

Case Report: Rare Cause of Hemoptysis in A Young Person

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Abstract

Case Report

Introduction: Hemoptysis is an emergency, its diagnosis is often made on questioning, it must lead to rigorous etiological research. The thoracic CT angiography makes it possible to specify the exact mechanism and therefore to adapt the management. **Observation:** We report the case of a 20-year-old patient, with no particular pathological history, admitted for low-abundance hemoptysis that has progressed for 6 months. A thoracic CT angiography was performed showing a mediastino-pulmonary lesion process centered on the left lower lobe bronchus. Bronchoscopy with biopsy and pathological examination was indicated and demonstrated the presence of a bronchial carcinoid tumor. The patient underwent a lower left lobectomy, the operative consequences were simple, the patient was discharged after 10 days of hospitalization. **Conclusion:** Patients with recurrent respiratory symptoms should be carefully examined with chest CT and bronchoscopy followed by tissue biopsy for an accurate and early diagnosis.

Keywords: Hemoptysis, patient, etiological research, A thoracic CT angiography.

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INTRODUCTION

Hemoptysis is an emergency, and its diagnosis is often discussed on the basis of questioning alone. Since hemoptysis is essentially diagnostic, any hemoptysis, even minimal, must lead to a rigorous etiological search, since its etiologies can be formidable, such as pulmonary neoplasms, and its management is radically different. The various radiological techniques, in particular thoracic angioscanner, considerably modify the management of these patients by specifying, before any invasive therapy, the location and mechanism of the hemoptysis [1].

We present the case of a 20-year-old female patient admitted for recurrent hemoptysis for 6 months.

OBSERVATION

A 20-year-old female patient, non-smoker and without any notable history, admitted to our training for the management of a recurrent hemoptysis of low abundance associated with a dry cough evolving for 6 months. The clinical examination and biological tests were unremarkable except for an iron deficiency anemia. Given the age of the patient, the relatively

chronic symptomatology and the endemic context of our country, the possibility of common pulmonary tuberculosis was very likely.

The diagnosis was ruled out by direct examination of the sputum with Ziel Nelson stain, which was negative. Thoracic angioscan (Fig 1 and 2) showed a lobulated mediastinal pulmonary lesion process measuring 74x43x56 mm centered on the left lower lobar bronchus, heterogeneously enhanced by contrast injection, with a focus of homolateral ventro-basal atelectasis and no detectable medial adenopathy. A bronchoscopy with biopsy was indicated, and revealed the presence of a bronchial tumor in the form of a shiny bud completely obstructing the left lower lobar bronchus. Anatomopathological examination (Fig 3) confirmed the carcinoid nature of the tumor.

The patient underwent a left inferior lobectomy by left posterolateral thoracotomy, the postoperative course was simple, the patient was discharged after 10 days of hospitalization. The anatomopathological examination of the surgical specimen was in favour of a typical carcinoid tumour.

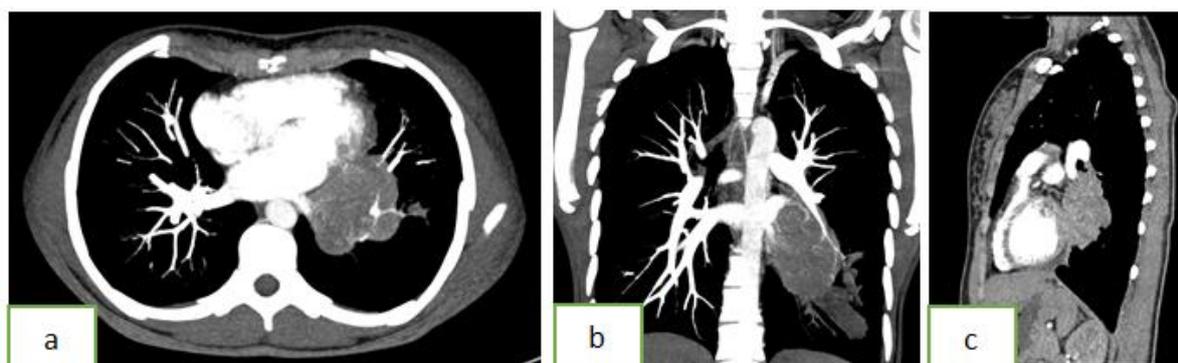


Figure 1: Thoracic angioscan in medial window: (a): Axial section after injection of contrast medium showing the tumour process, lobulated contours, heterogeneously enhanced by contrast (hypervascular). (b) and (c): coronal and sagittal reconstructions showing a focus of ventro-basal atelectasis



Figure 2: Chest angioscan in parenchymal window in axial sections (a) and coronal and sagittal reconstructions (b) and (c) showing the tumour process centred on the left lower lobar bronchus with a focus of ventro-basal atelectasis

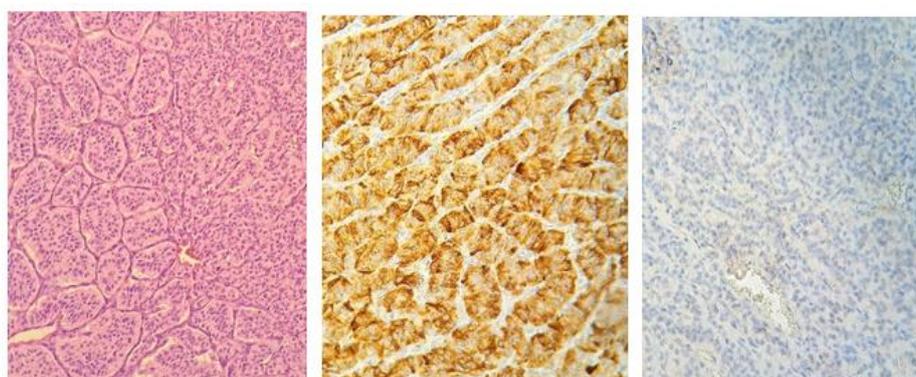


Figure 3: Pathological analysis of the surgical specimen showing uniform round tumour cells, a finely granular cytoplasm and a nucleus with heterogeneous chromatin (salt and pepper appearance)

DISCUSSION

Bronchial carcinoids are rare, slow-growing lung neoplasms belonging to the neuroendocrine tumor family [2].

On the basis of histological differentiation, the World Health Organization / International Association for the Study of Lung Cancer (WHO / IASLC) classifies them into: typical carcinoid (76-90%); atypical carcinoid [2]. This distinction is important both therapeutically and prognostically since the 10-year survival after surgery is 92% for typical carcinoids and 64% for atypical carcinoids [3]. Bronchial localization

represents 25% of all carcinoid tumors [3], which is the case of our patient.

The revealing symptomatology is non-specific. It is most often obstructive signs: recurrent pulmonary infections, coughing or wheezing, more rarely hemoptysis which can be justified by the hyper-vascular character of this type of tumor, as in our patient's case. Exceptionally, these tumors can release corticotropin, growth hormone releasing hormone and vasoactive substances leading to Cushing's syndrome, acromegaly and carcinoid syndrome respectively [4], and none of these were evident in our patient. Most intrabronchial

carcinoid tumors are misdiagnosed or diagnosed late because of their rarity.

The imaging characteristics of carcinoid tumors depend on the location of the lesion. Approximately 80% of pulmonary carcinoids are found in the center of the main, lobar, or segmental bronchi [5]; the most common scannographic presentation is that of a highly vascular hilar or peri hilar mass, clearly enhancing on post-contrast CT, usually well defined, round, and sometimes slightly lobulated with calcifications in 30% of cases which helps to narrow down the differential diagnosis, there is associated atelectasis and/or infiltrate [6]. On standard radiography, the central lesion may sometimes be obscured. CT can also be used to determine the presence of mediastinal PDA and the degree of tumor extension.

Positron emission tomography, on the other hand, is considered to be of limited value with a sensitivity of only 14% in low metabolism cancers such as bronchial carcinoid. However, PET may be useful in the evaluation of carcinoids larger than 1.5 cm, so a smaller lung nodule that looks benign on PET requires close radiological surveillance [7].

Bronchoscopy plays an important role in the diagnosis of carcinoids in the majority of cases because the tumor is centrally located and visible on endoscopic evaluation, despite the hypervascular nature, no major bleeding has been recorded [7].

On the basis of these data, the safety of the endoscopic procedure can be affirmed. To increase the safety of the procedure, some authors advise the instillation of epinephrine before the biopsy or the use of a rigid bronchoscope in order to decrease the risk of bleeding. The result is the presence of an endoluminal budding mass, typically well vascularized, pink-red in color, which fits perfectly with our patient's case.

Surgical resection represents the treatment of choice for these tumors. Depending on the size of the tumor, the importance of each of the endo and extra-bronchial components and the histological grade, the treatment can be conservative consisting of a bronchiectomy, or invasive up to total pneumectomy [8]. Carcinoid tumors have a poor response to adjuvant chemotherapy and radiotherapy [2], so our patient did not receive any adjuvant treatment. The prognosis of typical carcinoid is good. Most typical carcinoid tumors

are slow growing and therefore have a benign course [9].

CONCLUSION

In conclusion, the present case illustrates clinical diagnostic difficulties sometimes encountered during the workup of a young adult patient with recurrent respiratory symptomatology. Thus, patients with recurrent respiratory symptoms should be thoroughly investigated with chest CT and bronchoscopy followed by tissue biopsy for an accurate and early diagnosis.

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