

Lung Carcinoid Tumor: A Case Report

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Abstract

Case Report

Introduction: primary carcinoid tumors of the lung are rare tumors, they account approximately 0.5 to 5% of all lung malignancies and roughly 20 to 30% of all carcinoid tumors. Early diagnosis is extremely important in order to allow the surgical excision which still the main treatment. **Presentation of case:** We describe a case of a twenty years old woman, who complained from intermittent dry cough with bloody sputum for six months, clinical examination showed left basithoracic condensation syndrome, chest Xray revealed homogeneous dense opacity of the left paracardiac fold. CT scan showed a left mediastino-pulmonary lesion process which comes into contact with the left ventricle with infiltration of its wall, it includes the proximal part of the left lower lobe bronchus (LLLb), with reduction of its caliber, without mediastinal lymphadenopathy or pleuropericardial effusion. The bronchoscopy with biopsy of the endobronchial lesion was performed; the histopathology study confirmed the diagnosis of carcinoid tumor. The treatment of the choice was complete resection left inferior lobectomy. The patient was discharged home within 7 days without complications. **Conclusion:** A carcinoid tumor may be considered a challenging disease due to its infrequency, a good index of suspicion and knowledge of the tumor is very important for a good outcomes.

Keywords: lung cancer, carcinoid tumor, diagnosis, treatment.

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INTRODUCTION

Carcinoid tumors are developed from stem cells of the bronchial epithelium known as Kulchitsky cells, which have neuroendocrine activity. These neuroendocrine cells carcinomas can develop tumors in many different organs with most common being the appendix, the small intestine (duodenum), the rectum and the pancreas and more rarely the lungs [1]. The most recent classification system from the World Health Organisation categorized neuroendocrine pulmonary tumors in four types: typical carcinoid; atypical carcinoid (ATC); large cell neuroendocrine carcinoma; and small cell lung cancer [2]. Carcinoid bronchopulmonary tumors represent approximately 25% of all carcinoid tumors and 0,5%–5% of all lung neoplasms [3]. Approximately 70% of these tumors are located centrally in the large bronchial tubes leading to the lung, while 10%–20%, known as peripheral carcinoids, are developed in the pulmonary periphery [4].

Early diagnosis is extremely important to allow the surgical excision which represents the treatment of the choice and also determines the

prognosis [5]. Diagnosis is based on imaging which show hilar or perihilar lesion process, endobronchial nodules, it can show also enlarged mediastinal lymph nodes, or indirect signs of bronchial obstruction or peripheral nodules [6]. Fiber optic Bronchoscopy with biopsy is the main issue for making diagnosis [5].

CASE REPORT

Twenty years old female, student, nonsmoker, she had no history of drug allergy, self or family history of relevant medical or surgical illness, presented to our department with complaints of intermittent dry cough with bloody sputum within six months. Clinical exam noticed normal vital parameters, she had a left basithoracic condensation syndrome, and otherwise, there were no remarkable findings on other systems evaluation. Chest x-ray revealed Homogeneous dense opacity of the left paracardiac fold with a convex bumpy outer contour towards the lung, internal contours embedded in the mediastinum with negative silhouette sign (figure 1), Chest computerized tomography showed a left mediastino-pulmonary lesion process measuring 74 * 43 * 56mm, heterogeneously enhanced after contrast, comes into contact with the left ventricle

with infiltration of its wall, it includes the proximal part of the LLLB, with reduction of its caliber, we have noticed the absence of mediastinal lymphadenopathy and the pleuropericardial effusion (figure 2). Bronchoscopic evaluation found a tumor bud completely obstructing the orifice of the LLLB (figure 3), shiny bleeding on contact. The histopathological study of the specimen biopsy showed a tumor proliferation made up of monomorphic cells, of endocrine architecture with inflammatory cytology.



Fig-1: Chest x-ray revealed Homogeneous dense opacity of the left paracardiac fold with negative silhouette sign

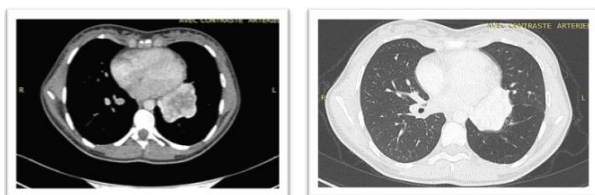


Fig-2: (Chest CT) showed a left mediastino-pulmonary lesion process comes into contact with the LV with infiltration of its wall; it includes the proximal part of the LLLBB, with reduction of its caliber.



Fig-3: Endoscopic appearance of the carcinoid tumor

As part of the extension assessment, Cerebral and abdominopelvic CT scan did not show any metastasis. Her complete blood count, renal function test and serum electrolytes were in the normal range.

In terms of operability, the patient had a WHO Performans Status at 0; the respiratory function exploration showed a small airway involvement and a normal cardiac evaluation. The therapy selected was a left lower lobectomy by a left postetolateral

thoracotomy through the 6th left intercostal space; Post-operative outcomes were good, without any complications.

Histopathologic study of the excised mass showed lower left lobectomy piece measuring 13 * 8 * 8.5 cm, on slice presence of a well limited neoplasm, encapsulated measuring 5 * 3.5 * 4.5 cm beige of color and firm consistency (figure 4), on examination histologic, it is an infiltrating carcinomatous proliferation which is organized in pseudoglands of endocrinoid architecture, the cytoplasm is eosinophilic, the immunohistochemical study was in favor of a typical carcinoid tumor (figure 5).



Fig-4: lower left lobectomy piece

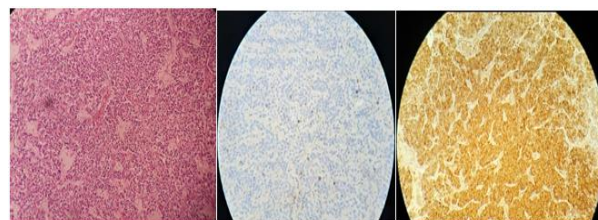


Fig-5: histological and immunohistochemical aspect of carcinoid tumor

DISCUSSION

Carcinoid tumors are neuroendocrine neoplasms originating from enterochromaffin cells, commonly found in the gastrointestinal tract, Occurrence in the respiratory tract corresponds to 10-30% of all cases [3]. Based on histologic differentiation the World Health Organization/The International Association for the Study of Lung Cancer (WHO/IASLC) classifies pulmonary Carcinoid tumors into: Typical carcinoids (TCs) (76-90%), less than 2 mitosis/2 mm² and no necrosis; atypical carcinoid (ACs), increased mitosis (2-10 mitosis/2 mm²) with confirmed necrosis [7, 8]. Typical carcinoid tumors affect both sexes, with some studies reporting a higher prevalence in women. They have two peaks of incidence: one in adolescence and another near the age of 45 years. There is no known association between typical carcinoid tumors and tobacco use or exposure to other carcinogens. Atypical carcinoid tumors, however, have been reported to have an association with tobacco use. Metastases occur in 15% [6].

About 25% of patients with carcinoid lung tumors are asymptomatic [9]. The severity and variety of symptoms depend on the size of the carcinoid pulmonary tumor and the production of hormones. In symptomatic patients with central carcinoids, the most common symptoms are: persistent cough, asthma-like wheezing, chest pain, dyspnea, hemoptysis and obstructive pneumonitis [10]. Even more rarely, pulmonary carcinoids may release corticotropin, growth hormone releasing hormone and vasoactive substances resulting in Cushing's syndrome, acromegaly and carcinoid syndrome respectively [5]. Bronchial typical and atypical Carcinoids have similar radiologic features on chest CT scan making bronchoscopic tissue biopsy crucial to differentiate one from another [5]. Carcinoid tumors are characteristically highly vascular but the incidence of serious bleeding during bronchoscopic biopsy is very low (<1%) which makes bronchoscopy safe and a gold standard modality for earlier histological diagnosis [11].

Surgical resection is the treatment of choice in patients with localized TCs or ACs and it is the only curative option for resectable tumors. Carcinoid tumors have poor response for adjuvant chemo and radiotherapy making complete resection of the tumor with regional lymph nodes the gold standard of treatment [12].

Among pulmonary malignancies, carcinoid tumors have the highest prognostic rates. Typical carcinoid tumors have better prognoses than the atypical forms. The 5-year survival rate reaches 92%–100% for typical lung carcinoids and only 61%–88% for ATCs [13]. Some studies have shown that lymph node involvement as well as the presence of tumorlets, have significant negative effects on prognosis [13].

CONCLUSION

A carcinoid tumors of the lung may be considered as a challenging disease because of the rare incidence, which most often present with non-specific pulmonary symptoms (cough, hemoptysis or recurrent pneumonia), and rarely present with classic carcinoid syndrome. Bronchoscopy is a gold standard modality for earlier histological diagnosis. Surgical resection is the treatment of the choice for patients with no evidence of systemic metastasis.

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