

## An Unusual Presentation of Lung Adenocarcinoma

Princia Banu, Suman Jagaty, Kolla Madhuri, Pragyana Rout, Saswat Subhankar, C Mohan Rao\*

Department of Pulmonary Medicine, Kalinga Institute of Medical Science, Bhubaneswar, India

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\***Corresponding author:** C Mohan Rao. Department of Pulmonary Medicine, Kalinga Institute of Medical Science, Bhubaneswar, India.

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### ABSTRACT

Lung adenocarcinoma typically arises from the bronchial epithelium or bronchial glandular epithelium. A pathological picture of adenocarcinoma may display an acinar, papillary, micropapillary, lepidic, or solid growth, with either mucin or pneumocyte marker expression and it is usually located peripherally with pleural involvement. Their most frequent radiological pattern is ground glass pattern, solid nodules on chest CT scan. Primary lung cancer rarely presents as miliary mottling on chest x-ray. The miliary pattern shows numerous small nodules usually 1-3 mm in diameter in the lung with a sharp margin. The miliary pattern on chest radiography is usually found in disseminated tuberculosis, histoplasmosis, sarcoidosis, pneumoconiosis, bronchoalveolar carcinoma, or pulmonary siderosis. It can also be a sign of secondary metastasis to the lung from the thyroid, kidney. We report an unusual presentation of adenocarcinoma of lung presenting as bone marrow involvement.

**Keywords:** Lung; Papillary; Micropapillary; lepidic

### CASE REPORT

A 46 year old, non smoker, farmer, male patient came with the chief complaint of fever and dry cough for one month associated with loss of appetite and weight loss. On examination, the patient was conscious and oriented having a respiratory rate of 28/min, pallor present, lymphadenopathy, clubbing, odema nil. He was afebrile, pulse-90/min Blood pressure 118/76 mm hg, oxygen saturation 93% with room air. On auscultation, bilateral vesicular breath sound and fine inspiratory crepitations over bilateral infra scapular area, interscapular area, and infra axillary area were heard.

Abdomen –liver not enlarged, spleen not palpable kidneys not ballotable, no free fluid in the abdomen was observed both testis –normal size, no thyroid enlargement seen. Cardiovascular system – normal heart sounds other systems – normal.

Chest x-ray showed - bilateral miliary shadow. A blood hemogram showed hemoglobin-9.2, TLC-3400/cumm N-67%, lymphocyte-23% E-4%, M-6% C reactive protein-142, ESR-52. Other routine liver and renal biochemistry tests were normal. As a further evaluation HRCT thorax showed numerous nodular opacities with septal thickening seen in both

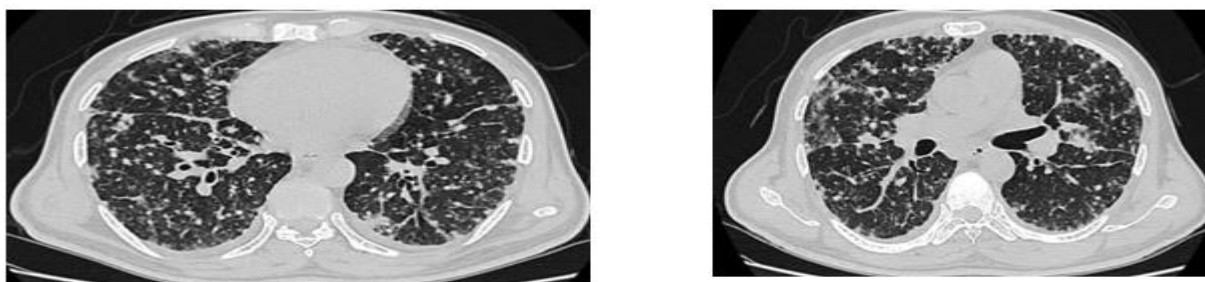
lungs along with s tree in bud appearance in some areas and surrounding ground-glass opacification, suggestive of miliary Tuberculosis. Sputum for AFB was negative for mycobacterium tuberculosis. The patient was started on empiric ATT on a clinical diagnosis of Smear Negative Pulmonary TB. But after initiation of ATT there was no clinical improvement, the patient gradually deteriorated and because of respiratory distress patient was shifted to intensive care unit and kept on oxygen support. Bronchoscopy was done which showed normal tracheobronchial tree and Bronchoalveolar lavage fluid cytology revealed lymphocytes and polymorphonuclear cell, no malignant cell, AFB smear study was negative. CT abdomen revealed no significant abnormality. Haematology consultation done in view of pancytopenia and advised bone marrow biopsy. Bone marrow biopsy was done which showed metastatic adenocarcinomatous deposit and immunohistochemistry marker for Adenocarcinoma of Lung was positive for TTF1 and Napsin A.

## DISCUSSION

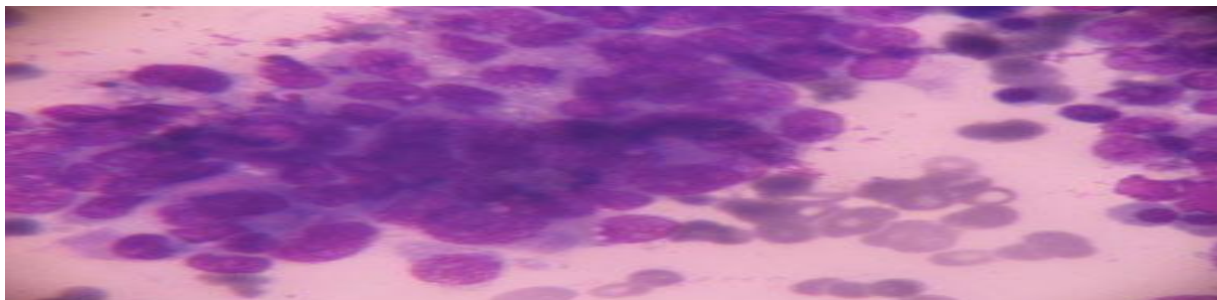
Lung cancer is one of the most frequently diagnosed cancer and the leading cause of cancer-related death.<sup>[1]</sup> Approximately 50% of cases are metastatic at the time of diagnosis and 60% of patients have microscopic or clinically evident metastasis at the time of primary tumor treatment.<sup>[1]</sup> The peak incidence age group is between 55 and 65 year and smoking is a well-established risk factor. It usually presents with cough and shortness of breath. In this case, the patient presented with fever and dry cough.<sup>[2]</sup> Fever usually doesn't occur but there are reported case series in which fever has been a presenting complaint. The patient had a miliary pattern of presentation in x ray, which is quite a rare presentation. After a detailed search of the literature review, we found a few cases where it had a miliary pattern of presentation and in which bone marrow infiltration was seen as metastasis from the Lung. Miliary nodules are oval or round-shaped 0.1-1cm nodules and are seen in chest radiography when they reach the size of 2-3 mm.<sup>[3,4]</sup> Miliary mottling on chest radiography is seen in miliary tuberculosis, sarcoidosis, silicosis, pneumoconiosis, varicella infection, histoplasmosis, and hemosiderosis. Adenocarcinomas with miliary mottling consist of 1% of all lung cancers and are seen mostly in non-smokers.<sup>[2]</sup> Usually, a bone marrow infiltration by malignant cells will have a profound effect on the peripheral blood picture which includes normocytic normochromic anemia, pancytopenia, and thrombocytosis or thrombocytopenia. But in our case also normocytic normochromic anemia and pancytopenia was present. This may be due to a recent infiltration of bone marrow. Trans thoracic Fine needle aspiration biopsy and bronchoscopic Transbronchial biopsy procedures are used in the diagnosis depending upon site of the pulmonary lesion. Chemotherapy are used in the treatment and EGRF-ALK mutation as immunohistochemistry tests are done for evaluation of treatment choice in such patients.<sup>[5,6,7]</sup>



**Figure 1:** (Chest Xray AP view shows Bilateral Miliary shadows in both mid zone and lower zone with sparing of apical areas).



**Figure 2:** CT images shows Bilateral tree in bud and centrilobular pattern in both lung fields.



**Figure 3:** Bone marrow aspirate showing metastatic tumor cells.

## CONCLUSION

The miliary pattern on x-ray has a range of diagnoses in which tuberculosis, histoplasmosis, sarcoidosis, pneumoconiosis, pulmonary siderosis, and bronchoalveolar carcinoma are mostly considered. Adenocarcinoma of the lung is rarely reported as a miliary shadow due to its intrapulmonary nature of metastasis but it should be considered as a possible alternate disease if other causes of miliary shadows in lung has been excluded specially in high prevalence of Tuberculosis in India.

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