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Bronchial Carcinoid Presenting as Multiple Lung Abscesses

Zeeshan Waheed¹, Muhammad Irfan¹, Saulat Fatimi² and Ruqaiya Shahid³

ABSTRACT

Bronchial carcinoid tumours is a rare group of pulmonary malignant neoplasm that is derived from neuroendocrine system. Bronchial carcinoid usually present with hilar masses, atelectasis, bronchiectasis, or post-obstructive pneumonia. This case describes a very unusual presentation of bronchial carcinoid tumour with multiple lung abscesses involving the whole lung. This report is of an adult lady who presented with multiple lung abscesses involving her whole of the right lung. She was found to have an endo-bronchial lesion in her right main bronchus which eventually turned out to be carcinoid tumour. She responded to resection and antibiotic therapy.

Key words: *Bronchial carcinoid. Lung abscess. Endo-bronchial obstruction.*

INTRODUCTION

Bronchial carcinoid tumours is a rare group of pulmonary malignant neoplasm that are derived from neuroendocrine system. Carcinoid tumours of the lung account for around 1 – 2% of all lung cancers,¹ and are 20 – 30% of all carcinoid tumours.² They originate from the neurosecretory cells of the bronchial mucosa. Bronchial carcinoids appeared most frequently as round or oval opacities with sharp and often notched margins.

Following is a report of an adult female who presented as multiple lung abscesses secondary to an endo-bronchial carcinoids lesion.

CASE REPORT

A 31 years old female presented with 2 weeks history of fever, cough and shortness of breath. Her current illness started 2 weeks back with low grade fever associated with mild cough which was dry, later on her symptoms worsened with high grade fever and severe cough. She then developed progressively worsening shortness of breath.

She had a history of recurrent respiratory tract infections for the last 3 years for which she was treated with multiple courses of antibiotics with partial response in her symptoms. Five years ago she had been treated empirically for tuberculosis with 9 months of anti-tuberculous medicine.

At presentation, she was tachypneic and tachycardic. Her respiratory rate was 28/minute, pulse 130/minute, temperature of 40°C with oxygen saturation of 90%

on room air. Chest examination revealed impaired percussion note on the right hemithorax with decreased breath sounds all over the right side. There were normal findings on left side. Chest radiograph showed complete opacification of right hemithorax with bronchus cut-off sign at the right main bronchus and the shift of the mediastinum to the same side was suggestive of complete collapse of the lung which could be due to an endobronchial growth, causing obstruction of major airway (Figure 1).

As the patient was very toxic, tachypneic, tachycardic and hypoxic, therefore, it was decided not to proceed for bronchoscopy as it would be too risky at this point and might further deteriorate patients clinical condition. Therefore, CT scan of chest was performed. It revealed enhancing endobronchial lesion in the right main stem bronchus causing bronchial obstruction and expansion, resulting in almost complete replacement of right lung by multiple fluid filled cystic spaces most likely multiple abscesses (Figure 2). As the CT scan showed that whole of the right lung was replaced with abscesses and there was no normal lung left behind to save, therefore, it was decided to proceed for right sided pneumonectomy. Plan for bronchoscopy was abandoned as it would not change the decision.

She was started on broad spectrum antibiotics and her right sided pneumonectomy was performed. Her resected lung was full of multiple abscesses on gross examination. Histopathology revealed a polypoidal mass within the main bronchus lined by respiratory type of epithelium with ulceration on the surface. The lesion is well vascularized and is composed of small uniform cells arranged in trabeculae, compact nests and glands. The tumour cells exhibit moderate amount of cytoplasm, rounded nuclei with granular chromatin and occasional prominent nucleoli, findings were consistent with typical bronchial carcinoid (Figure 3). Postoperatively she was continued on antibiotics. She recovered well and discharged home. On follow-ups in clinic, she remained stable without any complication.

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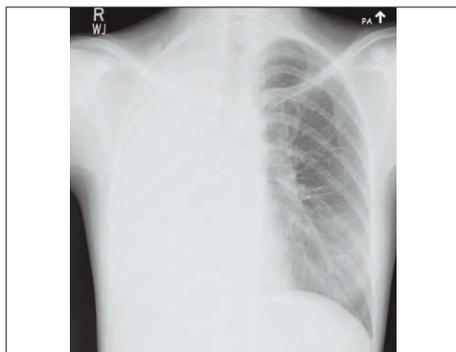


Figure 1: Chest X-ray at presentation showing complete opacification of the right hemithorax.

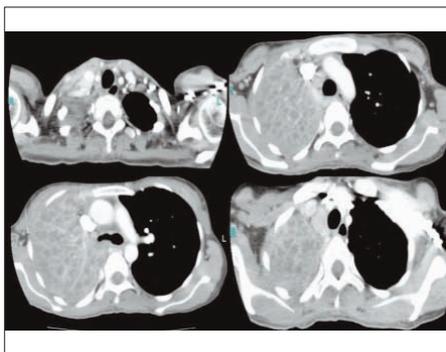


Figure 2: CT scan chest showing complete replacement of the right lung with multiple abscesses.

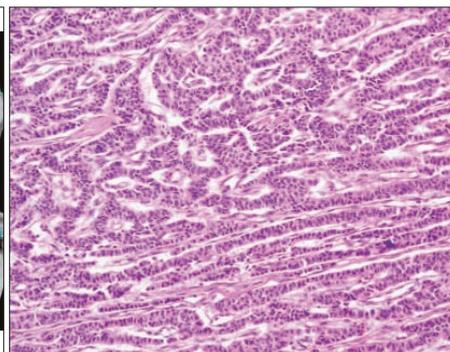


Figure 3: Section showing indistinct cellular borders, moderate amount of finely granular cytoplasm, prominent rounded nuclei with granular chromatin (Hematoxylin-Eosin stain).

DISCUSSION

Bronchial carcinoid are classified as typical and atypical. Typical carcinoid tumours are more common and found more centrally within the major bronchi and are low-grade tumours, with 10-year survival rates upto 90%.³ Atypical carcinoid tend to arise from the peripheral and central bronchi with equal frequency.⁴ They are more aggressive with a 5-year survival rate of 25% to 69%.⁵ The case presented here was a case of typical carcinoid.

Around one-third of patients with a carcinoid pulmonary tumour are asymptomatic.⁶ Upto 5% exhibit hormonally-related symptoms such as Cushing's syndrome or the carcinoid syndrome.⁷ The most frequent presentation of carcinoid are cough, dyspnea, hemoptysis, lobar obstruction and post-obstruction lobar pneumonia.⁸ The diagnosis is often delayed, and patients may have received several courses of antibiotics to treat recurrent pneumonia before the carcinoid tumour is diagnosed. Same is the case here with a history of recurrent respiratory tract infections for the last few years for which she was treated with multiple courses of antibiotics and also empiric anti-tuberculous therapy.

Regarding chest imaging, approximately 75% of bronchial carcinoids have an abnormal chest X-ray.⁹ A chest CT scan is needed for better resolution of tumour extent, location, and the presence or absence of mediastinal lymphadenopathy.¹⁰ CT scan may show a central tumour resulting in bronchial obstruction and segmental atelectasis. This patient presented very uniquely with multiple lung abscesses possibly because of prolonged complete obstruction of the right major bronchus leading to a postobstructive pneumonia; and the pneumonia could have been complicated with multiple lung abscesses eventually involving the whole right hemithorax.

Definitive diagnosis of the tumour is made by biopsy and histopathological examination of the tissue often obtained through endobronchial biopsy as they are centrally located and amenable to biopsy. Other approaches are the tissue CT-guided transthoracic needle or direct surgical excision.⁴ In this patient endo-

bronchial biopsy was deferred because of her clinical condition and was later on decided to proceed for pneumonectomy of right lung after the presence of multiple lung abscesses on CT scan. Afterwards her metastatic workup was negative for any metastasis and on follow-up she was well and asymptomatic since then.

Bronchial carcinoid should be considered in the differential diagnosis in young patient presented with endobronchial obstruction.

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