A case of small cell cancer of the breast in a male with synchronous stage IV non-small cell lung carcinoma

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Abstract

Extrapulmonary small cell carcinomas (EPSCC) are extremely rare. Most reports indicate success with therapy directed at the tumor as if it was pulmonary small cell carcinoma. Primary small cell carcinoma of the breast is an uncommon form of EPSCC. Differentiating between a primary small cell carcinoma of the breast from metastatic disease to the breast is very important. According to the literature, there have been approximately 70 cases reported worldwide. Of these cases, only two cases are documented in men.6,8

We present a case of a male patient diagnosed with stage IV non-small cell lung carcinoma first and then subsequently diagnosed with a concurrent small cell carcinoma of the breast.

Case Report

A 61 year old Caucasian male was transferred from an outside facility for respiratory failure and acute renal failure. On arrival, the patient had been intubated at the outside facility so he was moved to the intensive care unit. Two days after admission, hemoptysis was noted from the patient’s endotracheal (ET) tube. A computed tomography (CT) scan of the chest was performed and demonstrated a left upper lobe bronchial obstruction with associated atelectasis, bilateral pleural effusions and mediastinal lymphadenopathy (LAD). The obstruction at the time was assumed to be related to an endobronchial malignancy due to fullness of the hilum per radiology. A bronchoscopy was performed the next day. This documented an endobronchial mass in the posterior segment of the right upper lobe, a mass obliterating the entire orifice of the posterior left upper lobe with active bleeding. Biopsies were obtained from the lung masses as well as bronchial washings from both lungs. Pathology revealed a non-small cell lung carcinoma (NSCLC) with squamous cell type from the right upper lobe biopsy and atypical squamous metaplastic mucosa with fibrin material from the left upper lobe biopsy.

One week later, the patient underwent a video-assisted thoracoscopic surgery (VATS) procedure with pleural stripping and drainage of the right sided effusion to check for a source of malignancy. Cytology of the effusion was negative for any malignant cells. Pleural biopsy demonstrated fibrinopurulent exudate, marked inflammation, necrosis and hemorrhage without any evidence of malignancy.

CT scans of the abdomen, pelvis and head were performed for staging of disease. A chronic, left atrophic kidney was found but otherwise scans were negative for malignancy. A bone scan was also performed and was negative for metastatic lesions.

He was extubated successfully and continued on hemodialysis for his renal failure thought to be related to hypotension and one working kidney. At discharge, he was transferred to a rehabilitation facility with an appointment for a local oncologist near his home to begin treatment.

Approximately one month after discharge, he returned to our hospital for hemoptysis. A repeat CT scan of the chest was done and showed no change in the size of the mass documented in the left upper lobe but did show improvement in the consolidation and atelectasis documented two months prior. It also revealed gynecomastia of the right breast without obvious masses. The patient had a biopsy by interventional radiology (IR) of the lingula. Pathology showed a non-small cell lung cancer of squamous cell type. After almost complete resolution of the patient’s hemoptysis, a bronchoscopy was repeated due to a positive biopsy of the right upper lobe on previous admission but no mass documented on CT scan of the chest. Repeat bronchoscopy demonstrated sharp carina, irregularity of the anterior segment of the right upper lobe, and abnormal mucosa of the left main bronchus towards the lingula. Biopsies were taken of the abnormal mucosa of the left upper lobe and bronchoalveolar lavage (BAL) was taken of the right upper lobes.

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Introduction

Extrapulmonary small cell carcinomas (EPSCC) are extremely rare. The most frequent sites of origin documented in the literature include the female genital tract (vagina, cervix), gastrointestinal tract (pancreas, cecum, stomach, esophagus), genitourinary tract (bladder, kidney), and head and neck.1,2 The tumors are equivalent to the pulmonary component in terms of morphology and clinical behavior. Most reports indicate success with therapy directed at the tumor as if it was a pulmonary small cell carcinoma.3 Some reports indicate success with surgery for local disease that is amenable to surgery. However, there are no guidelines or treatment options clearly defined for EPSCC.

Primary small cell carcinoma of the breast (PSCCB) is an uncommon form of EPSCC. Differentiating between a primary small cell carcinoma of the breast from metastatic disease to the breast is very important. Therefore, a non-mammary site must also be excluded. The tissue must also be examined for an in-situ component as this would favor breast as the primary site.

According to the literature, there have been approximately 70 cases reported worldwide of primary small cell carcinoma of the breast.7-15 Of these cases, there are only two cases documented in men.6,8

We present a case of a male patient diagnosed with stage IV non-small cell lung carcinoma first and then subsequently diagnosed with a concurrent small cell carcinoma of the breast.
Figure 1. PET scan showing the hypermetabolic lesion in the left pulmonary hilar area with SUV of 18.8 that was not apparent on computed tomography after diagnosis.

Figure 2. PET scan showing the right retroareolar breast mass with SUV of 2.8 that was discovered while the patient was being treated for his NSCLC of the lung.

Figure 3. H&E stain showing sheets of crowded cells with hyperchromatic, pleomorphic nuclei with high NC ratio, scant cytoplasm, easily seen mitoses.