Single Lung Cyst Caused by Metastatic Bladder Cancer
—A Case Report

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The lungs are one of the most common sites of metastases from transitional cell carcinoma of the urinary bladder, with the typical radiological manifestations of multiple nodules and variable sizes. It is unusual for the metastatic nodules to be cavitory. Lung cysts caused by metastatic tumors are far more rare. We present a 50-year-old male who had undergone a radical cystectomy due to bladder cancer 7 years previous. He had suffered from productive cough and lower right chest pain for 10 days prior to admission. The chest radiography showed a solitary thin wall cyst in the right middle lobe. A lobectomy was done, and the pathology showed lung metastasis from transitional cell carcinoma of the urinary bladder. Although a single lung cyst caused by metastatic cancer is extremely rare, we emphasize that in the long list of differential diagnoses of single lung cyst, the clinician should consider the possibility of a secondary neoplasm with lung metastasis. (Thorac Med 2002; 17: 56-60)

Key words: lung cyst, transitional cell carcinoma, lung metastasis

Introduction

Lung cysts are not uncommon, and most are acquired. The term “cyst” is used to describe any thin-walled gas- or fluid-containing space in the organ. The differential diagnoses of cystic lung lesions [1] are usually divided into congenital (e.g., bronchogenic cysts, cystic adenomatoid malformations, pulmonary sequestration) or acquired cystic diseases (e.g., bullous emphysema, traumatic lung cysts, post-infectious pneumatoceles, pulmonary hadatid cysts). Cysts are rarely caused by metastatic tumors. We herein report a case of a lung cyst caused by metastasis from transitional cell carcinoma (TCC) of the urinary bladder.

Case Report

A 50-year-old male was diagnosed with TCC of the urinary bladder, and had received a radical cystectomy 7 years ago. The pathological staging was Grade II, stage B1. The chest radiography was normal at that time (Figure 1). After surgery, he was regularly followed up in the urologic clinic. He had smoked ten cigarettes per...
day since he was young. Otherwise, no systemic disease was revealed. He presented to the chest clinic with the chief complaints of lower right chest pain and a productive cough lasting for 10 days prior to admission. No body weight loss or fever was noted. The chest posteroanterior and lateral views revealed a $4 \times 3.5 \times 4.5$ cm$^3$ thin-walled cystic lesion in the right middle lobe (Figure 2). Computed tomography (CT) showed a thin-walled cystic lesion with mildly irregular lining in the same region (Figure 3). The sputum cytology was negative, and the bronchoscopic examination was negative for a central lesion. Bronchial brushing cytology showed a few degenerative bronchial epithelial cells, and a transbronchial lung biopsy revealed only minimal fibrosis. So, he was referred to the chest surgeon for a right middle lobe lobectomy. The pathology report showed one cystic lesion, measuring $4.2 \times 3.2 \times 2.4$ cm$^3$ in size. Microscopically, it revealed metastatic transitional cell carcinoma with a papillary pattern (Figure 4). The diagnosis of bladder cancer with lung metastasis was then made.

Fig. 1. The chest radiography taken 7 years ago was normal.

Fig. 2. Chest posteroanterior (A) and lateral (B) films showed a $4 \times 3.5 \times 4.5$ cm$^3$ thin-walled cystic lesion in the right middle lobe.
Discussion

The lungs are one of the most common metastatic sites for a variety of malignancies. The pulmonary arteries are the most common route by which a tumor spreads to the lungs. The most common manifestation of metastatic disease to the lungs consists of solitary or multiple nodules within the lung parenchyma [2-3].

The cavitation of a nodular metastasis is not as common as in those with primary lung carcinoma [4,5-6]. For example, in one report, cavitation was identified in 4% of metastatic deposits and in 9% of primary neoplasms [6]. Up to two thirds of cavitary metastases are squamous cell carcinomas originating from the larynx, pharynx, esophagus, or uterine cervix, and the other one third may be adenocarcinomas arising most commonly from the colon or rectum [4,5-6].

Lung metastasis from transitional cell carcinoma is not uncommon [7]. But, a cystic form of lung metastasis is rare. To our knowledge, only one case has been reported in the English literature since 1966 [8]. In that report, by Margolis and Liss, the cysts caused by TCC lung metastasis were multiple; there was no detailed description of the cystic wall. In our case, the CT scan demonstrated an irregular lining in this thin-walled cystic lesion. We thus suggest that the irregular lining might heighten the possibility of malignancy.

Single lung cyst can be of many differential diagnoses (e.g., bronchogenic cysts, post-traumatic lung cysts and post-infectious pneumatoceles). Some studies have demonstrated that bronchial carcinoma might arise from a preexisting bronchogenic cyst [9,10-11]. However, in our case, the chest radiography taken 7 years ago was normal, and there was no history of chest contusion or pulmonary infection. Since he had has TCC 7 years ago, a single lung cyst caused by TCC metastasis should be considered.

In summary, we emphasize that, with a history of malignancy, clinicians should be aware that a single lung cyst might be caused by metastatic lung cancer.
Single Lung Cyst Caused by Tumor Metastasis

References

膀胱癌併發單一囊泡轉移——病例報告

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膀胱癌併發肺及骨轉移，癌症併發肺轉移多形成大小不一之腫塊為主，而以空洞表現者已屬少見，而以囊泡表現者更是少見。本病例為一50歲男性患者因咳嗽及右下胸痛至本院胸腔科檢查，病人7年前被診斷為膀胱癌，接受膀胱切除手術，胸部X光攝影顯示右中葉單一囊泡病變，經開刀證實為膀胱癌肺轉移，雖然癌症併發肺單一囊泡病變極為少見，但臨床X光判讀對單一囊泡病變仍應將癌症併發肺轉移，列入鑑別診斷之一。（胸腔醫學 2002; 17: 56-60）

關鍵詞：囊泡病，膀胱癌，肺轉移