CASE REPORT

A CASE OF BRONCHIOLO-ALVEOLAR CARCINOMA PRESENTING AS MILIARY MOTTLING

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ABSTRACT: A 62 year male, diagnosed as a case of miliary tuberculosis and on treatment for the same, presented to the emergency department with chief complaint of gradually progressive breathlessness which had progressed from grade 1 MMRC to grade 4 MMRC over the last 3 months. X-ray chest was suggestive of miliary mottling. Patient had palpable left supra-clavicular lymph node. Lymph node biopsy showed metastases from Bronchiolo-Alveolar carcinoma-non mucinous type. Immunohistochemistry on lymph node biopsy was positive for cytokeratin 7(CK7) and Thyroid Transcription Factor 1(TTF1). Hence presenting this rare case of Bronchiolo-Alveolar carcinoma presenting as miliary mottling.

KEYWORDS: Bronchiolo-alveolar carcinoma, Miliary tuberculosis, Immunohistochemistry

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INTRODUCTION: Bronchioloalveolar cell carcinoma (BAC) presents in a variety of different radiological patterns. We report an unusual radiological presentation of BAC with miliary mottling.

CASE REPORT: A 62 year old non addict male farmer by occupation presented to the emergency with complaints of progressively increasing breathlessness over three months. It had progressed to difficulty in speaking sentences at the time of presentation. He had low grade fever and also complained of continuous hacking cough that was non-productive. On examination, he was afebrile with a respiratory rate of 48/min, pulse rate 140/min and blood pressure was 130/80 mm of mercury. On general examination, patient had a single supra-clavicular lymph node measuring 3x2x1 cm. On auscultation he had bilateral crackles. The patient's baseline oxygen saturation was 60% on room air, which improved to 90% on FiO₂ of 60% with venturi mask.

A chest radiograph was done prior to his visit to our hospital which showed bilateral extensive nodular shadows in both the lung fields with dense distribution in the hilar areas. (FIG 1) The previous hospital had started the patient on anti-tuberculosis treatment based on the chest radiograph and clinical findings for one month. At our hospital, induced sputum was negative for Acid Fast Bacilli.

CT thorax and CT abdomen with contrast was done for further evaluation of the patient.

CT thorax showed bilateral extensive nodular shadows in both lung fields with interlobular septal thickening. Three differential diagnoses were given by the radiologist-1) Acute respiratory distress syndrome 2) Bronchiolo-Alveolar carcinoma with lymphangitis carcinomatosa 3) Extensive pulmonary tuberculosis (FIG 2, 3). CT abdomen did not show any abnormality.

Fine needle aspiration of the lymph node was done. Cytology was suggestive of metastasis from the epithelial malignancy. Later a lymph node biopsy was done. Histopathological evaluation showed metastases from Bronchiolo-Alveolar carcinoma-non mucinous type. (FIG. 4).

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Immunohistochemistry on lymph node biopsy was positive for Thyroid Transcription Factor 1 (FIG 5) and cytokeratin 7 (FIG. 6).

Based on these investigations a diagnosis of bronchiolo-alveolar cell carcinoma, non-mucinous type was made. In view of poor performance status and stage IV malignancy, it was decided by the Oncologist to give the patient a trial of Gefitinib, a tyrosine kinase inhibitor. Patient has been on treatment for 4 months now and is able to perform daily activities and maintains a saturation of 93% on room air.

DISCUSSION: Bronchiolo-Alveolar carcinoma, now termed as lepidic predominant adenocarcinoma is a slow growing malignancy which can have varied presentations. The diagnosis of bronchiolo-alveolar carcinoma can often pose a challenge to physicians. Due to its slow growth and subtle symptomatology, diagnosis is often delayed. It is important to maintain a high index of suspicion to diagnose bronchiolo-alveolar carcinoma as early as possible. Bronchiolo- alveolar carcinoma is known to present with widely varying patterns on Computed Tomography (CT) such as (i) bubble-like lucencies of pseudocavitation associated with nodules of varying density, (ii) unifocal or multifocal ground-glass opacities, (iii) crazy paving, (iv) nodules and airspace opacities with unaffected vessels coursing through them and (v) lobar or multilobar consolidation and cavitating nodules, (vi) solitary or multiple pulmonary nodules, with and without air bronchograms. Isolated cases of BAC masquerading as tuberculosis have been reported in the literature previously also. , The nodules of BAC often have a centrilobular or bronchocentric location. While bronchogenic spread of tuberculosis can mimic multinodular BAC, miliary tuberculosis usually has a more random distribution of nodules. ,

In our case, the patient presented with severe hypoxemic respiratory failure and chest X-ray and CT chest showed miliary mottling without any evidence of a primary lung mass. We arrived at the diagnosis of bronchiolo-alveolar cell carcinoma by histopathology and immunohistochemistry done on lymph node biopsy. Diffuse and multi-centric growth pattern is a prominent feature of mucinous tumor, however it can also be seen in the non- mucinous type as seen in this case. 7 Significantly, this patient with stage IV lung malignancy responded dramatically to tyrosine kinase inhibitor and was able to pursue his activities of daily living after discharge.

CONCLUSION: In countries with a high prevalence of tuberculosis, it is not uncommon to start patients on anti- tuberculosis treatment based on chest X-ray findings alone. However, the rising prevalence of lung cancer and recent advances in its treatment point towards a need to diagnose lung cancer as early as possible.

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FIG. 1: CHEST X RAY showing bilateral extensive nodular shadows

FIG 2, 3= HRCT THORAX showing bilateral extensive nodular shadows with interlobular septal thickening.

FIG. 2

FIG. 3

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FIG. 4: Light microscopy (H & E) showing tumor cells

FIG. 5: Photomicrograph showing tumor cells stained positive for TTF1

FIG. 6: Photomicrograph showing tumor cells stained positive for CK7

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