

Complicated Pneumoconiosis Simulating Pulmonary Metastases or Lung Cancer: A Case Report

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Summary

The presence of major lung opacities in the cases with complicated pneumoconiosis may create confusion in the diagnosis of primary lung cancer or metastases from extra-pulmonary tumors. In this report, we presented a patient with two major opacities in the upper parts of the both lungs due to anthracosis and simultaneously having the diagnosis of colon cancer. The differential diagnosis of pulmonary opacities in a case with colorectal cancer was done in the light of the consistent literature.

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Key Words: Pneumoconiosis, metastases, lung cancer

Özet

Akciğer Metastaz veya Kanserini Taklit Eden Komplike Pnöмокonyoz: Olgu Sunumu

Komplike pnöмокonyozlu olgulardaki major akciğer opasitelerinin varlığı, primer akciğer kanseri veya akciğer dışı organ tümörlerine ait metastazlar ile karışabilmektedir. Biz bu raporda, her iki akciğerin üst loblarında antrakozaya bağlı olarak geliştiği saptanan major opasiteleri bulunan ve eş zamanlı kolon kanser tanısı olan bir olguyu sunduk. Kolorektal kanserli bir olguda, akciğer opasitelerinin ayırıcı tanısı, uygun literatür eşliğinde tartışıldı.

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Key Words: Komplike pnöмокonyoz, majör akciğer opasiteleri, kolon kanseri

Introduction

Coal worker's pneumoconiosis (CWP) has been recognized as an occupational disease, which develops following exposure periods, measured in decades rather than years. The appearance of large pulmonary opacities indicates the development of complicated pneumoconiosis or progressive massive fibrosis (PMF). These lesions can be as small as 1 centimeter in diameter and or may comprise the volume of a whole lobe. Interestingly, they are almost always restricted to the upper half of both lungs. Generally, there is a background of simple CWP but have been observed in miners whose initial chest radiograms were considered to be within normal limits 4 to 5 years earlier (1,2). These lesions may create some problems in

the diagnosis of pulmonary diseases like metastases and or primary lung cancer.

Case Report

A 63-year old man, former smoker was seen in our gastroenterology outpatient clinic. He was generally in good health, but complained of chest pain, dyspnea, productive cough, decreased appetite, weight loss approximately 4 kilograms within the last three months and a history of melena. He has worked as an underground coal miner approximately for 25 years. He had diagnosis of pulmonary tuberculosis at 1999 and was treated with appropriate antituberculosis drugs. On physical examination, there were bilateral ronchi and localized rales in the basal parts of right lung. Digital clubbing was not seen. In labo-

ratory, his hemogram and biochemical parameters were normal. Erythrocyte sedimentation rate was 28 mm per hour. Pulmonary function tests revealed obstructive pattern. Several occult blood test results were negative. Upper gastrointestinal system endoscopy was also normal. The chest radiograph showed bilateral fibroproliferative findings and bilateral major opacities approximately 5 cm in sizes (Figure 1). Computerized tomography (CT) of the chest showed two masses, which were in 4x5 cm sizes in the left, and right lower lobe superior segments along with fibroproliferative changes (Figure 2). The CT sections including the upper abdomen showed wall thickening belonging to the proximal part of transverse colon. The liver was normal. Colonoscopy revealed an ulcerovegetative mass in the proximal transverse colon. A colonic adenocarcinoma was diagnosed on histopathologic examination of endoscopic biopsy samples. Bronchoscopic examination was normal. Bronchoscopic biopsies and lavage were taken, but the investigations were all negative concerning tuberculosis and malignancy. Finally, a transthoracic fine needle biopsy helped in diagnosing anthracosis on histopathology (Figure 3).

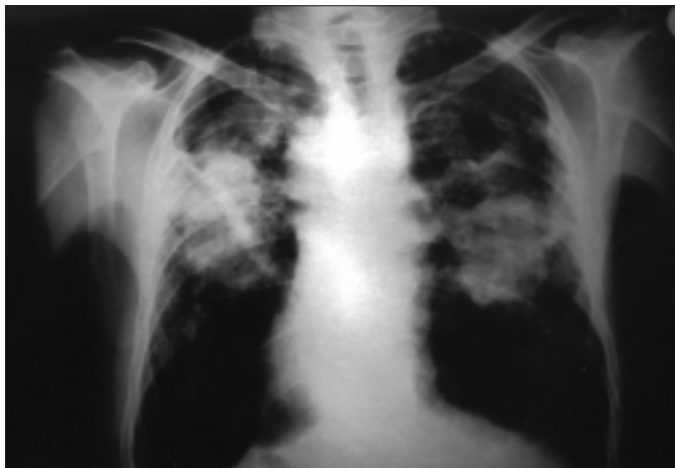


Figure 1: Chest X-ray shows bilateral lung opacities located mainly at the upper lobes.

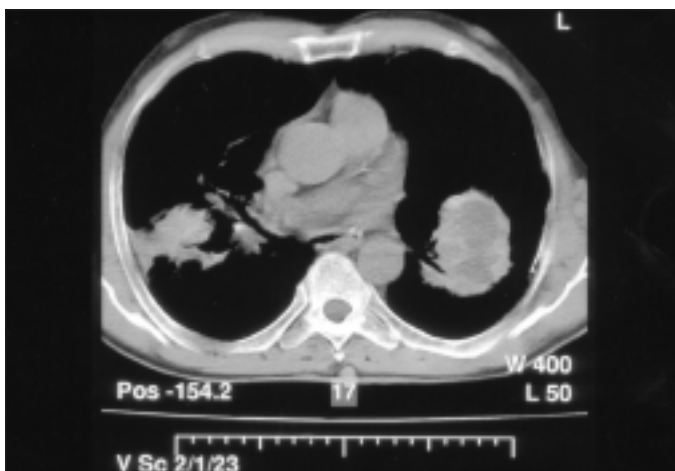


Figure 2: CT image shows bilateral huge lesions with irregular borders and central hypodensity suggesting necrosis.

Discussion

As we stated in the introduction section, the huge lesions in complicated pneumoconiosis may create serious diagnostic problems. In the present case report, our patient had two masses both on the upper parts of the lung bilaterally. He simultaneously had colon cancer, too. The differential diagnosis of pulmonary opacities in this case included complicated pneumoconiosis, metastases from colonic tumor and primary lung cancer.

Complicated pneumoconiosis may cause huge opacities. They usually develop on a background of simple pneumoconiosis, but this is not the rule. Characteristically, they start near the periphery of the lung and manifest as a mass with a smooth, well defined lateral border that parallels the rib cage and projects 1 to 3 cm from it. The medial margin of the mass is often ill defined in contrast to lateral border. This gives us a clue in differentiation from pulmonary lung carcinoma, whose borders tend to be less well defined and whose configuration is typically spherical (1,2). However, these findings can not rule out the other possibilities such as metastases. In our case, the lateral borders of the both huge opacities were irregular, especially in the right one. In the left lesion, there were central hypodensity consistent with necrosis suggesting malignancy.

It is well known that the lung is a common metastatic site of body cancers. Approximately 30 percent of patients with malignant disease will, at some point in the natural history of the disease, develop pulmonary metastases. Most pulmonary metastases are discovered by routine chest radiograph either as a synchronous event with a primary tumor or as a metachronous event in a routine follow-up examination. They are most commonly bilateral, well defined with smooth edges, and located primarily in the periphery of lower lobes. It is established in different studies that silica and asbest fibers cause digestive system cancers such as stomach and colon cancers (3-5). Nevertheless, there is no data that CWP causes digestive system cancers, especially colon cancer. Howe-

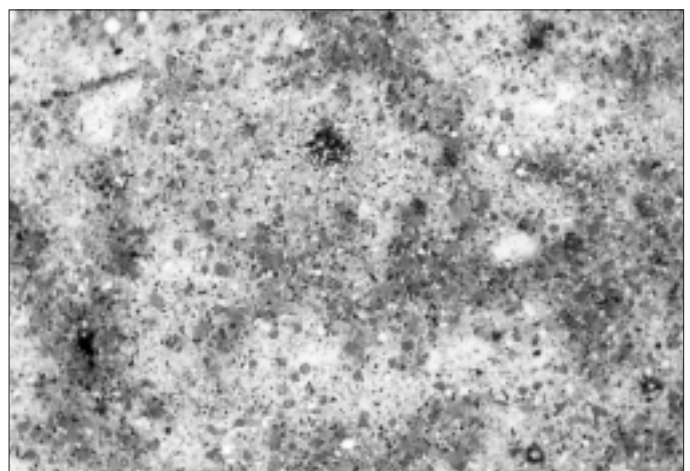


Figure 3: The histopathologic examination depicts the black brown carbon particles in the macrophages (H&E, X40).

ver, there are some case reports that colon cancer and lung cancer may be found synchronously (6). In our case, we detected colon cancer and also thought the possibility of metastases from colon to the lung hematogenously. Colorectal cancer exhibit clinical evidence of hematogenous spread when initially seen, and half eventually develops metastases to a distinct site, usually the liver. Distant spread to lungs may be silent until very advanced and if there is no rectal involvement it occurs after liver metastases as a classical rule. In the present case, we did not detect any metastatic lesion in the liver. Additionally, the lesions were located at the upper parts of the lung, in which metastatic lesions are generally seen in the lower lobes. Concerning these findings, we mainly ruled out the metastases from colon clinically.

Major opacities in complicated pneumoconiosis may also cause suspicion of primary lung cancer. There were some obvious reasons to think lung malignancy in our case, as the patient was previously a heavy smoker, an elderly person with a diagnosis of chronic obstructive pulmonary disease, in which lung cancer risk is naturally increased. A primary lung cancer originating from scar lesions in the setting of complicated pneumoconiosis may be synchronously found together with colon cancer. In this case, it is important to compare the past chest x-rays and recent ones to detect new lesions or any change in the sizes of old lesions. However, this was not possible in the present case, since we could not obtain his past chest x-rays. Finally, we performed bronchoscopy, which was completely normal. Consequently; transthoracic needle aspiration biopsy from the major opacities revealed diagnosis of anthracosis on histopathologic examination.

In conclusion, complicated coal worker's pneumoconiosis can create major diagnostic difficulties in any patient with pulmonary or extra-pulmonary cancers. However, the past history of occupational exposure to dust and previous chest x-rays can provide some clues for clinical approach to these patients. In most of the cases, the handling physician is compelled to do bronchoscopy and transthoracic biopsy examinations to be certain about the diagnosis.

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