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Case Report

Tuberculosis and Malignancy Coexistence with Cavitary Lesion in the Lung Radiologically

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Abstract

When a cavity of characterized radiolucent zone is observed in lung graphy, the first thing that comes to mind are tuberculosis, bronchial cancer, bacterial infections (as nocardia) or rarely wegener granulomatosis. Clinical suspicion or abnormal radiography require further examination in the name of lung cancer. Computerized tomography (CT) is the basic screening method. While position emission tomography (PET) is rather used for staging, magnetic resonance (MR) is used for problem solving. Adenocarcinoma forms 30% of all lung cancers. İt is the most common type of cancer among women and non-smoker patients. Cavitation is rare in lung adenocarcinomas (2%). If there is cavitation, it is usually in the form of a single cavity. The most common cavitation in lung cancers is in epidermoid carcinoma (82%). In the light of these information, we would like to present 35-year-old male patient whose chest radiography is compatible with cavity and has ARB (+) but diagnosed with adenocarcinoma.

Keywords: Cavitary, malignancy, tuberculosis

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While lung cancer was a rare disease in the beginning of 20th. Century, it has become common and in the year 2008;1.6 million newly diagnosed lung cancer patients were recorded throughout the world. In the year 2010, it was determined that 19% of cancer death in the world were caused by lung cancer.[1]

The incidence of lung cancer increases with age and makes peak at the ages of 60's and 70's. While the incidence of lung cancer is low under the age of 25, it increases after 45. Throughout the world, the incidence of lung cancer increases at the rate of 0.5% every year.

Smoking and exposure to passive smoking, air pollution, genetic factors, occupational factors, gender, diet, chronical lung diseases and radiotherapy are the main risk factors.[2]

When a cavity of characterized radiolucent zone is observed in lung graphy, the first thing that comes to mind are tuberculosis, bronchial cancer, bacterial infections (as nocardia) or rarely wegener granulomatosis.

Tuberculosis should be considered in cavitary lung diseases of our country. Although there is no need for further examination in patients with acid-fast bacilli (ARB) (+) in sputum, tuberculosis and cancer association should not be forgotten.[3]

Clinical suspicion or abnormal radiography require further examination in the name of lung cancer. Computerized tomography (CT) is the basic screening method. While position emission tomography (PET) is rather used for staging, magnetic resonance (MR) is used for problem solving.[4]

Adenocarcinoma forms 30% of all lung cancers. İt is the most common type of cancer among women and non-

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smoker patients. Cavitation is rare in lung adenocarcinomas (2%). If there is cavitation, it is usually in the form of a single cavity. The most common cavitation in lung cancers is in epidermoid carcinoma (82%).[4]

In the light of these information, we would like to present 35-year-old male patient whose chest radiography is compatible with cavity and has ARB (+) but diagnosed with adenocarcinoma.

Case Report

35-year-old male patient referred our clinic with the complaint of on-going cough after upper respiratory tract infection. First it was thought to be postinfectious cough but when anamnesis was taken in details we learned he had long-periods of cough from time to time and had never smoked. In the PA (posteroanterior) chest radiography (Fig. 1), cavitary lesion was observed which is compatible with nearly 6x5 cm at the right apical zone and the patient was directed to pulmonology polyclinics with prediagnosis of tuberculosis and/or malignancy. As a result of thorax CT (Fig. 2), there was 7x5.5 cm consolidated area which directly lies towards pleura at the right lung upper lob lateral inferior section, cavitation in the center and zones in septate air density so ARB of the patients was required. When the first ARB was found positive, anti-tbc treatment was initiated. Despite 4 months of treatment, when there was no change in the clinic and control thorax BT of the patients, fiberoptic bronchoscopy was planned for the patient. As a result of bronchoscopy, bronchial system on the right is open. Right upper lob was observed in two segments. Muscularis mucosae was observed. Bronchial lavage was taken from upper right. On the left, all the lob segment inlets was observed open. Right lung upper lob BAL (bronchoalveolar lavage) and right lung upper lob distinction carina İİAS (fine needle aspiration cytology) benign, however right lung upper lob transbronchial biopsy was resulted as adenocarcinoma so the patient was asked for PET. As a result of PET, lesion known at right lung upper lob was reported as hypermetabolic at malignity degree (SUV max: 11.3). Since the bronchial lavage NTM (non tuberculosis mycobacterium) typology was resulted as M.abscessus, the patient was treated with imipenem 4*1 gr iv, amikacin 1*1 gr iv and clarithromycin 2*500 mg po by Pulmonary Medicine. The patient was consulted with Pulmonary Medicine; it was decided to make right upper lobectomy and patient was referred to oncology clinic after operation.

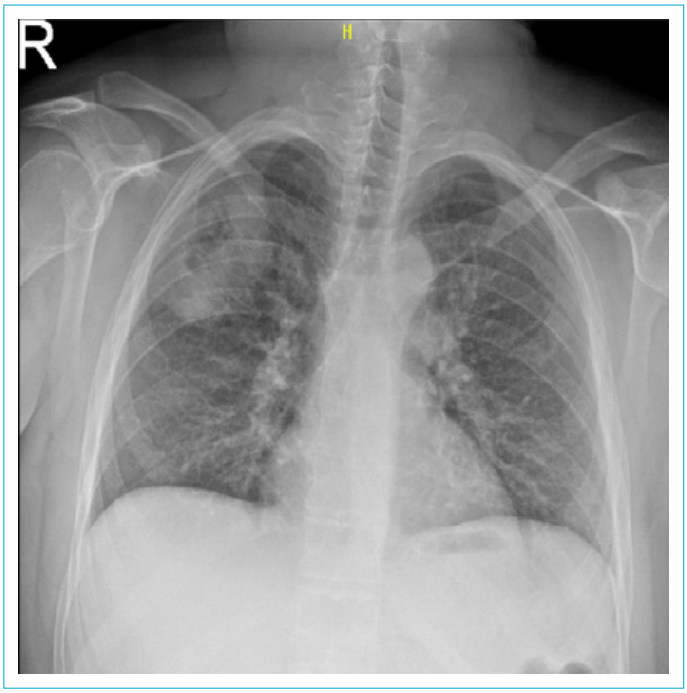

Figure 1. Posteroanterior chest radiography.

Discussion

Cases of lung adenocancer radiology compatible with tuberculosis among young people is increasing everyday. Küver et al.[5] showed through the case that lung cancer can make miliary spread to its own parenchyma and in the differential diagnosis tuberculosis and metastases should absolutely be considered.

In a study of Meteroğlu et al.,[6] researchers mention 10 cases which were taken to operation with prediagnosis of mediastinal and malign mass in the lung and as a result of patology reported as necrotizing granuloma compatible with tuberculosis and to whom it was started to make antituberculosis treatment.

As it can be understood from this study, lung-based malignity in a pathology existing in lung parenchyma can be metastases of a malignity which is noe primarily based on

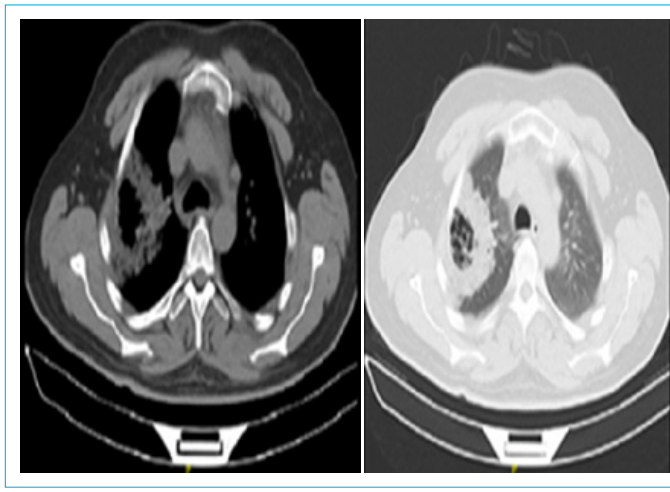

Figure 2. Thorax CT.

lung or can be tuberculosis.

İt is thought that tuberculosis can increase development of lung cancer and there are various studies supporting this idea. Therefore the first cohort study which shows relation between lung cancer and tuberculosis on country basis was carried out in Taiwan. In Taiwan control group/tuberculosis group (23.984/5657) was analyzed in the sense of incidence between 1997-2008.

In the multivariate analysis carried out with tuberculosis and COPD population, it was observed that cancer incidence has increased. The risk of lung cancer especially among tuberculosis population was 1.3%; it was 0.8% among control group and the difference was significant ($p<0.001$).[7]

Diagnosis of lung cancer can delay when tuberculosis coexists because tuberculosis table masks clinic and radiology most of the time. Diagnosis of lung cancer may delay 4-11 months in the existence of tuberculosis.[8]

As in our case, it is favorable for the patient to have a diagnosis of tuberculosis in the presence of tuberculosis and active tuberculosis. Because, in such a case, treatment for at least 2 to 3 months after treatment of malignancy is required. Otherwise, operating an active tuberculosis patient or applying chemotherapy may increase mortality and morbidity.

Coexistence of lung cancer and tuberculosis may cause delay in the treatment for both diseases and effects survival negatively. It was reported in various studies that diagnosis of especially lung cancer delay 11.7 months (1-524 months) and the phase upsurges. Upsurge of the phase decreases operability and thereby survival.[7]

In our case, tuberculosis sequelae was a risk factor for adenocarcinoma and adenocarcinoma may have caused reactivation of tuberculosis. The cause of cavitation in our case may be thought to be due to tuberculosis.

In the light of all these information, as a result of consultations of the patient mentioned in the case presentation, it was decided to be an adenocarcinoma thought to develop in the basis of tuberculosis.

Result

As a result, although there are many diseases which cause cavity in the lung; with the help of characteristic radiological findings, accompanying symptoms and medical history, it is quite an important approach to direct patients to the correct unit by making differential diagnosis in the first stage.

Disclosures

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Conflict of Interest: None declared.

Informed Consent: Written informed consent was obtained from the patient for the publication of the case report and the accompanying images.

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