Radiol Oncol 1993; 27: 36-8.

To the problem of second primary tumor in long-term survivors of small-cell lung cancer

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Two cases of second primary tumor (SPT) of the lung after multimodality treatment of small-cell lung cancer (SCLC) are presented. In both of them non small-cell lung cancer (NSCLC) was stated. The frequency of lung SPT is discussed.

Key words: lung neoplasms; carcinoma, non-small cell lung; neoplasms, second primary

Introduction

Warren and Gates[1] stated that a cancer patient may be "cancer prone" and tends to develop new primary cancer more frequently than do patients their first cancer. On the other side, the cases of multiple primary carcinomas in the same region and elsewhere in the body are becoming increasingly common.

Current multimodality approaches to the management of patients with small-cell lung cancer (SCLC) improved their survival rates. With an improved potential for care and accrual of long-term survivors of SCLC, the adverse effect of chemo- and radiotherapy, and a higher incidence of second primary tumors (SCT) have become apparent.

In the article two cases of SCLC patients are presented; in one of them SPT was metachronous non small-cell lung cancer (NSCLC), and in another patient it was probably synchronous double lung cancer. The problem of frequency of SPT of the lung is discussed.

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UDC: 616.24-006.6-039.35

Case No. 1

A 68-year old male patient (Pat. rec. # 6718/82) was operated on for a 2-cm peripheral SCLC of the upper left lobe in September 1982. The stage of tumor was $pT_1N_0M_0$. Postoperatively, seven applications of chemotherapy (cyclophosphamide, vinblastine, methotrexate, 5-fluorouracil) were performed. In September 1988, tumorous infiltration of the left hilus was evident on chest x-ray. In December 1988, bronchoscopy was performed: there were signs of lower left bronchial tumor and large-cell carcinoma confirmed. The patient died in December 1990 due to progression of lung cancer and liver metastases, i. e. 99 months after surgery for small-cell carcinoma, and 27 months after the diagnosis of large-cell carcinoma.

Case No. 2

In May 1989, a 65-year old male patient (Pat. rec. # 2195/89) presented with small cell carcinoma of the lower right robe (Figure 1). Clinical stage of the tumor was $cT_2N_2M_0$ (limited disea-

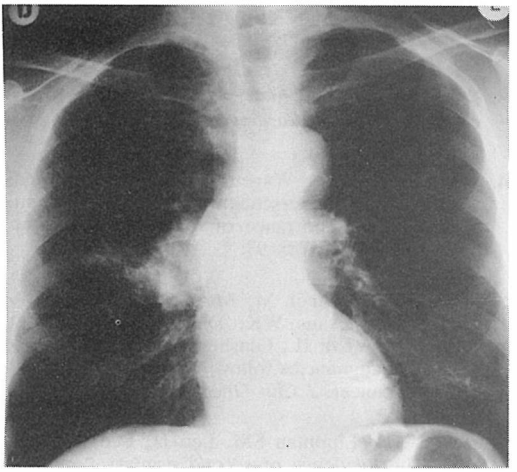

Figure 1.

se). After six applications of chemotherapy (cyclophosphamide, doxorubicin, vincristine) radiation therapy with TD 45 Gy (2.5 Gy daily, split course regimen) was performed. On bronchoscopy in February 1990 there were no more signs of bronchial tumor, but brushing of the right lower lobe showed cells of large cell carcinoma, whereas chest x-ray was unsuspicious (Figure 2). The patient was observed, and in January 1993 bronchoscopy was performed because of a progressing tumor of the left hilus, which revealed large-cell carcinoma in the apical segment of the lower left bronchus. In the right bronchial tree there were no signs of tumor (Figure 3). So, the cytological diagnosis of NSCLC was established 9 months after diagnosis of SCLC.

Discussion

The lung is one of the organs in which multiple primary cancers occur very often. Moreover, the lung is the most common site in patients with double cancer.[2]

Improved survival of SCLC patients after therapy results in an increased number of SPT cases. Criteria for the differentation of new lung lesion as SPT are: 1) different histological type, 2) different lobe, and 3) time interval of at least two[3] or three[4] years.

Sagman et al.[5] found 30 SPT in 800 SCLC patients – in 6 of them the SPT was NSCLC, and suggested that increased predisposition to SPT may be attributed to secondary effects of multimodality treatment and biological considerations although 2/6 SPT were classified as synchronous, i. e. SPT developed within 1 year.

Heyne et al.[6] estimated 14 SPT in 446 patients with SCLC, 6 of them NSCLC, and considered long-term survivors of SCLC as excellent candidates for chemoprevention trials.

Osterlind et al.[7] reported 13 SPT among 72 SCLC long-term survivors; 5/13 were NSCLC.

Souhami and Law[8] found only 8 SPT in 217 two-year survivors with SCLC; 1/8 was NSCLC.

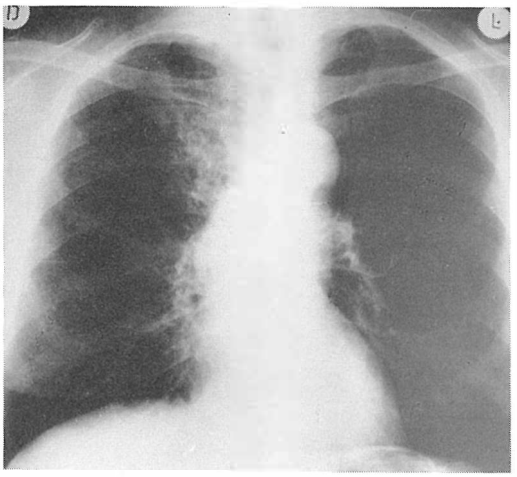

Figure 2.

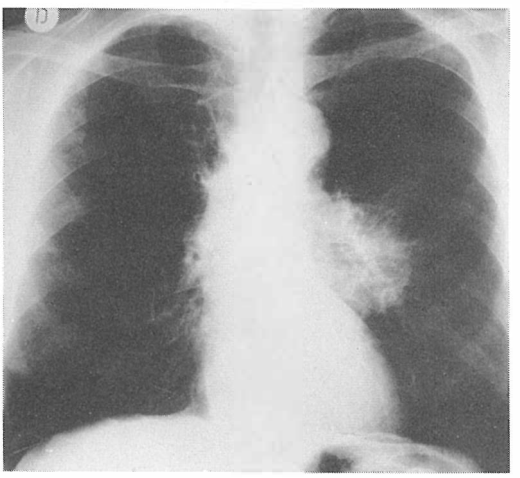

Figure 3.

Case No. 1 is undoubtedly a secondary primary NSCLC after successful treatment for SCLC: different histology, different lobe, and more than 3-year interval between the appearance of both tumors.

Case No. 2: it would have corresponded to these criteria too, had there not been bronchoscopy performed 9 months after the diagnosis of SCLC. Although NSCLC cells were taken by brushing biopsy from the right site, probably they arise from the tumor of the left lower lobe verified 3 years later. Therefore, this case is most probably synchronous double primary lung tumor. Regarding the doubling time of lung cancer, Marmorschtein et al.[9] consider all lung tumors found within 3 years as synchronous. So, we could not regard Case No. 2 as SPT due to chemo- and radiotherapy for SCLC. Accordingly, the relative risk of development of NSCLC as SPT, calculated in patients before three years from diagnosis of SCLC,[5,6,7] seems to be exaggerated.

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