CASE REPORT

BRONCHIAL CARCINOID TUMOR AND LOCULATED TUBERCULOUS EMPYEMA COEXISTING IN THE SAME LUNG: A CASE REPORT

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ABSTRACT

Carcinoid tumors of the tracheobronchial tree are rare events occurring at an incidence of 1-2% of lung cancers. The coexistence of carcinoid tumors with tuberculosis is an even rarer occurrence. We report active loculated tuberculous empyema and a bronchial carcinoid coexisting in the same lung in a 59 year old male patient. The clinical presentation with emphasis on diagnostic difficulties in dual pathologies and therapeutic options are discussed. Preoperative bronchoscopy has been recommended prior to thoracotomy in patients with tuberculosis for the identification of specific tuberculosis (tbc) related pathologies. In addition, routine preoperative bronchoscopy may have the additional benefit of detecting rare and unsuspected pathologies such as an associated carcinoid tumor.

Key words: Carcinoid, tuberculous empyema, preoperative bronchoscopy

INTRODUCTION

Harpold in Sabiston attribute Oberndorfer to coin the term KARZINOIDE in 1907 which means “resembles carcinoma” to describe less aggressive tumors with better prognosis than the usual bronchogenic carcinoma (1).

Carcinoid tumors comprise 0.5-1% of bronchial tumors and represent a range of neuroendocrine tumors with different malignant Potential (2). They are presumed to arise from the amine precursor uptake and deamination cells which are derived from the neural crest cells (1).

Carcinoid tumors may be located anywhere along the tracheobronchial tree (1,2). Around 60% are located centrally (2). Patients commonly present with the triad of hemoptysis, cough, and recurrent infection (2) .The tumors grow slowly and symptoms may date for many years before diagnosis (2).

The only potentially curative treatment currently available for the carcinoid tumor is surgical resection though chemoradiation therapy has shown efficacy in the treatment of atypical subgroups (2).

The coexistence of tbc and carcinoid tumor is a rare occurrence in published reports (3). We present in this paper a case of bronchial carcinoid and loculated empyema in a patient with active tbc.

CASE REPORT

F.A. was a 59 year old male who was admitted in August 2008 with a chief complaint of productive cough of 7 months. He was treated 7 years earlier for pulmonary tbc and declared cured. He was a non smoker and had no other compliant or illness.

Physical examination on admission revealed findings consistent with fluid collection in the left chest.

Laboratory work-up included a chest radiograph, urine analysis, routine peripheral blood examination, and sputum analysis. Three sputum specimens were taken and found to be positive for acid fast bacilli. The chest radiograph was interpreted as showing a pleural fluid collection, pulmonary fibrosis and infiltrates on the left side (fig.1)

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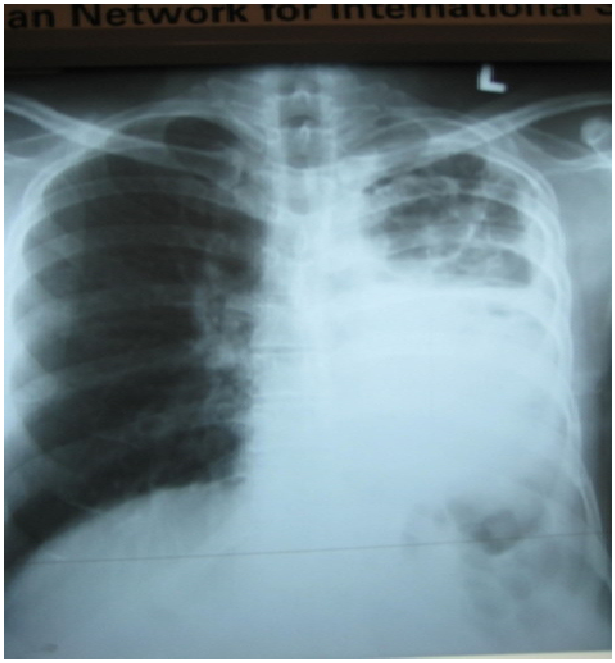

Fig.1: Chest radiograph of the patient showing pleural collection, pulmonary fibrosis and infiltrates on the left side.

A chest tube was inserted in the left pleural space with minimal drainage noted. The patient was then thought to have a loculated empyema. After 37 days of antitbc chemotherapy, a left thoracotomy was done with the intent of decortication and drainage of the empyema. The findings at thoracotomy included 500c.c. of pus within a thick peal of fibrous tissue and a lung that was fibrosed and destroyed. A left pneumonectomy was undertaken .On transecting the left main stem bronchus, a mass was found projecting into the lumen.

The specimen was sent to histopathologic analysis which revealed a gray white solid tumor mass measuring 5x5x4cm and arising from the lower lobe bronchus .The cut surface was gray white and solid with brown hemorrhagic areas. Histopathologic examination showed small round cells arranged in nests with fibrous septa consistent with the diagnosis of carcinoid tumor (fig.2).

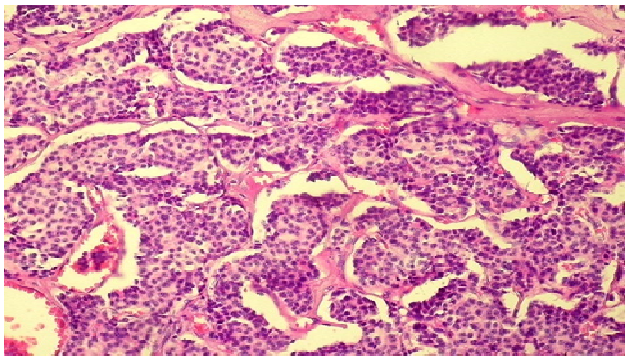

Fig.2: High power view of tumor showing features of a carcinoid tumor.

The patient made an uncomplicated recovery and returned to work 6weeks after his thoracotomy. He was advised to continue his anti tbc chemotherapy. At one year post operation he was in good health off all medications.

DISCUSSION

The authors Harpole and JInsberg in Sabiston and Shields texts, respectively attributed Kramer to describe neoplasms in the tracheao bronchial tree with less aggressive behavior than was seen in other commonly encountered neoplasms (1, 2). Harpole also attributed Pearse in 1968 to report cells with high amine content that gave insight to their origin (1).

Carcinoids comprise about 1-2% of all lung neoplasms and 85% of bronchial adenomas. They are equally distributed in both sexes (1, 2) and represent a spectrum of tumors arising from neuroendocrine cells of the bronchopulmonary epithelium with different malignant potential (1,6).

Previously, carcinoid tumors were not recognized to represent heterogeneous groups. However, subsequently they were determined to segregate into several distinct and well defined subgroups based on their histopathologic differences (1, 2, 7).

Neuroendocrinecarcinomas(NEC) reveal morphological, immunohistological, and ultra structural features that separate them into the following subgroups: Grade I NEC (Typical carcinoid), Grade II NEC (atypical carcinoid), Grade III NEC (large cell and small cell type). Each subgroup exhibits different biologic characteristics (2,6,9).

Patients often present with the triad of cough, hemoptysis, and recurrent infection (2). Most reports attribute pneumonia to be the common infection that may be antecedent to lung abscess (1,2,5,6). The patient presented was treated for tbc 7 years ago and had active tbc with empyema on his current hospitalization.

The frequency of active tbc in patients with cancer was reported to be 90 per 100,000 by Libshitz (3), and occurred at a nine times greater frequency than in a non-cancer population (3). Cancer of the lung coexists with pulmonary tbc in 1.9(4%) of the patients and since both entities present with similar symptoms, the correct diagnosis of both entities is understandably difficult and prolonged prior to thoracotomy (3). With carcinoid tumors representing a very small fraction of lung cancer

patients, the suspicion preoperatively of a carcinoid tumor must be a considerably remote consideration. The recommendation by Young WG and Moor GF is that all patients undergoing elective thoracotomy for tbc related indications should have preoperative bronchoscopy (4). This may have an added significance for the detection of carcinoid tumors as the distribution of carcinoids in the central bronchial tree has been noted to be 60 % (2).

The authors believe that this case is the first to have been reported from the University of Gondar hospital to have tuberculous empyema coexisting with an endobronchial carcinoid.

Currently, surgery is the only available curative treatment for carcinoid tumors of the lung (1,2,3,5,8). Surgical options range from parenchyma sparing procedures that include bronchotomy, sleeve resection, lobectomy, and pneumonectomy depending on the location of the tumor and the extent of paranchymal destruction in a particular patient (1,2,8).

In the case under discussion, given the extensive paranchymal destruction, pneumonectomy was considered to be the appropriate procedure for the patient.

Radiotherapy and chemotherapy have not been found to be effective in patients with carcinoid, except in those determined to be in the atypical subgroup where the regimen of chemotherapy applied in small cell lung cancer has been found to be effective in 50% of the cases (1, 2). Chemo radiation has also been found to be the mainstay of treatment in patients with small cell lung cancer (1, 2, 9).

Patients with surgically resected carcinoids generally run a benign course with a 5-year survival of more than 90%, with the typical type having the best prognosis (2).

In conclusion, carcinoids are rare tumors of the tracheobronchial tree. The coexistence of carcinoid with tbc is an even rarer occurrence. The similarity of presenting symptoms makes both diagnoses difficult and prolonged prior to thoracotomy. Routine preoperative bronchoscopy would substantially help with this problem. Surgical resection remains the sole modality for the treatment of most carcinoids and may range from bronchotomy to pneumonectomy depending on the location of the tumor, the extent of the tumor and the coexisting parenchymal destruction.

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