



Seven Metachronous Primary Cancers within 27 Years in a Woman

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Abstract

We report a rare case of 7 metachronous primary cancers. These 7 primaries occurred within 27 years in 6 different organs including lungs, ureter, bladder, skin, colon, and breast. She aggressively underwent surgical treatments on each primary cancer and further radical surgery for recurrence of the bladder cancer. Postoperative adjuvant chemotherapy was performed for the colon cancer and other chemo radiotherapy for the breast cancer. She was well in recent 3 years follow-up except having osteoarthritis of both knees and two meningiomas.

Keywords: Multiple cancers; Primary cancer; Metachronous cancer

Introduction

More than one cancer in the same or a different organ, multiple primary cancers are established. In a review, the frequency of multiple primary cancers was reported in the range of 2% to 17% [1]. Four patients who had six or more primary cancers have been reported in 1988. Among these patients, the most frequent cancer site was the colon [2]. Here, we report a patient who had 7 metachronous primary cancers.

Case Presentation

A 79 years old female patient had 7 metachronous primary cancers within 27 years, from age 49 up to 76. Her parents both died of lung cancer. She was non-smoker and non-user of alcohol. When at the age of 49, she had normal body weight (BMI=24). At that year, the first primary squamous cell carcinoma of left lower lobe lung was detected by chest computed tomography because of mild cough. She underwent thoracotomy with left lower lobectomy and mediastinal lymph nodes dissection. Up to the age of 76, her body weight gradually increased (BMI=26.3) and the 7th metachronous primary cancer was found. At this time, a lung nodule in right upper lobe was also detected by computed tomography. Thoracoscopic right S3 segmentectomy with lymph nodes dissection was performed and adenocarcinoma of right lung was confirmed by pathologic findings. Between the age of 50 and 69, the other five primary metachronous primary cancers were subsequently detected and aggressively treated by different surgeries. Totally, these 7 metachronous primary cancer occurred in 6 organs including lungs, ureter, bladder, skin, colon, and breast. She underwent surgical treatments on each primary cancer and further radical surgery for recurrence of bladder cancer (Table 1). Postoperative adjuvant chemotherapy was performed for treatment of the colon cancer and chemo radiotherapy for the breast cancer. In recent 3 years follow-up, she was well except presenting with osteoarthritis of both knees and two meningiomas in the brain detected by magnetic resonance imaging.

Discussion

The impact on the future U.S. cancer burden because the number of new cancer patients is expected to more than double from 1.36 million in 2000 to almost 3.0 million in 2050. The risk of developing subsequent multiple primary cancers vary from 1% to 16% in different organ in other review [3]. The development of new primary tumors is suggestive of persistent exposure to etiological risk factors or genetic predisposition [4]. Nearly 10% of cancer patients develop a second primary cancer within 10 years after surgical removal of the first tumor. Hence, detection of a genetic risk for developing multiple primary tumors would be of clinical importance [5]. In our present case, her parents all died of lung cancer. The occurrence of multiple primary cancers could be related to same environment and genetic factors. Among these 7 metachronous primary cancers of the case, 5 cancers were belonging to early stages that were easier to cure. Additionally, adjuvant chemotherapy or chemo radiotherapy was used to treat the two cancers not in early stage.

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Received Date: 25 Jul 2019

Accepted Date: 02 Aug 2019

Published Date: 05 Aug 2019

Citation:

Wu M-H, Wu H-Y. Seven Metachronous
Primary Cancers within 27 Years in a
Woman. *Clin Oncol.* 2019; 4: 1651.

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Table 1: Seven metachronous primary cancers in a 79 years old woman.

No	Cancer, site	Stage	OP date	Surgical procedure
1	Squamous cell carcinoma, LLL lung	T1N0M0, stage IA	12/12/1989	Left lower lobectomy+ LND
2	Transitional cell carcinoma, right ureter	Stage I	5/29/1991	Psoas hitch procedure
3	Transitional cell carcinoma, bladder	Stage I	12/21/1994	Initial TURBT followed by radical cystectomy + LND + hysterectomy + BSO for recurrence in 2000
4	Squamous cell carcinoma, left foot skin	in situ	3/17/1995	Local excision
5	Adenocarcinoma, sigmoid colon	T3N1M0, stage IIIB	5/14/1999	Left colectomy + LND
6	Adenocarcinoma, left breast	T1N1M0, stage IIA	12/29/2009	Modified radical mastectomy
7	Adenocarcinoma, RUL lung	T1cN0M0, stage IA	8/17/2016	Thoracoscopic segmentectomy+ LND

Abbreviation: LND: Lymph Nodes Dissection; TURBT: Transurethral Resection of Bladder Tumor; BSO: Bilateral Salpingo Oophorectomy

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