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Case Report

Treatment of Lung Carcinoid Tumor in a Pregnant Woman - A Rare Condition

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Abstract

Lung carcinoid tumors are a rare condition that represents about one percent of all lung cancers. It is especially rare in pregnant woman. We have not found any descriptions about lung carcinoid tumors during pregnancy. This article describes a rare condition of a pregnant woman presenting with a left lung carcinoid tumor, including the therapeutic modality adopted for this particular case.

Keywords: *Pregnancy; Lung Neoplasms; Surgical Treatment; Recurrent Pneumonia*

Abbreviations

LCT: Lung Carcinoid Tumor; CT: Computer Tomography; X-ray: Radiography

Introduction

Carcinoid tumors originating in neuroendocrine cells are rare, usually slowly-growing neoplasms; however, they may present as aggressive and rapidly-progressing tumors. Epidemiological data indicates that their prevalence is gradually increasing, which may be explained, at least in part, by the development and wider use of advanced diagnostic methods [1]. These tumors usually occur in the gastrointestinal tract, mediastinum and lungs.

During pregnancy, the malignancy incidence varies from 0.07 to 2.8%. The most common malignant diseases during this period are uterine tumors, hematological diseases such as leukemias and lymphomas, as well as dermatological ones such as melanoma [2]. To the best of our knowledge, there are no previous reports of LCT occurring during pregnancy. This article describes a rare condition in a pregnant woman presenting with a left LCT of which treatment was very challenging.

Case Report

A forty-two-year old Caucasian woman, on the sixteenth week of pregnancy confirmed by obstetric ultrasonographic examination, with no smoking history, had come to the emergency room with a three-day cough, fever and purulent sputum. Left upper lobar pneumonia was diagnosed after clinical examination and chest X-ray. She referred a history of recurrent pneumonias in the same site (left lung), with an incidence of three per year. After a discussion involving the thoracic surgery, obstetrics and radiology departments, it was decided to begin the antibiotics treatment and to assess the lungs through a chest CT scan. The measures to protect the fetus against radiation were adopted.

The CT scan revealed a complete left upper lobar lung atelectasis associated with a bronchial obstruction (Figure 1). The investigation continued with a bronchoscopy that showed a shiny and vascularized broad-based endobronchial lesion occluding completely the left upper lobe ostium. An endoscopic resection was attempted, but the bronchoscope could not be advanced through the tumor, it could lead to massive endobronchial bleeding and a life-risk condition. The endobronchial biopsy was performed and the hystological findings revealed a typical LCT.

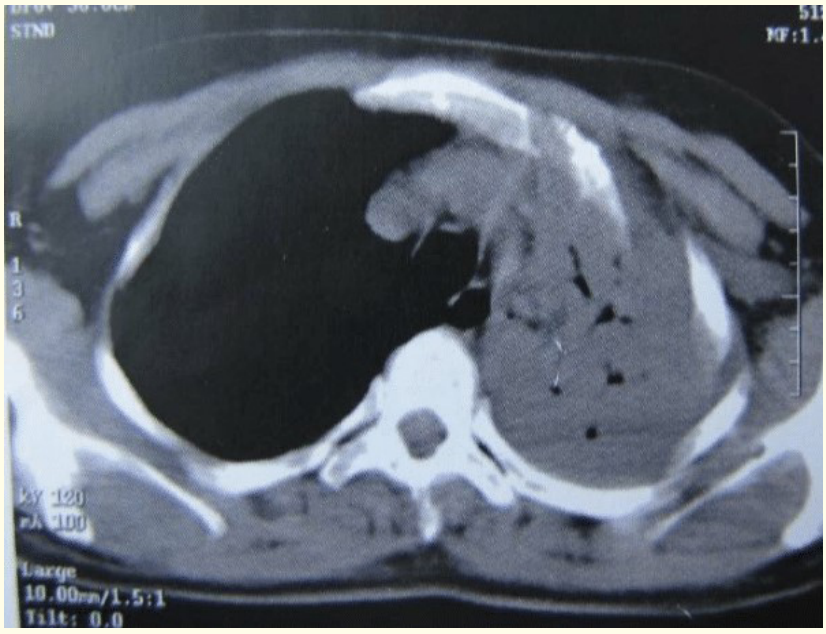

Figure 1: *Pre-operative CT scan image shows left pulmonary upper lobe pneumonia associated with a complete lobar atelectasis.*

After a multidisciplinary case discussion with the thoracic surgery, obstetrics and anesthetics departments, it was decided to treat the tumor surgically as soon as possible, due to the risk of complications associated to pneumonia during pregnancy such as: sepsis, hypoxemia, higher risk of abortion, low birth weight, premature birth, maternal respiratory distress and hypoxemia during labor.

The anesthesia was performed with intravenous drugs such as propofol, remifentanil and cisatracurium and the fetus was continuously monitored by cardiotocography performed and interpreted by an obstetrician during operation.

A left upper pulmonary lobe resection was performed, followed by a complete mediastinal lymphadenectomy. The incision used was a classical lateral thoracotomy in the fifth intercostal space level. There were no intraoperative complications. After the procedure, the patient was admitted at the intensive care unit. She was submitted to an obstetric ultrasonographic examination. The fetus had good heart frequency, breath movements and was active. The histological findings were of a typical LCT of 1.2 cm in its largest diameter, with no metastatic mediastinal lymph nodes. There were no postoperative complications and the hospital discharge took place on the fourth postoperative day.

The patient delivered a healthy baby, whose weight at birth was 3,500 g on the 34th week of pregnancy. The Apgar score was eight in the first minute and ten in the fifth minute. Twelve months after surgical treatment, there is no evidence of tumor recurrence on chest CT scan and the patient is completely asymptomatic to date (Figure 2).

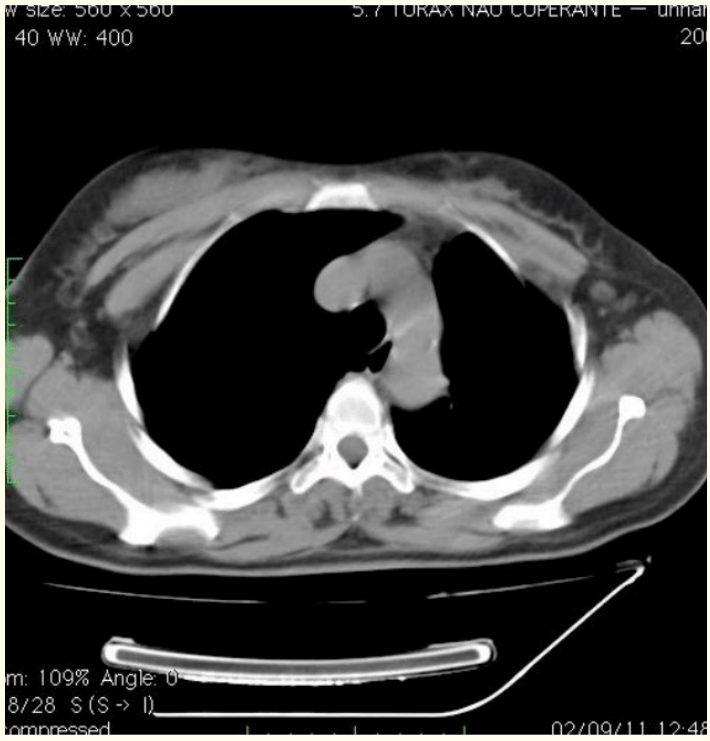

Figure 2: *Post-operative CT scan image showing no evidence of tumor recurrence.*

Discussion

LCT are a rare condition that represents about one percent of all lung cancers. It occurs equally in males and females of 45 to 55 years old. These tumors are classified as typical or atypical, according to some morphological features [1]. Typical lesions present as less than two mitosis on microscopic high-power field (HPF) and absence of necrosis. Atypical lesions present with two to ten mitosis on HPF and punctate necrosis [3]. The typical lesions have an indolent low-grade aggressive behavior, but metastatic lesions can be present in about 4% of patients [3].

The treatment of choice is the surgical resection. Endoscopic ablations in well defined cases, bronchotomy and lung resections with or without bronchoplastic procedures have been described. Hilar and mediastinal lymph node sampling and examination should be always performed during open procedures [4].

However, LCT have an important characteristic: it is a indolent tumor that can be treated through bronchoscopic resection. These aspects can prevent a pulmonary resection during pregnancy. However, an endoscopic treatment can be considered if the tumor size is not large enough to block the advancement of the bronchoscope pass it [5]. In this particular case, there was no possibility for bronchoscopic resection because of the size, location and shape of the tumor.

The patient had recurrent pneumonia being the last episode of extreme gravity. It is known that complications of pneumonia during pregnancy are well described in medical literature, including life-threatening complications for the mother, such as respiratory failure during labor and unsafe abortion risk [6].

There have been no previous reports of LCT resection in pregnant patients, although there have been reports of pregnant women pulmonary tissue resection to treat other diseases such as pneumothorax and pulmonary arteriovenous malformation [7-9]. Because of its rarity, there are no consensus about thoracic surgical procedures in pregnant women, the only information concerning this subject come from case reports and case series. However it is described as safe procedures, specialy if it is performed after the first trimester of pregnancy period [7,8].

Considering the risks of a new episode of pneumonia during the end of pregnancy, the impossibility of bronchoscopic treatment and the safety of performing thoracic surgical procedures during this period, we decided to do the left lung upper lobe ressection with mediastinal lymphadenectomy which is the treatment of choice for this type of lung cancer.

Conclusion

LCT in pregnant women is a rare condition. There is not enough information about treatment of this kind of lung cancer during pregnancy in the medical literature. Maybe the best conduct is to evaluate each case in particular, considering the risks and benefits, in order to decide the best moment to perform the surgical intervention.

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Conflict of Interest

The author declare no conflict of interest.

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