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DECEPTIVE PRESENTATION OF PAPILLARY PREDOMINANT LUNG ADENOCARCINOMA : A CASE REPORT

Pathology

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ABSTRACT

We describe the radiologic and small biopsy pathologic findings of papillary predominant adenocarcinoma of the lung in a young non smoker patient and review the literature. The tumor appeared as miliary mottling on chest radiographs. Papillary predominant adenocarcinoma is a subtype of invasive adenocarcinoma demarcated by presence of papillary structures containing true fibro vascular cores which replaces the alveolar lining or existing within the alveolar spaces. The fibrovascular cores are lined by cuboidal to columnar neoplastic cells. Papillary predominant adenocarcinoma can be a diagnostic pitfall because of its deceptive clinical and radiological features that can mimic commoner non malignant conditions like tuberculosis in a prevalent third world country like India. We have shown the role of cytology and small biopsy findings based on H & E stain and applicability of newer WHO 2015 classification of lung cancer in early diagnosis of fatal pulmonary malignancy suitable for resource constraints countries.

KEYWORDS

Small biopsy; cytology; papillary predominant adenocarcinoma; miliary

Introduction:

We report a case of cytology and small biopsy diagnosis of papillary predominant adenocarcinoma of lung in a young adult male and discuss its clinico-radiological findings, histopathological diagnostic criterias, differential diagnosis, prognosis and follow up.

Case report :

A 25 years old working individual with no known co-morbidities presented at peripheral level hospital with complaints of non-productive cough and progressive shortness of breath for 01 month. He had history of 15 kgs loss of weight within a period of one month. He had complained of loss of appetite and gradually increasing generalized weakness. He was afebrile throughout the period and had no history of exposure to Kochs' patients or history of drug abuse. Patient was cook by trade became insidiously symptomatic after being posted to North-East region of the country. He was non-smoker and non-drinker. Chest X-ray done showed bilateral military shadowing in both lung fields. Based on clinical & radiological correlation diagnosis of "Miliary tuberculosis" was made and anti tubercular treatment (ATT) with HREZ daily regime was started.

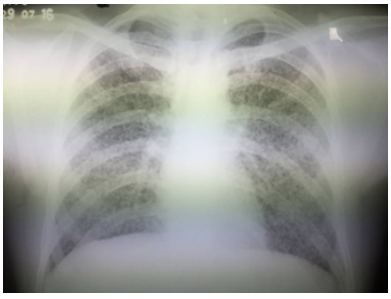

Figure 1. Chest X-ray: Bilateral military shadowing.

He was then transferred for further evaluation & management to a 492 bedded zonal level hospital and chest centre. On examination in zonal hospital he was found an averagely built individual who was symptomatic with MRC Grade-2 shortness of breath and chest auscultation revealed bilateral scattered crepitations and rhonchi. Other systemic examinations were unremarkable. His routine haematological and biochemical parameters were within normal limit. Sputum was found negative for Acid Fast Bacilli (AFB) and Gram stain showed no organisms. Mantoux test was found borderline positive (10 mm). Total serum IgE was found elevated to 1024U/L (Normal vaqlue>150U/L). He was found negative for HIV and Hepatitis B serology. USG thyroid and Thyroid function tests are within normal limit. Contrast Enhanced CT scan of chest showed multiple small cetrilobular nodular opacities in both lung. One 02 cm sized nodule was seen in anterior segment left upper lobe (LUL).

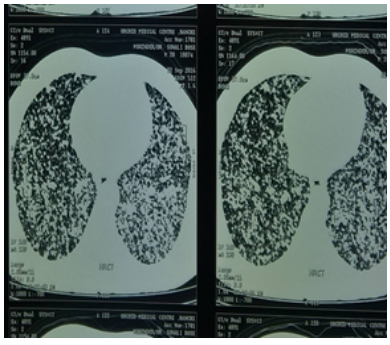

Figure 2 : . CECT chest : Multiple small cetrilobular nodular opacities

Based on the clinical and investigations the following provisional diagnosis were made :

1. Miliary tuberculosis
2. Hypersensitivity pneumonitis
3. Fungal pneumonias
4. Interstitial lung diseases

Spirometry done for the patient was suggestive of restrictive lung disease and 06 minute walk test showed desaturation with baseline 93% (Range : 87%-93%). On fibre optic bronchoscopy mucosal appearance apparently revealed no abnormality. Bronchioalveolar lavage was performed and transbronchial lung biopsy (TBLB) was taken.

Cytospin smears of 'Bronchoalveolar fluid' showed atypical cells in numerous glandular clusters in a clean mucoid background. Many of these cells forms three dimensional aggregate. These cells are regular small cells with ample cytoplasm with hyperchromatic, pleomorphic nuceli and prominent nucleoli. Many of the cells cytoplasm show vacuolation. Few chronic inflammatory cells are also seen. Based on the cytological appearance diagnosis of suggestive of adenocarcinoma was made.

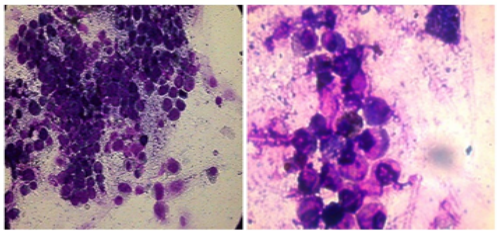

Figure 3. BAL fluid : MGG stain : Suggestive of adenocarcinoma.

On histopathological examination of 'TBLB' within the alveoli there are areas showing atypical cells arranged in acinar pattern. Focally papillary arrangement are seen. These atypical cells are arranged in sheets with abundant cytoplasm, atypical vesicular pleomorphic nuclei and prominent nucleoli. Scattered mitotic figures with areas of necrosis seen. Based on the findings diagnosis suggestive of adenocarcinoma with predominant papillary component was made.

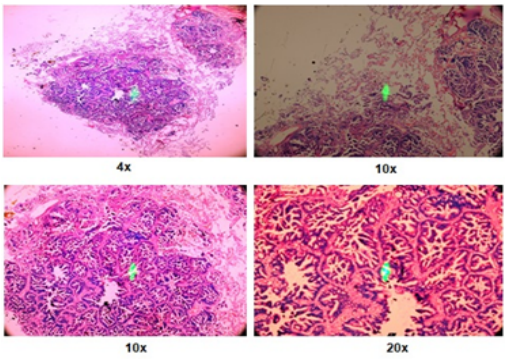

Figure 4 : TBLB : H & E stain : Suggestive of adenocarcinoma with predominant papillary component

Patient was then transferred to higher centre for further evaluation where he died while being evaluated. Post-mortem examination of lung tumour specimen was found to be exhibiting papillary predominant adenocarcinoma with EGFR negative mutations.

Discussion :

After WHO 2015 classification of lung cancer there is special provision made for small biopsy and cytology specimens. The present classification unlike previous WHO classifications emphasizes the use and amalgamation of immunohistochemical, histochemical and molecular techniques for specific targeted therapies. At the same time for low resource settings it also provided a simpler approach based on only H&E-stained slides.[1] Papillary predominant adenocarcinoma a rare variant of which shows a major component of a growth of glandular cells along central fibrovascular cores. This subtype is associated with intermediate prognosis. [2] It is reported to be showing solid nodule in CT scan examination which is different from other lung adenocarcinoma producing ground glass appearance. [3] It also commonly exhibits EGFR mutation.[4] Based on recent direction of using small biopsy and cytology specimens along with radiological and clinical data we have reported the present case in a peripheral set up.

Conclusion :

The case is an ideal example of atypical presentation and diagnostic pitfall of papillary lung adenocarcinoma because of its deceptive clinical and radiological features that can mimic prevalent non malignant conditions like tuberculosis in a third world country like India. Therefore biopsy and cytology specimen reporting should be done utilising available radiological and clinical output in resource constraint peripheral setup following present WHO 2015 guidelines for all suspicious cases.

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