ECRONICON OPEN ACCESS

EC CLINICAL AND MEDICAL CASE REPORTS

Case Report

# Exceptional Cause of Post-Operative Lung Obstruction

**Massine El Hammoumi[1]*, Hicham Souhi[2], Mohammed Bhairis[1], Adil Zegmout[2], Alassane Essotina Ayouba[1] and El Hassane Kabiri[1]**

*[1]Department of Thoracic Surgery, Military Teaching Hospital Mohammed V, Faculty of Medicine and Pharmacy, Mohammed V University, Rabat, Morocco*

*[2]Department of Pneumology, Military Teaching Hospital Mohammed V, Faculty of Medicine and Pharmacy, Mohammed V University, Rabat, Morocco*

***Corresponding Author:** Massine El Hammoumi, Department of Thoracic Surgery, Military Teaching Hospital Mohammed V, Faculty of Medicine and Pharmacy, Mohammed V University, Rabat, Morocco.

**Received:** February 23, 2021; **Published:** April 26, 2021

## Abstract

Bronchus obstruction occur in a number of post-operative pulmonary conditions. Central right or left bronchus mucus plug causes complete pulmonary collapse making it an vital emergency. Mucous plugs is the most frequent causes of bronchus obstructions. We describe a case report of a 50-year-old man that, in postoperative period of a left lower lobectomy for typical carcinoid tumor, has had a total remaining left lung collapse. Bronchoscopy objectified the presence of tumoral material into the central left bronchus. Re-operation with ablation of tumor material allowed good post-operative course.

***Keywords:*** *Bronchus Obstruction; Carcinoid Tumor; Lung Obstruction*

## Introduction

Bronchus obstruction occur in a number of chest surgery procedures. Central right or left bronchus plug causes complete pulmonary collapse and remain a vital emergency. Mucous plugs is the most frequent causes of bronchus obstructions but post-operative tumoral obstruction is exceptional.

## Case Presentation

A 50 years old man with history of spondylarthritis and chronic smoking, hospitalized in our thoracic department for left lower lobe typical carcinoid tumor. Imaging data (CT scan and PET-scan) showed a tumor of the left Fowler segment with parenchyma destruction of the lower lobe (Figure 1) (SUV = 18) with mediastinal lymph node. Bronchoscopy described the presence in the origin of the left Nelson bronchus of a tumoral mass. Pathology data of two different specimen objectified a typical carcinoid tumor. Preoperative spirometry noted a VEMS at 95%. A left lower lobectomy through a posterolateral thoracotomy was performed. Semi-automatic linear cutter was used to cut and suture the left lower bronchus cutted in a safe area with 1 cm margin of palpated tumor. Pre-operative lung re-expansion was satisfactory. In the first post-operative day (few hours later of surgery) the patient presented increasing shortness of breath and a productive cough. Physical examination demonstrated TA at 110/80 mmHg, asymmetric thoracic movement, absent left breath sounds, and increased vocal resonance. Arterial blood gas (ABG) demonstrated respiratory acidosis. Other biology data were normal. A chest radi-

ography showed totally opacified left lung (Figure 2). A thoracic CT scan confirmed the complete lung atelectasis without pleural effusion. Bronchoscopy revealed an encapsulated tumor with complete occlusion of the distal portion of the left main bronchus. To avoid the risk of tumoral dissemination or incomplete ablation a bronchotomy was performed through the same thoracotomy with complete removal of the free remaining tumor (Figure 3). The bronchus was repaired with a 4.0 few Prolene bronchoplastic sutures. Post-operative course was uneventful. The next X-ray showed left lung fully expanded. The pathology confirmed benign nature of a neuro-endocrine typical carcinoid tumor. One month later, chest radiography showed a complete resolution.

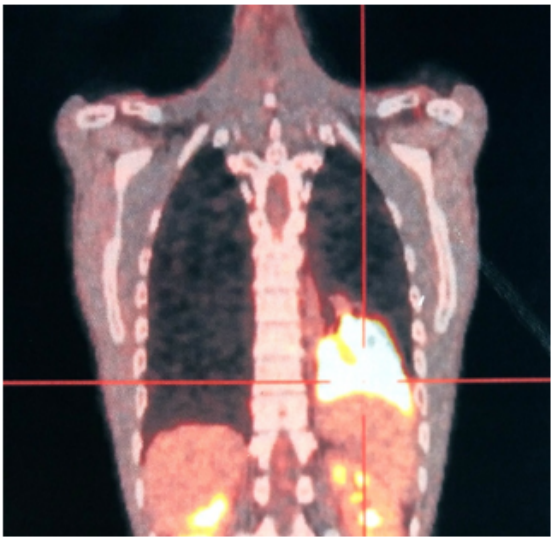

***Figure 1:*** *PET scan of the typical carcinoid of the left lower lobe*

***Figure 2:*** *Chest radiograph with total post-operative left lung obstruction.*

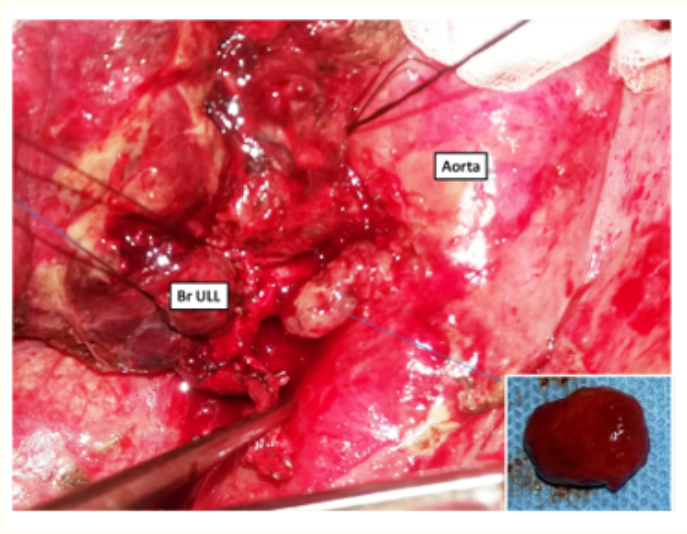


***Figure 3:*** *Pre-operative view of the bronchotomy and the Ablation of endobronchial tumor remaining fragment (Bronchus of the left upper lobe).*

## Discussion

Lung carcinoid tumors are rare about 25% of all carcinoid tumours but only 1-2% of all lung neoplasms [1,2]. About 70% of carcinoid tumors are located in the center of large bronchial tubes, and 20%, are known to be peripheral carcinoids, involving in the lung periphery [2]. Surgical resection is the best management for these tumours. Radical surgery should concern the tumor and spare normal functional lung segments [1-3]. All typical carcinoids showed lowest fluorodeoxyglucose (FDG) uptake except some oncocytic carcinoid with a high uptake (SUV max until 45.7).

The most common post-operative cause of bronchus plug is an accumulation of desquamating mucus cells of bronchus and mucus that make an obstruction in the elderly and in all patients that have lost cough capacity [5]. Anesthesia, surgical and patient-related factors are usually combined [6]. A sectorial atelectasis appears when the mucus plug occludes a peripheral bronchus. If it occludes the main bronchus a complete pulmonary collapse occurs. In the current case surgical manipulation and the use of the linear stapler induced a tumor partition and migration into the central left bronchus. Pre-operative lung re-expansion probably limited the tumor migration into the right side despite the favorite right sided position of the patient.

## Conclusion

Lobectomies when indicated in carcinoid tumors and performed by thoracoscopical or open surgical methods [7], can allow excellent post-operative outcomes, but in such crumbly tumors pre-operative check of the bronchial tree can be mandatory to diagnose remaining tumoral material in order to prevent such obstructive complications.

## Conflicts of Interest

No conflicts of interest regarding this article.

## Bibliography

1. Tanabe Y., *et al.* "Oncocytic carcinoid tumor of the lung with intense F-18 fluorodeoxyglucose (FDG) uptake in positron emission tomography–computed tomography (PET/CT)". *Annals of Nuclear Medicine* 27.8 (2013): 781-785.

2. Bagheri R., *et al.* "Tracheobronchopulmonary carcinoid tumors: analysis of 40 patients". *Annals of Thoracic and Cardiovascular Surgery* 17.1 (2011): 7-12.

3. Filosso PL., *et al.* "Prognostic model of survival for typical bronchial carcinoid tumours: analysis of 1109 patients on behalf of the European Association of Thoracic Surgeons (ESTS) Neuroendocrine Tumours Working Group". *European Journal of Cardio-Thoracic Surgery* 48.3 (2015): 441-447.

4. Nair SR and Pearson SB. "Mucous plug in the bronchus causing lung collapse". *The New England Journal of Medicine* 347.14 (2002): 1079.

5. Tsuyoshi Ueno., *et al.* "Surgical outcomes in 13 patients with bronchopulmonary carcinoid tumors including one recurrent oncocytic carcinoid tumor?". *The General Thoracic and Cardiovascular Surgery* 67.5 (2019): 486-489.

6. Ueno T., *et al. The General Thoracic and Cardiovascular Surgery* (2018).

7. Asamura H., *et al.* "Neuroendocrine neoplasms of the lung: a prognostic spectrum". *Journal of Clinical Oncology* 24 (2006): 70-76.

**Volume 4 Issue 5 May 2021**