

case report

Long-term disease-free interval after irradiation for locally advanced lung cancer

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Background. The purpose of the report is to describe a patient with the lung cancer who had long-term disease-free interval after the irradiation therapy.

Case report. The patient was a 58-year-old woman with large cell lung carcinoma with neck lymph node metastasis, which was treated with radical radiotherapy. Within a 9-year disease-free interval, the patient developed loco-regional recurrence and distant metastases.

Conclusions. Despite a long-term disease-free interval, non-small cell lung cancer represents a life-long threat to some patients and requires constant vigilance by medical practitioners.

Key words: lung neoplasms - radiotherapy; carcinoma, non-small-cell lung; disease free survival

Introduction

Locally advanced non-small cell carcinoma of the lung is one of the good candidates for irradiation therapy because of its anatomical location. Despite radical radiation therapy, local recurrence is observed in 20 - 60 % of patients with non-small cell lung cancer and the majority of all recurrences develop within 2 years after radiation therapy.¹⁻³

We report a case of recurrence within a 9-year disease-free interval of the first course of irradiation therapy.

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Case report

In February 1991, a 58-year-old woman was admitted to our hospital with cervical lymph node swelling which she noticed three months prior to the presentation. She was basically healthy without significant past medical history. Her physical examination revealed cervical lymph node adenopathy on the right. Bulkily swollen right mediastinal lymph nodes with a tumour of the right upper lobe, which was adjacent to the swollen lymph nodes, were observed on chest X-ray and CT scan on admission (Figure 1). Biopsy from the cervical lymph node revealed metastatic large cell carcinoma of the lung. A brain MRI and an ultrasound echogram of the abdomen and a bone scintigram revealed no metastasis, therefore we treated her as patients with locally advanced disease in spite of there were proven metastases in the cervi-

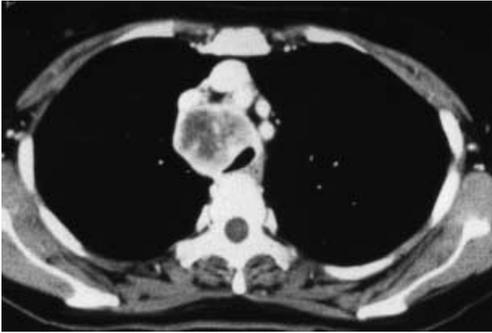


Figure 1. Chest CT scan on admission. Bulkily swollen right mediastinal lymph nodes with a tumour of the right upper lobe, which was adjacent to the swollen mediastinal lymph nodes, were observed.



Figure 2. Chest CT scan on second admission. Loco-regional recurrence of the right upper lobe of the lung was observed.

cal lymph nodes. However, we clinically diagnosed this patient as large cell carcinoma of the lung of right upper lobe; clinical T3N2M1, stage IV. Thereafter, she received external radiation therapy to the primary lesion, mediastinal and supraclavicular lymph nodes and right cervical lymph nodes with a total dose of 60 Gy in 30 fractions over 47 days. The response was evaluated as partial response; the patient then received one course of chemotherapy consisted of cisplatin, vindesin, and ifosphamide. The patient was discharged from the hospital and followed up regularly. She was free of any signs of recurrence until February 2001, when she developed dry cough and dysarthria.

Chest CT scan revealed loco-regional re-

currence of the right upper lobe of the lung (Figure 2), and brain MRI shown multiple nodular metastases to the cerebrum (Figure 3). We also observed multiple uptakes on bone scintigram (Figure 4). The patient did not want to receive additional intensive therapy and she died of the disease one month after the diagnosis of loco-regional recurrence and distant metastasis. Post-mortem examination was not permitted.

Discussion

Radiotherapy is one the choice of treatment for locally advanced non-small cell lung cancer owing to an anatomical restriction. Despite radical radiotherapy, a relatively high incidence of loco-regional recurrences has been observed.¹⁻³ Although the majority of all loco-regional recurrences develop outside or at the margin of the treatment portal within 2 years after radiation therapy, some recurrences have been observed after a long latent period.⁴⁻⁷ Most of the distant metastases also

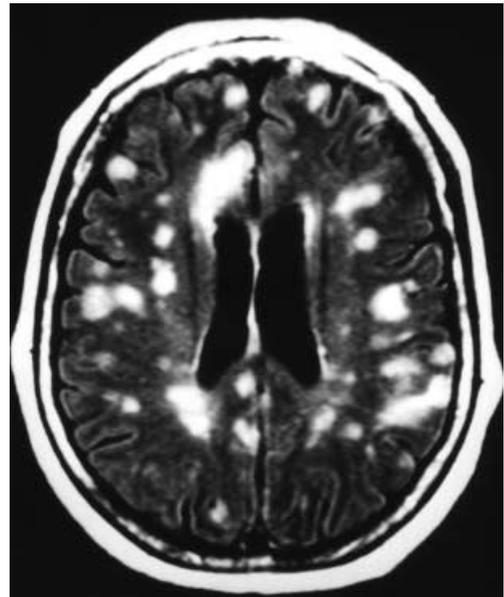


Figure 3. Brain MRI on second admission. Multiple, nodular metastasis to the cerebrum were observed.



Figure 4. Bone scintigram on second admission. Multiple uptakes were observed on the scintigram.

occur within 2 years after treatment and the common sites of distant metastases are the bones and/or lungs.³ Our patient developed recurrence inside the irradiation field and distant metastases within a 9-year disease-free interval of the first course of radiation therapy for the primary lesion and cervical lymph node metastasis.

Many recent investigators have recommended chemotherapy with taxan for recurrent non-small cell carcinoma.^{8,9} Very recently, Gefitinib, an oral selective inhibitor of the epidermal growth factor receptor (EGFR) tyrosine kinase, has been reported to be a safe agent, although some toxic effects, such as interstitial pneumonia, diarrhea and skin rash have been recognized.¹⁰⁻¹² But our patient did not want to receive any additional intensive treatment. Moreover, the patient's condition got worse very rapidly and she died of the disease only one month after the diagnosis of recurrence.

A general belief in the treatment of cancers has it that a cure is present if the disease-free interval is longer than five years. This concept may apply to the majority of cases of lung cancer, but rare cases do recur after many years of disease-free survival. Most of these patients who had long-term of disease-free interval were those with lung adenocarcinoma.^{4,7} Therefore, a recurrence of large cell carcinoma of the lung within 9 years after irradiation is almost unique. Although the patient had developed loco-regional recurrence and distant metastases, we had some hope for her additional long-term survival, because the patient had a long disease-free interval from the initial therapy to the recurrences and because there has been no deterioration in her performance status for more than 9 years after the completion of the radiation therapy. This observation suggests either a long period of dormancy of residual large cell carcinoma cells prior to re-initiation of proliferative activity or the presence of a more slowly growing population of residual cells.

Certain clues of mechanism of the late recurrence might have existed in the clinopathological information; but, at present, we are not able to detect the clues. Whatever mechanism was involved, it is clear that radical radiation therapy did not provide certain cure in our patient. Despite a long-term disease-free interval, large cell carcinoma of the lung represents a life-long threat to some patients, and it requires constant vigilance by medical practitioners.

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