

A Case of Inactive Tuberculosis Coexisting with Adenocarcinoma and Aspergilloma

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Abstract

A patient treated at our hospital with the diagnosis of smear positive pulmonary tuberculosis was rehospitalized six years later for hemoptysis. The chest x-ray showed a nearly homogenous opacity on the left upper zone. Computed tomography revealed a fungus ball in a cavity on the left upper lobe. The patient underwent left upper lobectomy because of the recurrent hemoptysis. Histopathologic diagnosis of the resected material was adenocarcinoma with

the aspergilloma in the cavity on apicoposterior segment of the upper lobe. The case was presented for it demonstrated, in a patient with a background of tuberculosis, an adenocarcinoma which had developed on the wall of a cavity containing a fungus ball.

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Key words: pulmonary aspergilloma, bronchial carcinoma, tuberculous cavity

Introduction

In regions where tuberculosis (TB) is endemic, aspergilloma developing within a closed tuberculous cavity in the lung is not a rare event. In a study screening 544 treated cavitary TB cases, aspergilloma was diagnosed in 17% (1). A small fraction of these patients were asymptomatic, but the majority had hemoptysis.

Many studies have drawn attention to the increase in the risk of carcinoma in cases with radiological evidence of TB sequelae. It has been reported that scar cancers develop in 25% of such cases (2).

This is the first report of a patient who developed both aspergilloma and adenocarcinoma within a treated tuberculous cavity.

Case report

A 52 year old male patient was referred with a history of chest and back pain, hemoptysis, and fatigue which had developed within the last month. He had been treated for active tuberculosis in our hospital 6 years ago.

Physical examination revealed decreased lung sounds on the upper and middle hemithorax. Erythrocyte sedimentation rate was 57 mm/h, hematocrit 39%, hemoglobin 13.7 g/dl. The previous x-ray of the patient taken 6 years ago showed a

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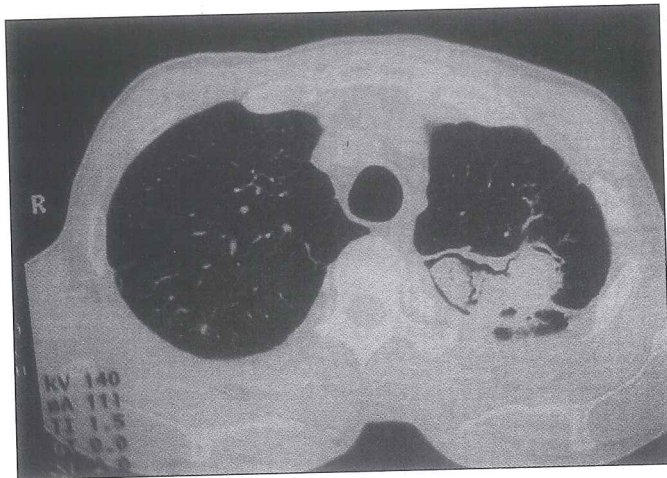


Figure 1. Computed tomography of the left upper lobe showing the cavity containing the fungus ball.

nonhomogenous infiltration with multiple cavities on the right and the left middle lobes. After completion of the treatment, the x-ray revealed only a thin-walled cavity in the left upper lobe. The current x-ray showed a 6x4.7 cm nonhomogenous opacity. On the left lateral view there was a 1.5x2 cm cavitory image in the left apicoposterior segment. Thoracic computed tomography revealed cavitory lesions which contained three fungus balls (the largest about 2.5 cm diameter) and pleural thickening (Figure 1).

Fiberoptic bronchoscopy revealed no endobronchial lesions. Bronchial lavage was nondiagnostic. The case was transferred to the surgical department with a tentative diagnosis of pulmonary aspergilloma.

A left upper lobectomy was performed and the surgical material was pathologically examined. On the apical segment, a cavity filled with a gelatinous material belonging to the fungus was observed. And a marked increase of collagenous tissue was noted on the surface of the cavity. Microscopic examination revealed an adenocarcinoma developing on the cavity wall and not exceeding the visceral pleura (Figure 2). Peribronchial lymph nodes showed no metastasis.

The case was evaluated as stage 1 non-small cell lung cancer (T1N0M0). Chemotherapy or radiotherapy were not considered necessary and it was decided to monitor the progress of the patient with no other treatment.

Discussion

Pulmonary aspergilloma is the most common clinical condition caused by *Aspergillus*. Latent tuberculosis, sarcoidosis, bronchiectasis, bronchial cysts, chronic abscess, cavity of carcinoma, rheumatoid arthritis, intrapulmonary sequestration and histoplasmosis are some of the underlying conditions which facilitate infestation by the fungi (2).

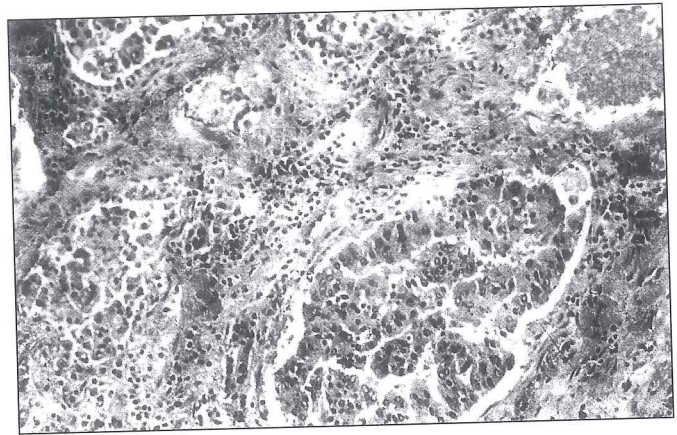


Figure 1. Adenocarcinoma of the lung (center of the picture) and cavity wall with aspergilloma (upper right corner of the picture) (Hematoxylin-eosin x 20).

In Turkey, aspergillosis is most commonly encountered in patients with pulmonary tuberculosis. Ölçmen et al reported pulmonary tuberculosis in 22 out of 26 cases who underwent surgery for aspergillosis. The underlying conditions in the remaining four patients were bullous lung, hydatid cyst, a previously operated hydatid cyst, and lung carcinoma (3).

The common symptoms in patients with aspergilloma are hemoptysis, cough and expectoration. Hemoptysis is found in 75-90% of patients. Massive hemoptysis, resulting from erosion of the bronchial arteries, was reported in a quarter of the cases (2) Weight loss, dyspnoea and chest pain were the accompanying symptoms.

A radiological picture, described as a typical halo sign within the cavity, together with involvement of the parenchyma and of the pleura causing pleural thickening and calcification, was reported (3). The chest x-ray findings of our patient agreed with this description. Histopathological examination is required for the definitive diagnosis of aspergilloma. This may be done on material obtained during surgery, or by transthoracic needle aspiration.

Surgery is the treatment of choice in aspergilloma. Surgery is planned according to the underlying disease. Bronchial arterial embolisation is done in selected cases (1).

In regions where the disease is endemic, parenchymal scars in the lung are predominantly due to tuberculosis. In a study on cancer patients with a previous history of tuberculosis, the histological type was squamous cell in 60% and adenocarcinoma in 30% of the patients (4).

The most striking finding in our case was the histological diagnosis of adenocarcinoma developing on the cavity wall. Auerbach et al. (5) reported development of adenocarcinoma in 72% of 82 patients with scar cancer. In a study by

Ueda et al (6), 3 out of 41 patients with pulmonary aspergilloma had died from lung cancer during follow-up and they concluded that patients with asymptomatic pulmonary aspergillomas should be clinically monitored for signs of lung cancer. Though our case was symptomatic for aspergilloma, the presence of the lung cancer was detected by postoperative pathological examination.

By presenting this case we suggest that every case of pulmonary aspergilloma should be examined for malignancies.

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