary cancers of the rectum, thyroid gland and uterine cervix is the first such report in the literature.

The majority of multiple primary cancers occur as a result of random chance, but different mechanisms have been suggested to be involved in multiple primary cancers, such as the family history, immunologic and genetic defects, prolonged exposure to carcinogens, radiation and chemotherapy for the primary cancer, and field cancerization (1, 8-10).

Most of the previously reported cases of multiple primary cancers frequently arose in the respiratory, gastrointestinal and genitourinary systems (11). One of the most common malignancies in patients with multiple primary cancers is prostate cancer and it is a frequent incidental finding at autopsy in elderly men (12).

PET scan has generally been a useful adjunct for staging cancer and monitoring therapy in oncology patients. However, several studies have demonstrated, like the present case, the incidental detection of synchronous malignancies by performing PET (13, 14). PET scanning has been documented to incidentally detect unsuspected precancerous and cancerous lesions. Agress and Cooper (15) studied a group of 1,750 patients who underwent PET scanning for a variety of known or suspected malignancies. Forty-two patients had the unexpected finding of increased metabolic activity. Of these 42 patients, 30 had malignancies that were different than the known malignancy.

According to the American Cancer Society Guidelines for the Early Detection of Cancer, all women should begin cervical cancer screening about 3 years after they begin having vaginal intercourse, but no later than when they are 21 years old. Screening should be done every year with the regular Pap test or every 2 years using the newer liquid-based Pap test (16). In Korea, Jang et al (17) reported that the average annual screening rate in Korea was 14.8% and the abnormal cytology rate was 2.02%, including atypical squamous cells of undetermined significance.

In patients with primary cancer, the work-up often focuses mainly on the primary disease, so that the incidental coexistence of another primary malignant lesion can be easily missed. In the current case, during routine cancer screening and staging, we found cancers of the uterine cervix and thyroid gland. The number of patients with multiple cancers has recently been increasing. The possibility of a second or third malignant lesion should be considered for patients with primary cancer. The importance of screening procedures should be emphasized for the early detection of malignancy before the appearance of clinical symptoms. Multiple primary cancers are rare, yet it is believed that the incidence of this is rising and thus making an early diagnosis and administering prompt treatment are important.

References


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