J Surg Med. 2018;2(3):410-412.
DOI: 10.28982/josam.438745

Journal of Surgery and Medicine
e-ISSN: 2602-2079

A rare form of the lung cancer: Mucoepidermoid carcinoma: A case report

Akciğer kanserinin nadir bir formu: Mukopepidermoid karsinom: Olgu sunumu

Göktan Temiz [1], Özgür Ömer Yıldız [2], Ömer Cenap Gülyüz [3], Nurettin Karaoğlanoğlu [4]

[1] Department of Thoracic Surgery, Adana City Education and Research Hospital, Adana, Turkey
[2] Department of Thoracic Surgery, Yildirim Beyazit University, Yenimahalle Education and Research Hospital, Ankara, Turkey
[3] Department of Thoracic Surgery, Adiyaman University Education and Research Hospital, Adiyaman, Turkey
[4] Department of Thoracic Surgery, Yildirim Beyazit University, Faculty of Medicine, Ankara, Turkey

ORCID ID of the authors:
GT: 0000-0002-8025-5315
ÖÖY: 0000-0001-8995-5644
ÖCG: 0000-0001-8528-5567
NK: 0000-0003-2827-6044

Corresponding author / Sorumlu yazar:
Özgür Ömer Yıldız
Address / Adres: Yıldırım Beyazıt Üniversitesi, Yenimahalle Eğitim ve Araştırma Hastanesi, Göğüs Cerrahisi Anabilim Dalı, Ankara, Türkiye
e-Mail: dr.ooyildiz@gmail.com

Informed Consent: The author stated that the written consent was obtained from the patient presented in the study.
Hasta Onamı: Yazar çalışmada sunulan hastadan yazılı onam alındığını ifade etmiştir.

Conflict of Interest: No conflict of interest was declared by the authors.
Çıkar Çatışması: Yazarlar çıkar çatışması bildirmemişlerdir.

Financial Disclosure: The authors declared that this study has received no financial support.
Finansal Destek: Yazarlar bu çalışma için finansal destek almadıklarını beyan etmişlerdir.

Received / Geliş tarihi: 29.06.2018
Accepted / Kabul tarihi: 28.08.2018
Published / Yayın tarihi: 28.08.2018

Abstract
Mucoepidermoid carcinoma (MEC) of the lung is a rare form of lung cancer that is classified into low grade and high grade based on histological features. For Mucoepidermoid Carcinoma of the Lung, surgery is the most commonly used and most effective form of treatment. Surgical resection is the primary treatment for low-grade MEC with excellent outcomes but high-grade MEC is a more aggressive form of this malignancy.
Keywords: Lung cancer, Mucoepidermoid carcinoma

Öz
Akciğerin mukoepidermoid karsinomu (MEC), histolojik özelliklerine göre düşük ve yüksek gradeli olarak sınıflandırılan nadir bir akciğer kanseri türüdür. Akciğerdeki Mukoepidermoid Karsinom için cerrahi en sık kullanılan ve en etkili tedavi şeklidir. Cerrahi rezeksiyon, mükemmel sonuçlara sahip düşük dereceli MEC için birincil tedavidir, ancak yüksek gradeli MEC bu malignitenin daha agresif bir şeklidir.
Anahtar kelimeler: Akciğer kanseri, Mukoepidermoid karsinom

Introduction

Mucoepidermoid carcinoma (MEC) is a rare tumor of the lung that accounts for 0.1 to 0.2% of all pulmonary tumors [1]. Mucoepidermoid carcinoma of the salivary gland is relatively common but mucoepidermoid carcinoma arising from the mucous glands of the bronchus is rare. Mucoepidermoid carcinoma of the bronchus occurs in patients with a wide age range from 3 to 78 years [1]. Bronchial mucoepidermoid carcinoma usually presents as an intraluminal mass producing luminal occlusion. The symptoms displayed are caused due to irritation and/or obstruction of the trachea and airways. The tumors are usually well differentiated and contain a combination of mucus-secreting, squamous, and intermediate cells. The prognosis of localized low-grade disease is excellent but in high-grade tumors, metastasis to adrenal glands, liver, brain, and bone is indicative of a poor prognosis. Here we report a MEC case located in middle lobe of the right lung.

Case presentation

A 63-year-old man was admitted to our hospital for routine physical examination. He was asymptomatic. The mass of the lung encountered on routine chest X-ray. Chest radiography revealed a mass shadow measuring 30 mm in diameter in the middle lobe of the lung field, and chest computed tomography (CT) showed a lobulated mass shadow measuring 30 mm in diameter in the middle lobe (Figure 1, 2).

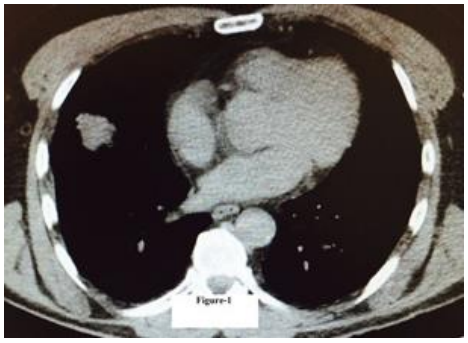

Figure 1: Post contrast axial computed tomography image shows a lesion in the middle lobe of right lung

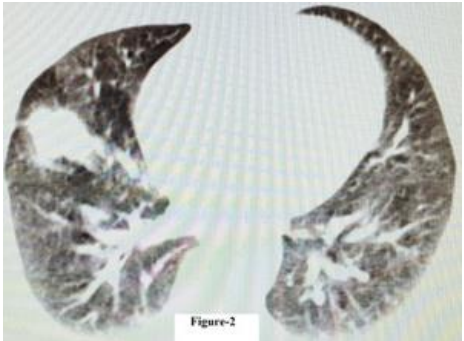

Figure 2: Computed tomography revealing the mass in the middle lobe of the right lung

How to cite / Atıf için: Temiz G, Yıldız ÖÖ, Gülyüz ÖC, Karaoğlanoğlu N. A rare form of the lung cancer: Mucoepidermoid carcinoma: A case report. J Surg Med. 2018;2(3):410-412.

No mediastinal lymph node metastasis or other organ metastases were observed on positron emission tomography (PET) scan. The patient had smoking history. Blood tests showed no abnormal tumor markers. His past was unremarkable with no history of tuberculosis, recurrent respiratory infections. Flexible bronchoscopy was performed for further evaluation of this mass. Bronchoscopy revealed normal airways. Transthoracic needle biopsy was done to evaluate middle lobe mass. Biopsy result of the mass was reported as mucoepidermoid carcinoma. The patient underwent a thoracotomy with middle lobectomy and mediastinal lymph node dissection. Diameter of resected tumor's size was approximately 3 cm. Histologically, tumor is comprised of a mixture of different cell types including mucin-secreting glandular cells, squamous cells, and intermediate cells with cytological atypia and necrosis. Sections from the tumor were stained with hematoxylin and eosin (Figure 3a). The mucus-secreting cells are demonstrated by staining with mucicarmine (Figure 3b). Immunohistochemical staining for p63 and TTF-1 showed positive (Figure 3c, 3d). Histopathological examination of the tissue reported the diagnosis as high-grade MEC. All resection margins were negative for tumor involvement, and the lymph nodes were free of metastatic disease. There was not any complication during the operation period. He recovered well post- surgery. The patient did not require any chemotherapy or radiotherapy post-operatively and remained well after the operation. He has been scheduled for a surveillance CT scan.

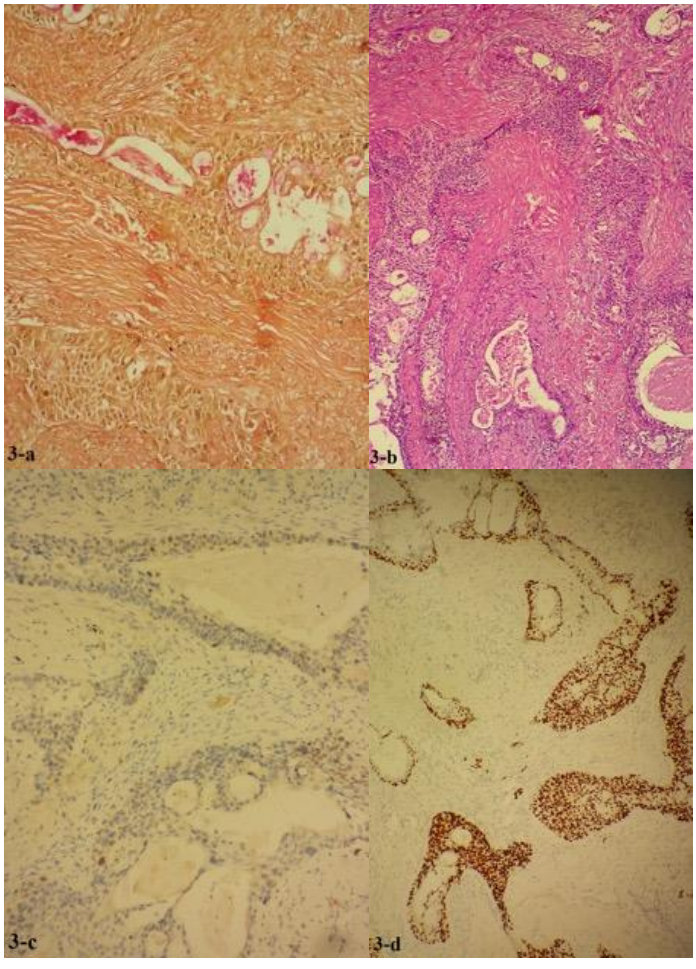

Figure 3: a) Haematoxylene & Eosin X100 b) Mucicarmine X100 c) TTF1 X100 d) P63 X100

Discussion

MEC is a tumor characterized by a combination of mucus-secreting, squamous, and intermediate cell types. It is a recognized form of malignancy arising from the salivary glands; however, it can present as a primary lung cancer. The estimated frequency of MEC is 0.1% to 0.2% of all primary lung tumors [1]. The age range reported extends from 3 to 78 years with equal sex distribution [1-3]. Our case was old aged, male and had similar histological findings. It presents as an endobronchial exophytic mass that can be either sessile and broad-based or pedunculated with a well-formed stalk [2]. The size of the tumor varies from several millimeters to up to 6 cm in diameter [2]. It is usually located in the lumen of a main, lobar, or segmental bronchus [3]. In our case, there was not observed any endobronchial lesion in the tracheobronchial tree. Diameter of the mass was about 3 cm. Histologically, it is classified as high grade or low grade. The high-grade features include necrosis, nuclear pleomorphism, and active mitosis. The low-grade tumors are usually confined to the bronchus and lack those histologic features associated with high-grade tumors [3]. Our case was reported as low-grade tumor. The presenting symptoms include cough, hemoptysis, and wheezing. MEC can be an incidental finding, with no clinical symptoms in up to 25% of patients [5]. In our case, the mass was detected incidentally on routine physical examination. The chest x-ray may show evidence of pneumonia or atelectasis. Other radiologic findings include a solitary lung nodule or mass [4]. The findings on chest CT scan include a well-defined endobronchial mass, with or without obstructive pneumonia or atelectasis [6]. In our case, chest CT showed a lobulated mass shadow measuring 30 mm in diameter in the middle lobe. A definitive diagnosis of MEC requires bronchoscopic or transthoracic adequate biopsy [2]. In most cases, MEC is diagnosed at an early stage with low-grade features. Surgical resection is usually curative and this carries an excellent prognosis [5]. In contrast, high-grade tumors show a poor prognosis with an estimated 5-year survival of 31% [5]. In our case, there was no endobronchial lesion, so transthoracic biopsy was performed for diagnosis. The possibility of secondary MEC to a primary salivary tumor should be ruled out. The approach ranges from simple clinical examination of the head and neck to advanced imaging studies such as 2-(18F)-fluoro-2-deoxy-D-glucose positron emission tomography scan [7]. On positron emission tomography, any secondary tumor findings were not detected in our case. In conclusion, Mucoepidermoid tumors have to be treated by radical surgery with lymph node sampling and dissection. Patients with low grade tumors can be expected to be cured following complete resection. Careful histological typing plays a key role in prediction of late results, and further studies are needed.

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