




## Case Report

# Late Endobronchial Pulmonary Metastasis in a Patient with Breast Cancer

İbrahim Güven Coşğun<sup>1</sup> , Turgut Kaçan<sup>2</sup> , Gül Erten<sup>3</sup> <sup>1</sup>Department of Pulmonology, Afyonkarahisar State Hospital, Afyonkarahisar, Turkey<sup>2</sup>Department of Oncology, Afyonkarahisar State Hospital, Afyonkarahisar, Turkey<sup>3</sup>Department of Pathology, Afyonkarahisar State Hospital, Afyonkarahisar, Turkey

**Cite this article as:** Coşğun İG, Kaçan T, Erten G. Late Endobronchial Pulmonary Metastasis in a Patient with Breast Cancer. Turk Thorac J 2018; 19; 97-9.

## Abstract

The lung is a common location for malignant metastases. However, endobronchial metastases from nonpulmonary neoplasms are rare. Metastatic breast cancer usually occurs in 2-3 years of the disease course. A 65-year-old woman visited our hospital for the evaluation of dry cough. The patient had a history of breast cancer, which was treated with modified radical mastectomy and axillary dissection 10 years ago; she was then treated with aromatase inhibitor for 5 years. Chest X-ray revealed right hilum enlargement. Thorax computed tomography revealed a 35-mm diameter mass that was localized in the right hilum. Fiberoptic bronchoscopy was performed, and an endobronchial lesion was observed in the right main lobe carina. Pathological evaluation revealed that the mass was a metastasis of the invasive ductal carcinoma of the breast. Weekly paclitaxel chemotherapy was initiated because of the symptomatic disease. We reported the case of a patient with breast cancer who had an endobronchial metastasis. Her disease-free interval was 10 years. This case indicates that a long-term follow-up of breast cancer is necessary, and biopsies must be performed to make a final diagnosis when any suspicious hilum enlargement is observed.

**KEYWORDS:** Breast cancer, pulmonary metastasis, endobronchial metastasis

**Received:** 02.03.2017

**Accepted:** 29.06.2017

**Available Online Date:** 29.11.2017

## INTRODUCTION

The lung is a common location for the occurrence of malignant metastases. Patients with isolated lung metastases are rare; usually, local or diffuse lymphangitis with single or multiple lung metastases are found. Metastatic breast cancer usually occurs in 2-3 years of the disease course. Pulmonary metastasis of breast cancer more than 10 years the diagnosis time is very rare [1]. We reported a case of a patient with breast cancer who presented with a pulmonary endobronchial metastasis after 10 years.

## CASE PRESENTATION

A 65-year-old woman visited Afyonkarahisar State Hospital for the evaluation of dry cough. Posterior-anterior lung graphy revealed right hilar enlargement (Figure 1). The patient had a history of early stage breast cancer, which was treated with modified radical mastectomy and axillary dissection 10 years ago. The patient received aromatase inhibitor for 5 years. Physical examination was normal except for cough. Chest X-ray also showed right hilar enlargement. Thorax computed tomography revealed a 35 mm diameter mass that was localized in the right hilum (Figure 2). The mass was suspected to be either metastatic or primary lung cancer. Fiberoptic bronchoscopy was performed, and an endobronchial lesion was observed in the right main lobe carina (Figure 3). Biopsies of the endobronchial lesion were performed. The pathological evaluation revealed that the mass was a metastasis of the invasive ductal carcinoma of the breast. The pathology results were as follows: estrogen receptor, positive; progesterone receptor, negative; human epidermal growth factor receptor, negative; and Ki-67, 3% using immunohistochemical staining (Figure 4). Positron emission tomography-computed tomography showed an increased standardized uptake value (SUVmax, 5.16) for the primary endobronchial lesion and suspicious metastatic pulmonary nodules and lymph nodes in the mediastinum. Weekly paclitaxel chemotherapy was initiated because of the symptomatic disease.

Written informed consent was obtained from patient.

**This study was presented at the European Congress for Bronchology and Interventional Pulmonology, 27-30 April 2017, Belgrade, Serbia.**

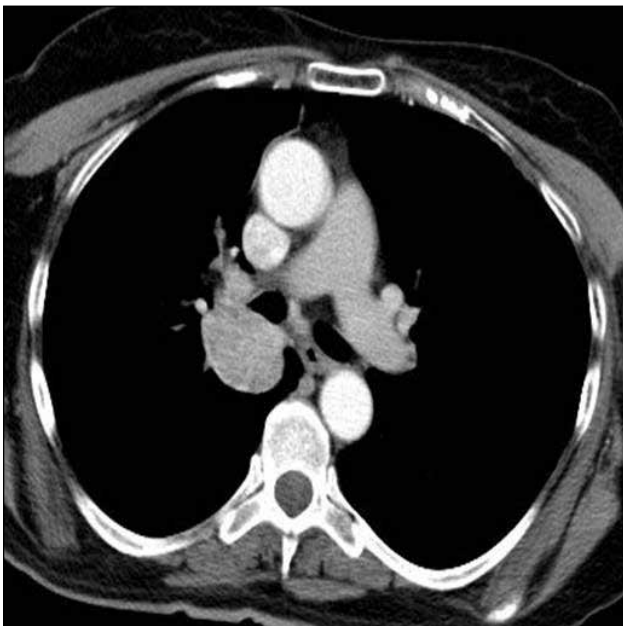
**Address for Correspondence:** İbrahim Güven Coşğun, Department of Pulmonology, Afyonkarahisar State Hospital, Afyonkarahisar, Turkey

E-mail: Dr\_guven@hotmail.com

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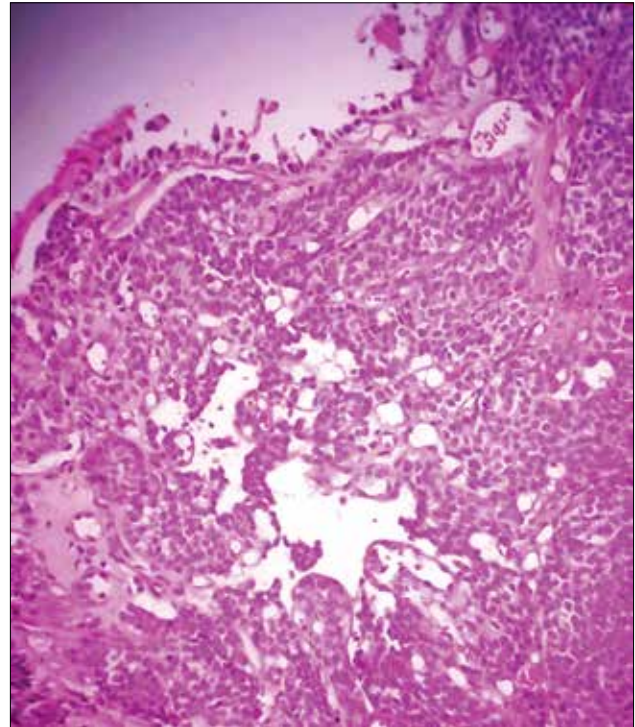
**Figure 1.** Chest X-ray showing right hilar enlargement



**Figure 2.** Thorax computed tomography showing a 35-mm diameter mass localized in the right hilum



**Figure 3.** Fiberoptic bronchoscopy showing an endobronchial lesion in the right main lobe carina



**Figure 4.** Strong estrogen receptor antibody expression in the tumor ( $\times 100$ )

#### DISCUSSION

Lung metastases from extrapulmonary primary malignancies are common [1]. However, endobronchial metastases from nonpulmonary neoplasms are rare. Various primary tumors have been associated with endobronchial metastasis, predominantly in breast, renal, and colon malignancies [2]. Thus, when an endobronchial mass is detected, it is important to distinguish between primary lung cancer and metastasis of extrathoracic primary tumors. Metastasis of lung extrapulmonary malignancies involve different routes. Secondary invasion via a parenchymal or mediastinal lesion, lymphatic spread, and direct invasion is a possible route [3]. Metastatic breast cancer usually occurs within 2-3 years of the disease course. Therefore, endobronchial metastasis and late manifestation are very rare [4].

Clinical and radiologic findings vary according to the location of metastatic lesions. Cough and hemoptysis are common symptoms of endobronchial metastasis; some patients are asymptomatic. Multiple pulmonary nodules, atelectasis, hilar masses, and mediastinal lymphadenopathy are possible radiographic findings. However, some patients have normal chest radiographic findings. In our case, the only symptom was cough, and the radiographic finding was an abnormal opacity on chest X-ray.

A positive association has been described between disease-free interval and positive hormone receptor [5]. In our case, the status of the hormonal receptor was positive. Although radiologic findings and prognostic factors of cancers can help in differentiating the possible diagnosis, a final diagnosis must be made on the basis of the results of biopsies [6]. Hence, for

our case, biopsies were performed via bronchoscopy, and the final diagnosis was invasive ductal carcinoma of the breast.

We present the case of a patient with breast cancer who had an endobronchial metastasis. Her disease-free interval was 10 years. This case indicates that a long-term follow-up of breast cancer is necessary, and biopsies must be performed to make a final diagnosis.

**Informed Consent:** Written informed consent was obtained from patient who participated in this study.

**Peer-review:** Externally peer-reviewed.

**Author contributions:** Concept - G.C.; Design - G.C., T.K., G.E.; Supervision - G.C., T.K., G.E.; Resource - G.C., T.K.; Materials - G.C., T.K.; Data Collection and/or Processing - G.C., T.K.; Analysis and/or Interpretation - G.C., T.K., G.E.; Literature Search - G.C., T.K., G.E.; Writing - G.C., T.K.; Critical Reviews - G.C., T.K.

**Conflict of Interest:** No conflict of interest was declared by the authors.

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

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