SAYI 1
CILT 2

PULMONARY SYNCHRONOUS ASPERGILLOMA AND SQUAMOUS CELL CARCINOMA: CURATIVE APPROACH AT THE SAME OPERATION, CASE REPORT

SENKRON PULMONER ASPERGİLLOMA VE SKUAMÖZ HÜCRELİ KARSİNOMU'NA TEK OPERASYONDA KÜRATİF YAKLAŞIM: OLGU SUNUMU

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ABSTRACT

Aspergilloma is caused by the aspergillus-colonization of lung cavities . In the case report we shared a cigarette and alcohol addict patient with tuberculosis history. A cavity -in concordance with aspergilloma- on upper lobe and a nodular lesion on lower lobe of the right lung was detected. An operation was planned. The nodule was defined as squamous cell lung carcinoma. Right lung upper lobectomy, for the aspergilloma, and lower lobe superior segmentectomy with mediastinal lymph node dissection, for the malignity, were performed. Patient discharged without any problem. No additional therapy was required. In the literature, we encountered only 14 cases with normal immunity that aspergilloma and squamous cell lung carcinoma were diagnosed synchronously. We believe it will make a significant contribution to the literature, because we encountered with no complication or recurrence during the one-year follow-up of the curative treatment performed with a single surgery under such a rare condition.

Key Words: Lung cancer, aspergilloma, lobectomy, segmentectomy

ÖZET

Aspergilloma, akciğerlerdeki kavitelerin aspergillus kolonizasyonuyla oluşur. Olgu sunumumuzda; sigara ve alkol bağımlısı, tüberküloz öyküsü olan hastayı paylaştık. Sağ akciğer üst lobda aspergilloma ile uyumlu kavite ve alt lobda nodüler lezyon saptanması üzerine operasyona karar verildi. Nodülün skuamöz hücreli akciğer kanseri olduğu tanımlandı. Aspergilloma için sağ akciğer üst lobektomi, malignite için alt lob superior segmentektomi ve mediastinal lenf nodu disseksiyonu uygulandı. Hasta sorunsuz taburcu edildi. Ek tedaviye ihtiyaç duyulmadı. Literatürde aspergilloma ve skuamöz hücreli akciğer karsinomunun senkron olarak izlendiği, bağışıklığı normal olan yalnızca 14 olguya rastladık. Böylesine nadir bir durumda, tek ameliyatla yaptığımız küratif tedavinin bir yıllık takibinde, komplikasyon ya da nüksle karşılaşmamış olmamızın literatür bilgisine önemli katkı sağlayacağına inanmaktayız.

Anahtar Kelimeler: Akciğer kanseri, aspergilloma, lobektomi, segmentektomi

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Introduction

Aspergillus is the most common fungal infection. To date more than 200 aspergillus species had been defined, but only a few are pathogen. Infection of aspergillus (aspergillosis), is caused by colonization of fungal spores into respiratory tract after inspiration (1). This colonization goes to fungal infection, especially in patients with immune suppression and chronic lung disease. Infection is rarely observed in patients with no immune supression.

Aspergilloma (fungus ball) is the most common form of aspergillus infection (2).

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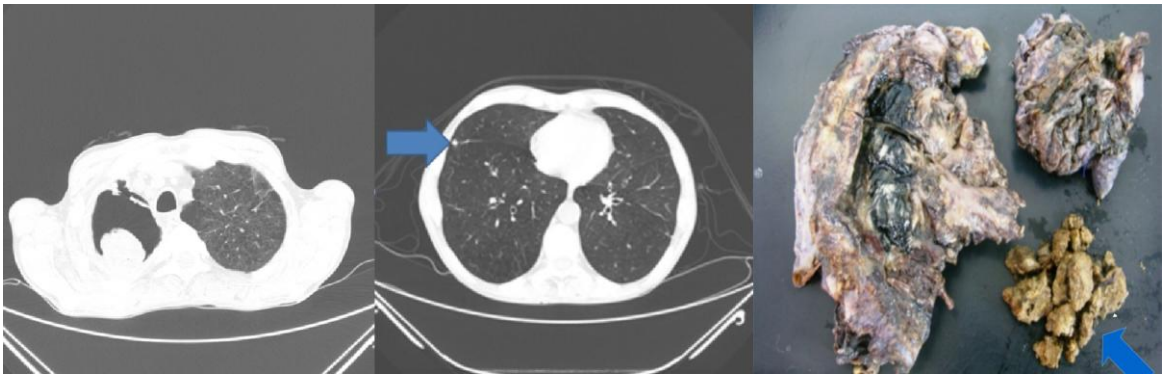
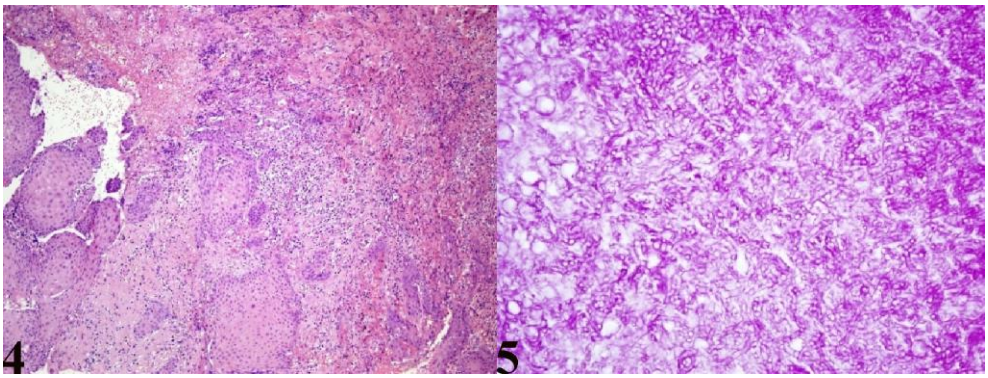
Aspergilloma is caused by colonisation of aspergillus in the cavitary lesions of lung caused by previous diseases, such as malignancy, tuberculosis or sarcoidosis. The fungus ball is formed by hyphea, fibrin, mucous and cellular debris. The most common symptom is hemoptysis caused by invasion of parenchyma and vasculature with infection. The therapeutic approach in these patients is surgery (3).Coincidence of aspergillosis with solid tumors such as lung carcinoma is not common. When the current literature scanned for aspergillosis and lung carcinoma, 37 cases described were reached and only 24 of these showed aspergilloma. Among these aspergilloma and squamous cell carcinoma is observed in 14 cases (4). Our rare case with normal immune system diagnosed as aspergilloma and lung cancer is defined in this case report in the light of literature after the informed consent was signed by the patient.

Case Report

A 50 year old man, who had been using cigarette 105 pack/year were under alcohol dependence therapy in the psychiatry clinic was consultated by thoracic surgery department with hemoptysis symptom. He had been suffering from cough, sputum extraction, weakness and weight loss. In chest X-ray graphy, there was a suspicious lesion in the right upper zone. He had a tuberculosis history 15 years ago. Thoracic computerized tomography (CT) showed a cavitary lesion in the right upper zone including a 4.5x 3.5 cm lesion that seems to be aspergilloma (fig 1). Fungal hyphea compatible by aspergilloma was observed in bronkoalveolar lavage at fiber optic bronchoscopy. Klebsiella pneumonia was observed in microbiological culture from sputum and then antibiotherapy with sulbactam ampicillin was given for seven days. No antifungal therapy was given because duplicate galactomannan antigene test from the sputum was negative. No clinical improvement was observed. The operation was planned with suspicious diagnosis of aspergilloma by symptoms of hemopthyis and previous tuberculosis history.



Resim 1: The aspergilloma in thorax CT. **2:** Right lung lower lobe superior segment nodule in thorax CT (arrow). **3:** The fungus ball of the macroscopical specimen (arrow).



Resim 4: Squamous cell carcinoma in H&E slide, x100. **5:** Periodic acid-Schiif staining: Fungal elements (Aspergillus), x400.

The current contrasted CT before operation showed a second nodular mass in the superior segment of the right lower lobe of the lung besides the cavitary lesion in the right upper zone (fig 2). This lesion was not observed in the previous computerized tomography that was taken three months before. This lesion was thought to be caused by infection by radiological department. The fact that the patient suffered from an aggressive disease such as aspergilloma and that this nodule emerged in a short time as three months suggested that this lesion depended on a radiologically infectious process. Taking a PET/CT was not deemed necessary pre-operatively as the lesion detected in the thoracic CT was under below 10 mm.In the surgical operation, thorax was reached through the 5th intercostal space by right posterolateral thoracotomy. First, we excised the lower lobe nodule by wedge resection. Peroperative pathology consultation with frozen section for the nodule was informed us that the nodule was a lung originated malignancy. Right lung upper lobectomy, for the aspergilloma, and lower lobe superior segmentectomy, for the malignity, were performed. Therefore, we included the mediastinal lymph node dissection in our surgical procedure in accordance with the cancer surgery principles. Among mediastinal lymph nodes, the lymph node stations 2, 4, 7, 8 and 9 were removed. Moreover

the intraparenchymal nodes (station 10, 11 and 12) were dissected. The segmental lymph node 13 was removed on the resected parenchymal segment. Intra-operatively, frozen/section procedure was not performed on the lymph nodes because of none of the lymph nodes were over 10 mm in the thorax CT. After the ending of operation, the case was followed in IFU for a day. Then he was followed for 10 days in our inpatient services. After that he was discharged with no problem.

In the histopathology report, the upper lobe lesion was reported to be an aspergilloma and squamous cell carcinoma was observed in the lower lobe superior segment as two nodules in 10 mm and 5 mm dimensions (fig 3, 4, 5). No tumor invasion or infiltration was observed in lung paranchme, mediastinal lymph nodes, and pleura, vascular, bronchial surgical margins. No Florodeoxyglicose (FDG) uptake was observed in mediastinal lymph nodes or extrapulmonary sites after operational position emission tomography (PET-CT).

Since PET-CT has limited value to evaluate brain metastasis, magnetic resonance imaging (MRI) was performed for brain metastasis control and no metastasis was observed. The case was considered as T3N0M0 and stage 2a. No additive antifungal therapy was given to the patient because of the complete resection of aspergilloma and adjuvant chemotherapy treatment was given to the patient for squamous cell carcinoma. The patient is under follow up with no recurrences or nor problem at one year.

Discussion

Aspergilloma that is observed in the previous cavities of the lung is the most common form of aspergillosis (1). It is mostly seen in the cavities of tuberculosis. Patients with classical pulmonary tuberculosis who are left with cavities of ≥2 cm have an approximately 20 percent chance of subsequently developing aspergillomas and/or chronic pulmonary aspergillosis (5).The 15 years previous history of tuberculosis helped us to consider aspergilloma in our patient.

Air crescent sign in thorax computerized tomography is pathognomonic (2). This sign in the right lung upper lobe and observation of aspergillus like hyphea in fiberoptic broncoscopy were diagnostic for this case.

The preoperative diagnosis of aspergilloma has given us some advantages. A huge infectious control was applied in both operation room and intensive care unit. It was possible to make a plan of operation.

Hemoptysis is one of the common signs of aspergilloma. Although aspergilloma does not invade surrounding parenchyma and vasculature in general, some rare cases might occur. In these cases, hemoptysis might be life threatening and it is the most common reason of death. Because of this risk, the curative management of aspergilloma cases with hemoptysis is surgical approach. Although hemoptysis is the main reason of planning surgery, surgery is thought to be indicative for patients with good respiratory reserve and good clinical potential before any mortal complication occurred (6).

Lobectomy is the common surgery method in aspergilloma in 58 % (7). But resection might be only wedge resection or even pneumonectomy according to the size of the lesion. In our case aspergilloma occupied major part of the lobe but did not across lober margins; then only lobectomy was performed.

In our case the new lesions in the right lower lobe superior segments that were observed during the control computerized tomography of the thorax for the follow up of the aspergilloma before operation; were thought to be infection. We thought lung cancer in the differential diagnosis by the history of three packages per day smoking for 35 years. Even if cancer, it would be an early stage, this second lesion was resected to avoid pneumonectomy. In the early stage lung carcinoma, survival rates do not differ among lobectomy versus segmentectomy cases (8). Besides, our case underwent right upper lobectomy due to aspergilloma and another lobectomy would result with pneumonectomy together. It is known that especially right pneumonectomy rather than other resections is a surgical method with higher morbidity and mortality (9). As a result, if we consider the situation according to this patient, the performed segmentectomy is thought to supply better benefits to the patient in the point of view of survival, morbidity and mortality.

The prediagnosis of cancer in this patient gave us the opportunity to study the case by frozen section interoperational urgent diagnostic procedure. The cancer diagnosis during frozen section caused mediastinal lymph node dissection possible. By this procedure it was possible to get N status knowledge of the tumor for staging. Mediastinal lymph node dissection has some probable complications such as hemorrhage and it is not indicated without tissue diagnosis of cancer (10).

Aspergillosis and cancer synchronous occurrence as seen in our case is a rare condition. When we examined the literature there exists only 37 cases defined as synchronous aspergillosis and lung carcinoma with normal immune status. In a major part of these cases, colonization of the fungus was observed and only 24 cases showed aspergilloma. Among these aspergilloma and squamous cell carcinoma is observed in 14 cases (4). The survival analysis of these cases is not possible because of rare occurrence.

In conclusion, aspergilloma must be considered in cases with tuberculosis history, cavitary lesions including crescent sign in thoracic radiology. Broncoscopy must be performed even if malignancy is not thought. Lung carcinoma must not be forgotten if smoking history exists in elder patients. Radiologic assessment will better be repeated just before operation, and surgery is better applied before complications such as hemopthysis. In such cases with two serious diseases, the most effective surgical procedure which will protect the respiratory reserve must be chosen than the method will supply a qualified life with longer survival. We believe it will make a significant contribution to the literature that we did not encountered with any complication or recurrence during the one-year follow-up of the curative treatment performed with a single surgery under such a rare condition. We might conclude that our therapeutic approach is effective.

Kaynakça ve Notlar

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