Case Report

# Case report of the bronchioloalveolar carcinoma

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**Abstract** Bronchioloalveolar carcinoma is a form of adenocarcinoma. Its clinical presentation spans the entire spectrum from asymptomatic solitary pulmonary nodule to full presentation with cough, hemoptysis and dyspnea. Clinical symptoms usually are in correlation with the extent of disease. The case we present here is a patient in late stage of disease with few symptoms regarding to the extent of disease involvement.

**Key Words:** Adenocarcinoma, bronchioloalveolar carcinoma, lung cancer

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**Received:** 22.06.2013, **Accepted:** 20.11.2013

## INTRODUCTION

The term lung cancer is used for tumors arising from the respiratory epithelium. According to the World Health Organization classification, epithelial lung cancer consist of four major cell types: small cell lung cancer and non-small cell lung cancer histologies including adenocarcinoma, squamous cell and large cell carcinoma.[1] Adenocarcinomas often occur in more peripheral lung locations and may be associated with a history of smoking. Adenocarcinomas are the most common type of lung cancer occurring in never smokers. Bronchioloalveolar carcinoma (BAC) is a subtype of adenocarcinoma. BAC may present in a mucinous form which tends to be multicentric and a non-mucinous form, which tends to be solitary.[1] We report a case of BAC whit atypical presentation regarding to its extension in a 53-year-old women.

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| Quick Response Code: | Website: www.advbiores.net |
| | DOI: 10.4103/2277-9175.150424 |

## CASE REPORT

This was a case report of a 53-year-old woman who admitted in Al-Zahra Hospital due to chest X-ray abnormality founded during evaluation of weight loss and headache [Figure 1].

There was no history of dyspnea, chills or fever. She just mentioned productive cough since about 6 months ago. History taking revealed neither inhalation exposure nor hemoptysis. Weight loss was about 15 kg during recent 3 months.

Headache was in frontal region almost every day lasting about 30 min without any accompanying symptom. It has begun about 6 months ago.

At admission time vital sign was as below: Blood pressure = 110/75, pulse rate = 80, respiratory rate = 22, $t$ = 37.1.

Pulse oximetry showed an oxygen saturation of 92% in room air.

In physical examination, all exams including lung were in normal range.

Blood sampling was done and results of some laboratory tests are shown below:



**How to cite this article:** Emami M, Kalantari E. Case report of the bronchioloalveolar carcinoma. Adv Biomed Res 2015;4:30.

White blood cells = 8600, hemoglobin = 16.7, platelets =, aspartate aminotransferase = 52, alanine aminotransferase = 60, alkaline phosphatase = 220, lactate dehydrogenase = 521, calcium = 9.3, *P* = 4.1, albumin = 3.9, C-reactive protein = negative.

According to chest X-ray finding a lung scan computed tomography (CT) was done [Figures 2 and 3].

It showed multiple bilateral nodular lesions. There was not any hilar or mediastinal or lymphadenopathy. However a hypodense lesion in right liver lobe was seen.

Regarding to findings in lung CT scan metastasis was suggested. Evaluation of patient to find a malignant solid organ primary tumor was begun. Especially, those originating from thyroid, breast, placenta, vagin and skin.

Thyroid examination was normal in palpation but an ultrasonography was done. It showed a hypoechoic nodule containing solid component 6 × 5 in diameter and a cystic lesion 1 × 2 in diameter in right thyroid lobe. Furthermore a cystic lesion 2 × 3 mm in diameter with calcification in its posterior wall was seen. Besides there was a lymph node with benign feature 2 mm in short axis in left jugular chain lymph nodes.

Fna biopsy of nodule performed, but no diagnosis was suggested as there was no epithelial cell in sample.

We continue evaluation by ultrasonography of abdomen. There was no evidence of metastasis in sonography.

Mammography was done that was normal.

Vaginal examination was normal done by a gynecologist. transvaginal sonography requested. Uterin was normal in shape, but smaller than normal for her age, with endometrial thickness of 1.5 mm. There was a hypoecho region with diameter of 10 mm in posterior wall of uterus suggestive of a subserosal myoma. Both ovaries were compatible in shape, size and echo with age and there was no free fluid in pelvic cavity.

Abdominopelvic CT scan with contrast was done. It showed a hypodense lesion adjacent to portal vein and suspicious polypoid lesion in hepatic flexure of transverse colon. There was no paraaortic lymphadenopathy. There was numerous pulmonary nodules some of them containing bronchiols and vessels not common feature of metastasis.

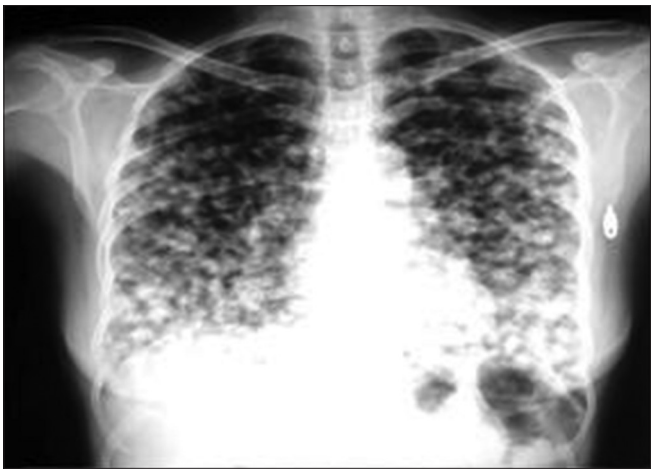

**Figure 1:** Posteroanterior chest X-ray

**Figure 2:** Coronal chest computed tomography-scan showing multiple bilateral nodular lesions

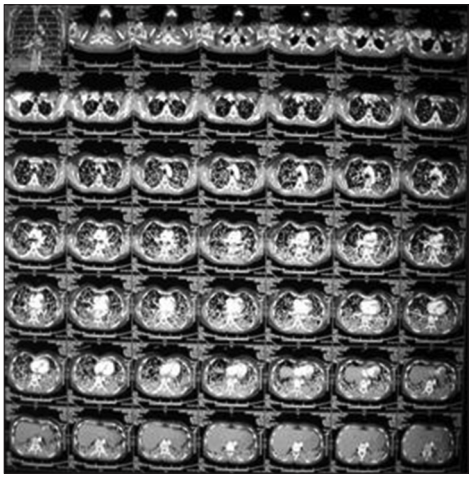

**Figure 3:** Axia chest computed tomography-scan showing multiple bilateral nodular lesions

According to what reported in abdominal CT scan a colonoscopy performed. It was normal. Because of nodule feature in CT scan finally a CT guided biopsy of pulmonary nodule was done. Pathological

report was BAC according to immunohistochemical staining.

## DISCUSSION

BAC is a subtype of adenocarcinoma that grows along the alveoli without invasion and can present radiographically as a single mass, as a diffuse multinodular lesion, as a fluffy infiltrate and on screening CT scan as a ground-glass opacity.[1] BAC has sometimes been the "mystery" lung cancer, less is known about this type of cancer than other non-small cell lung cancers.[2]

Standards for staging and treatment of BAC currently are similar to those for other forms of non-small cell lung cancers. Increased frequency of epidermal growth factor receptor (EGFR) abnormalities in BAC has increased importance of BAC because of potential role for small molecule EGFR inhibitors in this setting.

Over last decades, incidence of adenocarcinoma has steadily increased and now represents approximately 46% of lung cancers.[3] The incidence of the BAC subset is uncertain.in the united states it varied from 24% in one series[3] to < 5% in a large series based upon the surveillance, epidemiology and end results data base.

BAC can appear initially as a solitary peripheral nodule, or lobar consolidation. Multiple pulmonary nodules are another forms of it. Extent of disease involvement is usually reflected by clinical symptoms of patient. Those with a solitary peripheral nodule are often asymptomatic.[4] On the other hand, common symptoms in those with more extensive tumors include cough, shortness of breath, hemoptysis, weight loss and fever.[5] Besides, two symptoms that are uncommon but potentially life-threatening can occur in these patients, bronchorrhea and hypoxemia. Bronchorrhea can be life-threatening by impairing respiratory function and electrolyte imbalance because of large amount of fluid loss in a debilitated patient.

Hypoxemia is to somehow the result of shunt phenomenon. Tumor involves air spaces and can prevent aeration, whereas blood flow continues throw the involved area. So intrapulmonary shunt may result in severe hypoxemia.

It is of interest that the patient presented in this article had neither hypoxemia nor any other symptoms compatible with such an extensive involvement. She had neither hemoptysis nor fever.

Besides, there was some data that could mislead us such as weight loss and headache, symptoms suggestive of a metastatic disease and that polypoid lesion in hepatic flexure of transverse colon reported in abdominal CT scan of patient. Of course we performed colonoscopy and it was normal totally. Furthermore brain magnetic resonance imaging was done that was normal.

Due to this atypical presentation of disease we represented it here. The patient referred to oncologist to begin the treatment by chemotherapy.

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**Source of Support:** Nil, **Conflict of Interest:** None declared.