Atypical Bronchial Carcinoid Masquerading as Bronchial Asthma

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Abstract
A case study of 35-year-old woman with persistent breathlessness and wheezing that had been unsuccessfully treated with inhaled beta 2-agonists and steroids for about two years. Patient developed dry cough and haemoptysis, so investigated further. Spirometry demonstrated a restrictive pattern. Chest CT demonstrated well defined hyperdense lesion in right middle lobe. Biopsy taken from the mass during bronchoscopy demonstrated the picture of atypical bronchial carcinoid. In this case, due to the lack of awareness, diagnosis of carcinoid was delayed by two years.

Introduction
Carcinoid tumors are malignant neuro endocrine tumors arising from kulchitsky cell. Most common site of carcinoid tumors is GI tract (64%) next is being respiratory tract (28%). Bronchial carcinoids accounts for 1-2 % of all lung malignancies. Male and female are equally affected with mean age of presentation is 40 years.

It is a very slow growing tumor hence called “cancer in slow motion”. Bronchial carcinoids are frequently discovered as a lesion on a chest radiograph and 31% of the patients are asymptomatic. Based on microscopic appearance they are called typical carcinoid when less than two mitosis present after ten high power field examination and without areas of necrosis. Atypical carcinoids are diagnosed when more than ten mitosis detected after ten high power field examinations or by the presence of necrosis. WHO classification includes four general categories: typical carcinoid, atypical carcinoid, large cell neuroendocrine carcinoma, small cell carcinoma. Typical and atypical categories are not related to tobacco use but not the other two. Prognosis is excellent for typical carcinoids and poor for small cell carcinoma.

Case Report
A 35- year-old female admitted with breathlessness and wheezing for about two years, cough and 6 to 7 episodes of haemoptysis for two months. This wheezing had no correlation with physical exertion. She was treated as a case of Bronchial asthma with bronchodilators and steroids, both oral and inhaled.

On Physical examination patient was found to be moderately built and nourished, blood pressure was 130/80 mm Hg, Pulse rate was 86 per minute, Respiratory rate was 18 per minute. Breath sounds and vocal resonance were decreased over right axillary and infra-axillary areas. Bilateral wheeze noted. Patient’s skin showed suggestion of flushing though she was dark.

Hematological investigations revealed haemoglobin 9.2 gms/dl, total leucocyte count 12000 (P-66, L-30, E-4), platelet count 2 lac/cu.mm, ESR 8 mm at the end of one hour. Urea 34 mgs/dl, creatinine 0.9 mgs/dl, random blood sugar 112 mgs/dl.

Chest x-ray demonstrated a well defined opacity in the right lower zone (Figure 1). CT chest revealed a mass lesion involving Right middle lobe (Figure 2 and 3). Staging work up done. No evidence of distant metastasis detected.

Pulmonary function tests revealed restrictive pattern. Bronchoscopy revealed right sided endobronchial growth. Biopsied specimen demonstrated atypical carcinoid tumor by histopathological examination.

Patient underwent middle lobectomy (Figures 4). Histopathological examination of resected specimen confirmed atypical carcinoid tumor (Figure 5).

Discussion
Bronchial carcinoids accounts for 1-2% of primary lung tumors may be located centrally as endobronchial carcinoid and present asymptotically or produce wheeze, haemoptysis, post-obstructive pneumonitis. Peripherally located carcinoids occurs asymptotically or scarring in

Fig. 1: Preoperative CXR

Fig. 2: CT showing tumor

Fig. 3: CT showing tumor

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Received: 03.02.2014; Revised: 22.08.2014; Accepted: 23.09.2014
nature. Carcinoids may present as multiple tumorlets producing airway fibrosis leading to severe obstructive lung disease. All carcinoid tumors do not cause carcinoid syndrome. The reason is even though high level of neuropeptide and amine are synthesized they may not be released in enough high quantity or due to defective chemical nature. Clinical features of carcinoid syndrome includes flushing, watery diarrhea, wheeze, asthma-like symptom, pellagra-like skin lesion and retroperitoneal fibrosis, Peyronie’s disease commonly seen in those with liver metastasis or tumors outside the gastrointestinal tract like ovarian or lung carcinoids.

In chest X-ray bronchial carcinoids manifests as solitary pulmonary nodule or calcified nodule in 40%, infiltrations in 60% of cases. CT and somatostatin receptor scintigraphy localizes metastatic deposits in liver. MRI shows high signal intensity in T2 weighted images. Serum chromogranin-A level correlates with tumor bulk. Plasma NSE, platelet serotonin and urinary 5HIAA (typical carcinoid), 5HTP and 5HT (atypical carcinoid) supports the diagnosis.

Typical carcinoids are treated by surgical resection of tumour, atypical carcinoids require lobectomy and lymphnodal dissection. Cisplatin and etoposide based chemotherapy used in unresectable tumors. Liver metastasis treated by chemo embolisation using 5-fluorouracil, doxorubicin and cisplatin. Carcinoid syndrome is treated by octreotide or lantreotide and interferon alpha.

**Conclusion**

This case is a good example of masquerading of a rare disease as a common illness. Extended clinical diagnosis, including computed tomography and bronchoscopy, should be considered in all cases of bronchial asthma or chronic obstructive pulmonary disease which do not respond to standard treatment.

**References**