Case report:

A Case Report on Small Cell Carcinoma with Bilateral Vocal Cord Palsy and Superior Vena Cava Syndrome

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Abstract:

Small cell lung cancer (SCLC), previously known as oat cell carcinoma, is considered distinct from other lung cancers, which are called non-small cell lung cancers (NSCLC) because of their clinical and biologic characteristics. Small cell lung cancer is a neuroendocrine carcinoma that exhibits aggressive behavior, rapid growth, early spread to distant sites, excuisite sensitivity to chemotherapy and frequent association with distinct paraneoplastic syndromes, including syndrome of inappropriate secretion of antidiuretic hormone (SIADH), ectopic adrenocorticotropic hormone (ACTH) production and many others. Approximately 98% of patients with small cell lung cancer have a smoking history. Here, we report a case of small cell lung cancer in a 70-year-old male presenting to us with bilateral vocal cord palsy and superior vena cava syndrome.

Keywords: Small cell carcinoma, paraneoplastic syndrome, vocal cord palsy, superior vena cava syndrome

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Introduction:

Small cell carcinomas are the most malignant tumours of the lung and accounts for 20-25% of all cases. The WHO classification divides small cell carcinoma into three main types- a) Small or oat cell carcinomas characterized by a proliferation of cells with round or oval nuclei and scanty cytoplasm (high nuclear/ cytoplasmic ratio). These cells are about twice the size of lymphocytes, which they superficially resemble. b) The intermediate cell subtype, which contain cells less regular in shape with more abundant cytoplasm. There are some evidence that this subtype containing some large cells is more resistant to chemotherapy. c) A combined subgroup, which includes rare examples of small cell carcinoma containing areas of squamous carcinoma or adenocarcinoma[1]. Probably only about 1% of tumours fall into this category[2]. It is expected that they should be managed as small cell carcinoma and carry the same prognosis. Small cell carcinomas usually arise in central bronchi. They are often grouped with carcinoid tumours as they probably originate from common neuroendocrine precursor cells. Small cell carcinomas grow rapidly and metastasize early and widely; so that disease is rarely limited to the chest at necropsy. At presentation, two-thirds of patients have evidence of extensive disease. The most important clinical sites of metastases being the liver, central nervous system (CNS) and bone. Other frequent sites include the intrathoracic and intra-abdominal lymph nodes, adrenals and other abdominal organs.

Case History:

A 70 years old cultivator from Daudkandi, Comilla was admitted in Ibn Sina Medical College Hospital under Medicine unit-II on 22nd of October with the complaints of cough with sputum and breathlessness on exertion for last two years and hoarseness of voice for two months and aphonia for one week.

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According to the patient's statement, he was reasonably alright two years back. Since then he has been suffering from cough which is present throughout the day and night and is associated with mucoid sputum expectoration and occasional breathlessness but there is no history of passage of blood and chest pain. He also complains of hoarseness of voice for last two months which was gradually progressive and for last one week he was unable to produce any meaningful word. On query, he gives history of loss of appetite, weight loss, generalized weakness for last two months. He has no history of fever, sore throat, difficulty in deglutition, bodyache, seizure, headache, altered level of consciousness and contact with TB patient. With the above mentioned complaints he visited to a local physician and took treatment but his condition was not improved. So he has got himself admitted in Ibn Sina Medical College Hospital for better management. He is non-diabetic and normotensive and his bowel and bladder habits are normal. He did not suffer from any significant illness before. He lives with his wife and three sons and all of them are healthy. He is a smoker of 25 pack years and chews betel nut and betel leaf and he is non-alcoholic. He was treated with antibiotics, bronchodilators. He has no history of allergy to any foods or drugs. On general examination, patient is ill looking, face is puffy, not anaemic, non-icteric, pulse is 84/min, BP 120/80 mm Hg, JVP is raised and non-pulsatile, there is no lymphadenopathy and thyroid gland is not palpable. On systemic examination, patient's chest is barrel shaped, visible vein present on upper chest of the right side, right neck and right arm. Trachea is centrally placed, apex beat is normal in position, chest expansibility is reduced, vocal fremitus reduced on 2^{nd}-4^{th} intercostal space just lateral to the sternum on both side. Percussion note is dull on 2^{nd}-4^{th} intercostal space just lateral to the sternum on both side and hyper resonant on other areas. Breath sound is diminished on 2^{nd}-4^{th} intercostal space just lateral to the sternum and vesicular with prolonged expiration on other areas, rhonchi is present and vocal resonance reduced on 2^{nd}-4^{th} intercostal space just lateral to the sternum on both side. Other system examination reveals no abnormalities. The patient is provisionally diagnosed as bronchial carcinoma with superior vena caval obstruction with left recurrent laryngeal nerve palsy with some differentials including carcinoma of larynx with superior vena caval obstruction due to metastasis and lymphoma. Some investigations are done to reach the confirm diagnosis. Complete blood count shows Hb 12.2g/dl, ESR 40 mm in 1^{st} hour, total WBC count 6500/cmm; RBS 5.5 mmol/L, S. creatinine 1.39 mg/dl. CXR P/A view shows widening of superior mediastinum with extension to neck. Fibre Optic Laryngoscopy shows bilateral vocal cord paralysis (bilateral abductor paralysis) and CT guided FNAC reveals features suggestive of small cell undifferentiated carcinoma. So our confirmatory diagnosis is small cell carcinoma of lung with superior venacaval obstruction with bilateral recurrent laryngeal nerve palsy.

Discussion:

Hoarseness of voice is usually due to left recurrent laryngeal nerve palsy because developmentally this nerve has intrathoracic course which loops around the arch of aorta. But bilateral vocal cord paralysis due to both recurrent laryngeal nerve palsy is very rare. In this case there is extensive metastasis to lymph nodes of both sides of trachea up to thoracic inlet which produces huge widening of superior mediastinum on X-ray chest P/A view. This metastatic para tracheal lymph nodes of both sides produced mass effect on both recurrent laryngeal nerves as well as the superior vena cava, which has caused superior vena caval obstruction syndrome. So the provisional diagnosis was bronchial carcinoma with superior vena caval obstruction with left recurrent laryngeal nerve palsy and D/D were superior vene caval obstruction due to metastasis of laryngeal carcinoma and another was lymphoma which usually causes SVC obstruction but rarely causes recurrent laryngeal nerve palsy. Direct FOL excluded laryngeal carcinoma but included paralysis of both vocal cord (abduction). Because of abducted paralysis of both vocal cord there was stridor but he did not develop respiratory failure. Diagnosis was confirmed by doing CT guided FNAC, because of financial problem he could not afford to do bronchoscopy and CT scan of chest which could give information in details regarding extensiveness of the disease. Since small-cell tumours are centrally located, with mediastinal adenopathy[3], they account for the majority of cases of malignant SVC syndrome followed by squamous cell carcinoma, large-cell carcinoma and non-Hodgkin's lymphoma[4,5].

Chemotherapy is the standard mode of treatment of small cell carcinoma to be started early with or without radiation[6]. Here we started dexamethasone

for relief of pressure symptoms and patient was referred to National Institute of Cancer Hospital, Mohakhali for specific management.

Conclusion:

COPD lung is a very fertile land for the development of malignancy because of smoking. Small cell carcinoma and squamous cell carcinomas are common malignancies of COPD lung.

Approximately one-third of patients with lung cancer present with symptoms due to metastatic spread out of the thorax and skeletal metastasis, which are most commonly seen in small cell carcinoma. About 5-10% of patients may present with symptoms due to obstruction of the superior vena cava (SVC). Obstruction of the SVC is caused by either mediastinal lymph node metastases in case of small cell carcinoma or applying direct pressure by the tumour itself.

Conflict of interest: None

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