Case Report

BIOMEDICAL Journal of Scientific & Technical Research

ISSN: 2574 -1241

DOI: 10.26717/BJSTR.2026.64.010064

A Rare Case of Lepidic Adenocarcinoma in its Pneumonic Form: From Diagnosis to Management

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ARTICLE INFO

Received: January 21, 2026

Published: January 29, 2026

Citation: Rebasy L, Ranaivoson HVR, Andriamihaja HRA, Rafitoharson NLE, Hasiniatsy NRE and Randrianjafisamindrakotroka NS. A Rare Case of Lepidic Adenocarcinoma in its Pneumonic Form: From Diagnosis to Management. Biomed J Sci & Tech Res 64(4)-2026. BJSTR. MS.ID.010064.

Introduction

Lepidic adenocarcinoma, formerly known as bronchioloalveolar carcinoma, is a well-differentiated adenocarcinoma. Its nonspecific clinico-radiological presentation in its pneumonic form makes it extremely difficult to diagnose, often leading to delayed diagnosis as reported in the litterature [1,2]. In Madagascar, with the progressive availability of diagnostic techniques in Pneumology, a first case of lepidic adenocarcinoma has been diagnosed. The aims were to report a case of organized pneumonia mimicking a lepidic adenocarcinoma and to demonstrate the diagnostic difficulty of this pathology.

Case Report

The patient was a 50-years-old male, non-smoker, without environmental respiratory exposures, with an history of severe SARS-Cov-2 pneumonia in 2021 with virological evidence. His symptomatology had started since the end of 2021 with a productive wet cough with bronchorrhea of about 500cc/24h associated with progressively worsening exertional dyspnea with oxygen desaturation at 87% in room air. The initial chest CT scan in January 2022 showed a left upper lobar alveolar condensation associated with multiple confluent nodules in the left lower lobe (Figure 1). No biological inflammatory syndrome was noted, and retroviral serology was non-reactive. He was treated with corticosteroids in initial doses of 1 mg/kg/day prednisolone equivalent, then in decreasing doses for 3 months, combined with probabilistic antibiotic therapy with amoxicillin-clavulanic acid, macrolides and quinolones. No clinical improvement was observed, prompting a first bronchoscopy, which revealed chronic inflammation of the bronchial mucosa. Bronchoalveolar lavage (BAL) cytology was poorly cellular, with polymorphic inflammatory cells. BAL bacteriology and GeneXpert of Mycobacterium tuberculosis were negative. Histology of bronchial biopsies revealed chronic non-specific inflammation. Long-term corticosteroid therapy was introduced in November 2022.

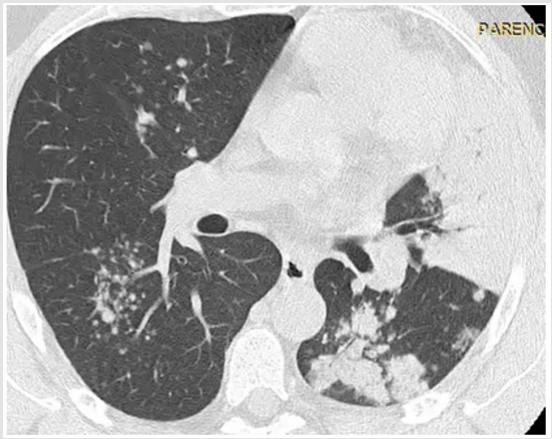
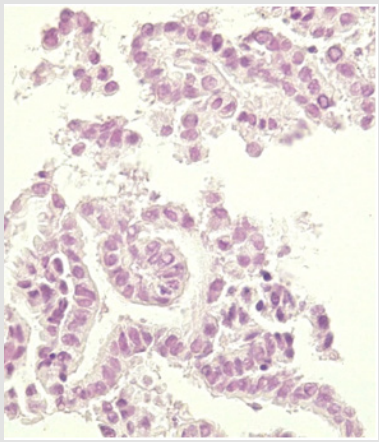


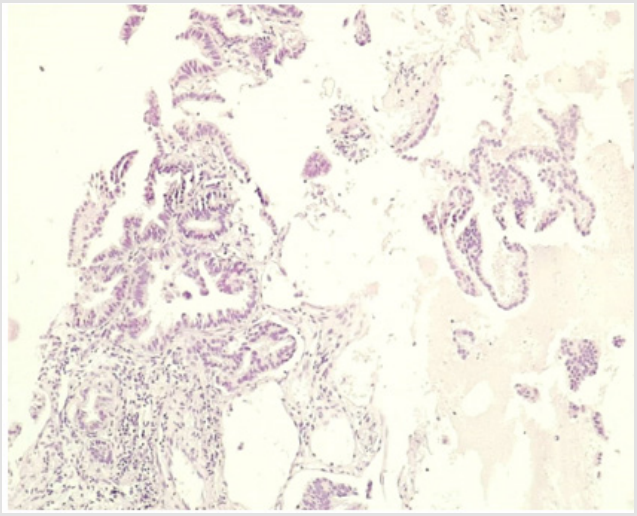
Figure 1: Chest CT scan showing a left upper lobar alveolar condensation associated with multiple confluent nodules in the left lower lobe.

In January 2023, after 3 months of corticotherapy, the patient was re-hospitalized for increased dyspnea. Biological tests showed an infectious syndrome. Cardiac ultrasonography revealed dilatation of the cardiac chambers, decreased right ventricular systolic function and moderate pulmonary hypertension related to an acute pulmonary heart disease. The thoracic CT scan performed in March 2023 showed increased left lower lobar condensation with early involvement of the contralateral lung. Probabilistic antibiotherapy with Ceftriaxone and Spiramycin was combined with an increase in corticotherapy to 1.5 mg/kg/day, then gradually reduced to 1 mg/kg/day over the long term. The evolution was marked by clinical improvement and disappearance of the infectious biological syndrome. A further worsening of dyspnoea occurred in October 2023, with an increase in diffuse alveolar-interstitial opacities occupying almost the entire left lower lobe, with significant diffusion into the right lobe in a chest CT scan. The second fibroscopy revealed a congestive mucosa more marked on the left. BAL cytology revealed inflammatory staging with clusters of atypical epithelial and glandular cells suspicious of malignancy, and bronchial biopsy pathology was consistent with inflammatory mucosa. A third bronchoscopy was not again contributory.

Respiratory decompensation in January 2024 prompted a left transthoracic biopsy. Histology revealed lung parenchyma with 85% glandular structures lined by unilayered epithelioma with enlarged, and hyperchromatic nuclei, without alveola spaces invasion (Figure 2). In places, and in juxtaposition with non-invasive pattern, there are a few irregular infiltrating glandular structures of acinar type situated in a desmoplastic chorion (Figure 3). As part of the extension work-up, a cerebro-abdominal-pelvic CT scan showed no secondary lesions. Palliative polychemotherapy with carboplatin - paclitaxel (CBDCA AUC 5 and taxol 175 mg/m2 D1 = D21) was started in March 2024. The respiratory course was favorable, with improvement in dyspnea until weaning from oxygen therapy, and radiological improvement.



Note: Pathology Department Joseph Ravoahangy Andrianavalona University Hospital.
Figure 2: Lepidic growth pattern, HE x 400.



Note: Pathology Department Joseph Ravoahangy Andrianavalona University Hospital.
Figure 3: Lepidic growth pattern, with invasive adenocarcinome. HE x 100.

Discussion

This is the first case of lepidic adenocarcinoma reported in Madagascar. This case illustrates the diagnostic difficulty of lepidic adenocarcinoma, given the non-specificity of its clinico-radiological presentation, which can mimic infectious pneumonia and organized pneumonia, leading to a diagnostic delay of almost 4 years since the onset of symptoms. It illustrates the role of transthoracic biopsy after repeated non-contributory bronchial biopsies. Lepidic adenocarcinoma can present as infectious pneumonia, heart failure and organized pneumonia, all of which were unresolved despite optimal treatment [1,2]. Radiologically, the pneumonic form of lepidic adenocarcinoma most often associates alveolar condensation with an aeric bronchogram, crazy-paving images and multiple nodules with a lower lobar predominance [3]. It is distinguished from infectious pneumonia by its non-resolving nature and unfavorable course, despite broad-spectrum antibiotic therapy [3]. On the other hand, organized pneumonia is a particular form of inflammatory reaction of the lung parenchyma, characterized by proliferation of myofibroblasts in the distal airspaces, without destruction of the surrounding lung parenchyma architecture [4].

The multi-focal, asymmetric and migratory nature of the alveolar condensations is characteristic of organized pneumonia on chest CT [4]. Organized pneumonia is evoked when infectious pneumonia fails to respond to broad-spectrum antibiotic therapy [4]. However, the response to corticotherapy is typical of organized pneumonia, which militated against this diagnosis in the present case after multiple courses of corticotherapy. The hypothesis of a lung cancer led to repeated bronchial fibroscopy. Given the absence of any endobronchial expression of the lesions seen on CT, apart from inflammatory and congestive aspects of the bronchi, the samples taken were non-contributory. Sub-echo guided trans-thoracic biopsy led to the diagnosis, and pathological examination of the specimens confirmed lepidic adenocarcinoma. In their study, Yang et al demonstrated the cost-effectiveness of this technique in the etiological investigation of pulmonary condensations of undetermined etiology [5].

Conclusion

Pneumonia that remains unresponsive and worsens despite a wide range of treatment options, including antibiotics and corticosteroids, should suggest a neoplastic cause, requiring more invasive investigations to make a definitive diagnosis. Transthoracic lung biopsy is recommended for the diagnosis of lepidic adenocarcinoma.

Statement Confirming Patient Consent

Conflicts of Interest Statement

No links of interest.

Funding Statement

No fund of statement.

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ISSN: 2574-1241

DOI: 10.26717/BJSTR.2026.64.010064

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