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Case report

Aspergilloma in a Pulmonary Abscess – The First Manifestation of Malignant Bronchial Obstruction

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A B S T R A C T

We report a case of aspergilloma in a pulmonary abscess being the first manifestation of malignant bronchial obstruction. In our case, only the autopsy revealed that planocellular carcinoma was the real cause of aspergilloma. Malignant bronchial obstruction finally resulted in pulmonary abscess with secondary fungal colonization. The co-existence of these pathologies is uncommon, and the situation we report is extremely rare. Even in cases when there are no radiological, bronchoscopical or cytological signs of malignancy, as in our case, careful observation of these patients is necessary. Surgical approach should be considered whenever possible.

Key words: *aspergilloma, pulmonary abscess, malignant bronchial obstruction, carcinoma*

Introduction

Pulmonary aspergilloma is a morphological pattern of fungal infection (fungal ball) in patients with pre-existing pulmonary cavities caused by various pulmonary diseases. The most common among those diseases are: tuberculosis, bronchiectasiae, pulmonary abscesses, cysts and malignant tumors[1,2].

There are various species of *Aspergillus* pathogenic for humans, but the most common is *Aspergillus fumigatus*[1,2]. The main predisposing factors for pulmonary aspergillosis are: cytostatic and radio therapy, imunosupressants, corticosteroids, AIDS, wide spectrum antibiotics, metabolic diseases, diabetes mellitus and chronic alcoholism[1,2,3].

Pulmonary abscess is a purulent inflammation, leading to destruction of pulmonary parenchyma and forming a cavity filled with pus[4]. The most common causes of pulmonary abscess are: aspiration from nasopharynx, mouth or stomach, bronchiectasiae, pulmonary embolism with the secondary infection, thrombophlebitis and immunodeficiency. Malignant bronchial obstruction can lead to accumulation of mucus, secondary bacterial pneumonia and finally pulmonary abscess.

We present a case of aspergilloma in a pulmonary abscess being the first manifestation of malignant bronchial obstruction.

Case Report

A 69-year-old male patient presented with persistent subfebrility, productive cough and hemoptyses. For the last 17 years he had diabetes mellitus, and for many years varicous veins on both legs. He's been smoking 20 cigarettes a day for the last 40 years. Complete laboratory workup, except faster sedimentation and moderate leukocytosis, was normal.

Based on the chest x-ray, the suspicion of pulmonary abscess was raised, but differential diagnosis included tuberculous cavern and cavitated malignant tumor, which were both excluded clinically. Antibiotic treatment for pulmonary abscess was started, but without any im-

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provement. Repeated bronchoscopy and cytological findings were negative for malignancy. Microbiology workup revealed mixed bacterial flora, *Aspergillus fumigatus* and *Candida albicans*. Since the patient refused surgical treatment, he was put on antibiotic and antimycotic therapy based on the antibiogram. On the next radiological control examination (18 months after the onset of the disease), the chest x-ray revealed abscess cavity with amorphous shadow inside (Figure 1), which raised the suspicion of aspergilloma. The diagnosis was confirmed by thorax CT (Figure 2).

Later on, his condition was complicated with liquidopneumothorax, which set up the vital indication for surgery. During the surgery his cardiopulmonary function worsened, and he died from cardiac arest.

The autopsy confirmed the diagnosis of aspergilloma in the abscess, but also revealed planocellular carcinoma in the bronchial lumen communicating with the abscess.

Discussion and Conclusion

In our case, only the autopsy revealed that planocellular carcinoma was the real cause of aspergilloma. Malignant bronchial obstruction finally resulted in pulmonary abscess with secondary fungal colonization. The co-existence of these pathologies is uncommon[5]. Though a few cases of aspergilloma within cavitating pulmonary carcinomas[2] and pulmonary carcinoma arising from pre-formed lung scars, for example surrounding a post-tuberculous cavern that contained an aspergilloma[6], have been described, the situation we report is extremely rare[7].

Even in cases when there are no radiological, bronchoscopical or cytological signs of malignancy, careful observation of these patients is necessary[8,9]. Surgical approach should be considered whenever possible.

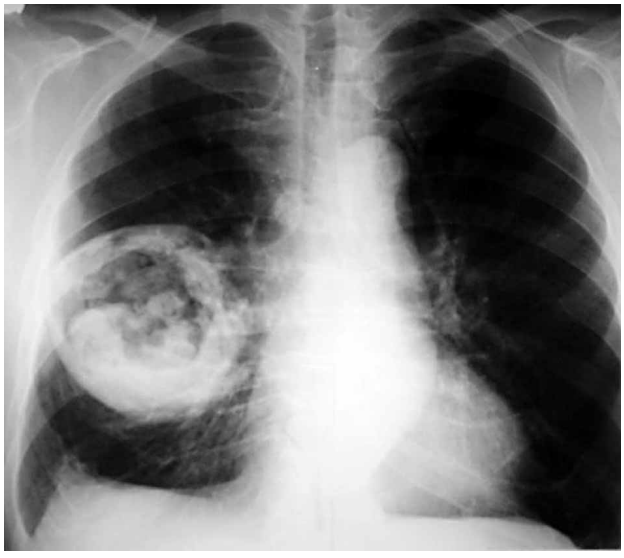

Fig. 1. Control chest x-ray showing abscess cavity with amorphous shadow inside.

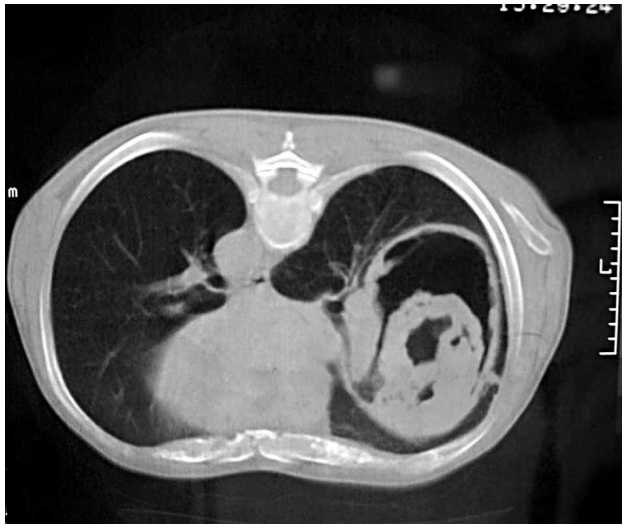

Fig. 2. Thorax CT showing abscess cavity (15x10x9 cm), filled with mobile amorphous hyperdens mass (pathognomonic for aspergilloma).

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ASPERGILOM U PLUĆNOM APSCESU – PRVA MANIFESTACIJA MALIGNE OPSTRUKCIJE BRONHA

S A Ž E T A K

Prikazan je slučaj aspergiloma u plućnom apscesu, kao prva manifestacija maligne opstrukcije bronha. U našem slučaju tek je na obdukciji otkriven pločasti karcinom kao stvarni uzrok aspergiloma. Maligna opstrukcija bronha konačno je rezultirala plućnim apscesom sa sekundarnom gljivičnom kolonizacijom. Istovremeno postojanje ovih patoloških promjena nije često, a situacija koju mi prikazujemo je iznimno rijetka. Čak i u slučajevima kada nema radioloških, bronhoskopskih i citoloških znakova maligne bolesti, kao u našem slučaju, pažljivo praćenje takvih pacijenata je nužno. Kirurški tretman treba razmotriti uvijek kada je moguće.