World Journal of Advanced Research and Reviews
eISSN: 2581-9615 CODEN (USA): WJARAI
Cross Ref DOI: 10.30574/wjarr
Journal homepage: https://wjarr.com/

(CASE REPORT)

# Pulmonary adenocarcinoma with lepidic growth pattern: A case report

Meriem EL MOUDEN *, Oussama Fikri, Mohamed Ijim and Lamyae Amro

*Department of Pulmonology, Mohammed VI University Hospital, LRMS Laboratory, FMPM, UCA, MARRAKECH, Morocco.*

World Journal of Advanced Research and Reviews, 2025, 27(01), 962-966

Publication history: Received on 30 May 2025; revised on 05 July 2025; accepted on 08 July 2025

Article DOI: https://doi.org/10.30574/wjarr.2025.27.1.2583

## Abstract

Pulmonary adenocarcinoma is a common subtype of non-small cell lung cancer (NSCLC) characterized by various growth patterns. The lepidic growth pattern, where neoplastic cells grow along the alveolar surfaces without invading the underlying stroma, is a distinct histological feature associated with a better prognosis. Early diagnosis and surgical intervention are crucial for improving outcomes.

This case highlights the importance of the lepidic growth pattern in pulmonary adenocarcinoma, emphasizing the need for thorough evaluation of imaging and histopathological characteristics. Recognizing such patterns can lead to prompt and appropriate management, thereby improving patient outcomes.

We report the case of an 85-year-old male patient, a former farmer with a history of recently cured pulmonary tuberculosis and ongoing follow-up for cutaneous T-cell lymphoma. He presented with a dry cough and stage III dyspnea according to the Sadou scale, with no associated thoracic signs. Clinical examination was stable, and radiological investigations revealed a lesion in the left lung with calcified micronodules. A transthoracic needle biopsy showed adenocarcinoma with a lepidic growth pattern. Management included wedge resection with lymph node dissection, with pathological examination confirming infiltrating acinar adenocarcinoma.

This case underscores the importance of early diagnosis and appropriate management of pulmonary cancers, even in patients with complex medical histories.

**Keywords:** Pulmonary Adenocarcinoma; Lepidic Growth Pattern; Wedge Resection; Early Diagnosis

## 1. Introduction

Pulmonary adenocarcinoma, representing about 40% of lung cancers, is often associated with a lepidic growth pattern, characterized by alveolar proliferation without significant stromal invasion. This type of carcinoma generally has a better prognosis than other more aggressive forms, making its early identification crucial for appropriate surgical management.

## 2. Case Report

This is the case of patient A.B., an 85-year-old former farmer who was previously treated for pulmonary tuberculosis and declared cured six months ago, with no recent tuberculosis exposure. He is hypertensive and under beta-blocker treatment (6.25 mg/day), and he has an undocumented heart condition for which he is taking Kardegic (160 mg/day). He is also being monitored for cutaneous T-cell lymphoma with Methotrexate. He presented with a dry cough associated with stage III dyspnea according to the Sadoul scale, without any other thoracic or extra-thoracic signs, notably no hemoptysis. This occurred in a context of apyrexia and preservation of general health.

* Corresponding author: M.EL Mouden

Clinical examination revealed: a conscious patient, alert (score: 15/15), stable hemodynamically and respiratory-wise: SaO2: 98% on ambient air, heart rate (HR): 86 bpm, respiratory rate (RR): 18 cpm, blood pressure (BP): 110/70 mmHg. The pleuro-pulmonary examination was unremarkable.

Chest CT (Figure 1) revealed a condensation focus in the left lung measuring 26 x 20 mm, characterized by an air bronchogram and irregular contours, with fissural and subpleural attachments. Additionally, calcified micronodules were noted in the right posterior basal subpleural area, measuring 3 mm.

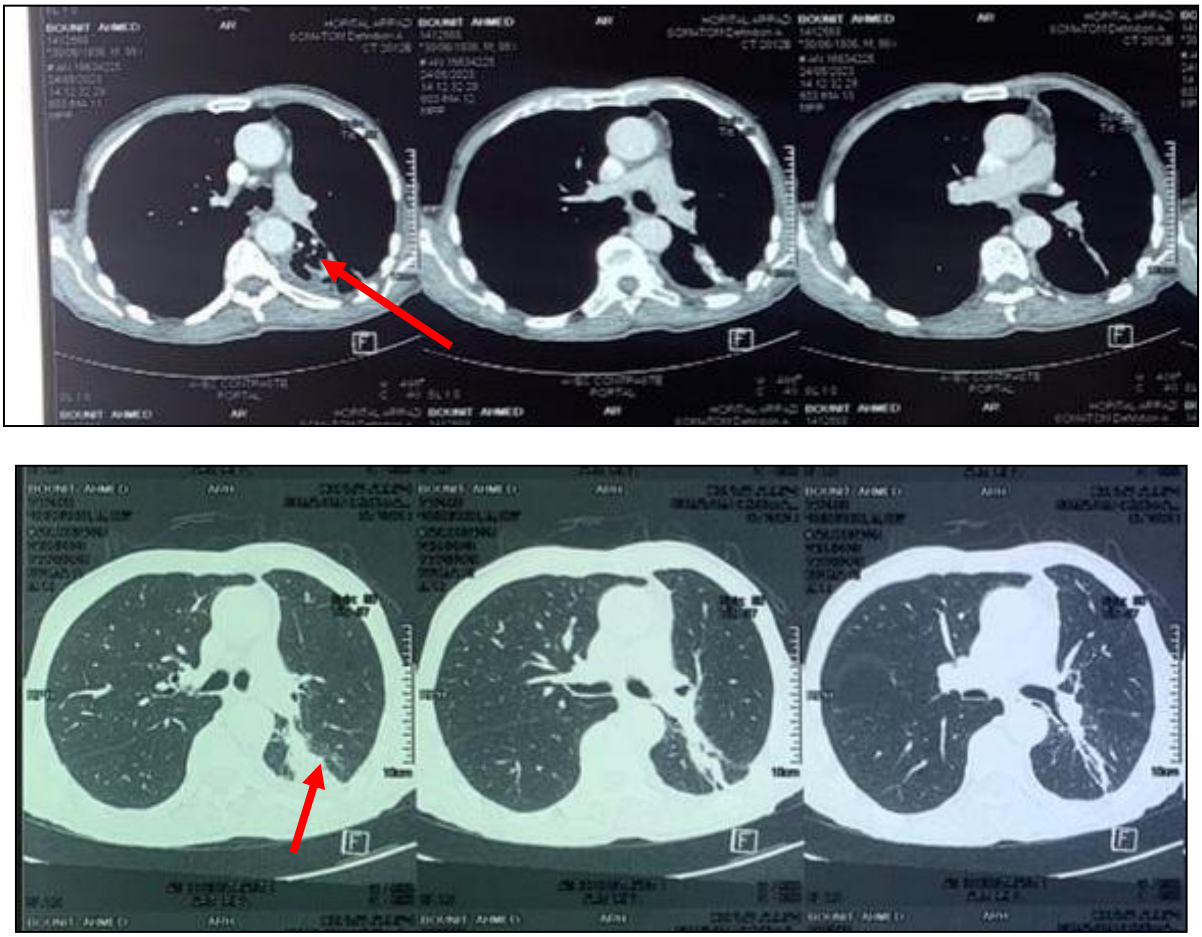

**Figure 1** Mediastinal and parenchymal cuts showing a condensation focus in the left Fowler area measuring 26 x 20 mm, with an air bronchogram, irregular contours, and a fissure and subpleural attachment

The patient underwent a transthoracic needle biopsy, revealing a morphological appearance of an adenocarcinoma with a lepidic growth pattern, without signs of invasion or desmoplastic stroma.

The staging evaluation, including an abdominal-pelvic and brain CT scan, showed no abnormalities. The patient subsequently underwent a left WEDGE resection with lymphadenectomy.

**Figure 2** Image showing the surgical specimen

The pathological examination of the surgical specimen revealed an infiltrating acinar pulmonary adenocarcinoma measuring 6 mm with a lepidic component measuring 20 mm.

The postoperative radiological and clinical evolution was favorable (figure 3).

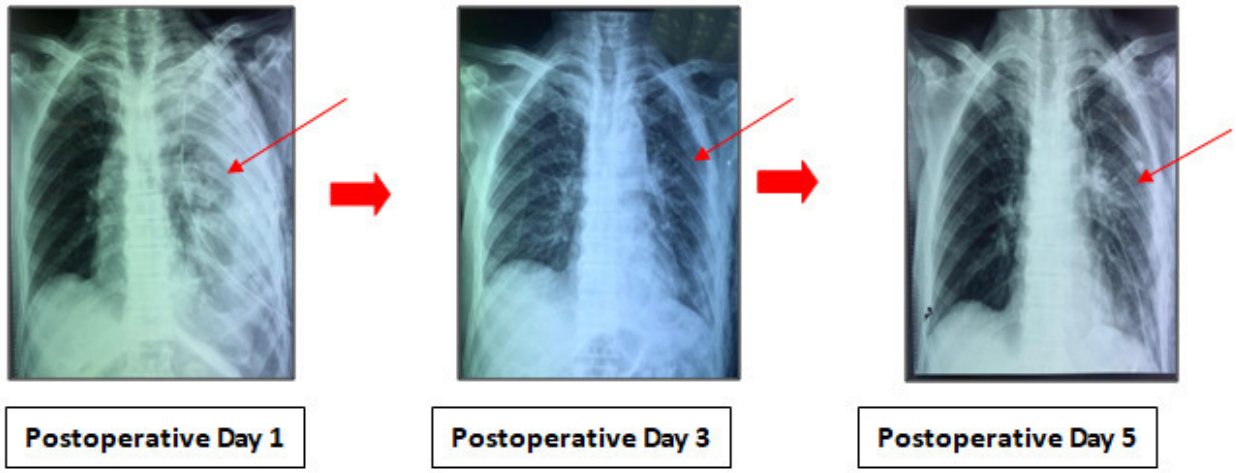


**Figure 3** Radiological images showing the postoperative evolution, resulting in significant radiological clearance by Day 5

## 3. Discussion

Pulmonary adenocarcinoma with a lepidic growth pattern is an important entity in thoracic oncology, presenting specific clinical and histopathological characteristics. This discussion highlights various aspects of this pathology, including its epidemiology, clinical manifestations, histopathological diagnosis, management, and future perspectives.

Pulmonary adenocarcinoma is the most common type of lung cancer, accounting for approximately 40% of all cases. Its incidence is rising significantly, particularly among non-smokers and women [1] [2]. Risk factors include smoking, exposure to carcinogens (such as asbestos and air pollution), and medical histories such as tuberculosis, which can influence the development of pulmonary lesions [3].

Symptoms of adenocarcinoma with a lepidic pattern are often non-specific, making early diagnosis challenging. Patients may present with symptoms such as cough, dyspnea, and chest pain, which are also observed in other pulmonary diseases [4]. In the case of our patient, stage III dyspnea and a history of tuberculosis complicate clinical assessment, necessitating further investigations.

Histopathological examination is crucial for establishing the diagnosis. In our case, the biopsy revealed adenocarcinoma with a lepidic growth pattern, characterized by tumor cells lining the alveoli without stromal invasion. This lack of invasion is a positive indicator, suggesting a less aggressive behavior [5] [6]..The use of immunohistochemical markers such as TTF-1 and Napsin A is common to confirm the diagnosis and exclude other pathologies, such as tuberculosis or granulomatous infections [7].

Management of lepidic pattern adenocarcinoma is primarily surgical. Wedge resection, as performed for our patient, has shown promising results, with studies indicating that patients with a lepidic pattern have improved survival rates [8] [9]. The absence of stromal invasion in our case is a favorable prognostic factor. However, it is important to monitor these patients, as recurrences can occur even in the absence of obvious signs of malignancy.

Current research focuses on the underlying molecular mechanisms of adenocarcinomas with a lepidic pattern. Identifying predictive biomarkers, as well as developing targeted therapies, could transform patient management [10] [11]. A personalized medicine approach, integrating the molecular characteristics of tumors, could also enhance clinical outcomes.

## 4. Conclusion

Pulmonary adenocarcinoma with a lepidic growth pattern presents a challenge in oncology, requiring accurate clinical and pathological assessment. Early diagnosis and appropriate surgical intervention can significantly improve patient prognosis, underscoring the importance of a comprehensive understanding of this entity.

## Compliance with ethical standards

### *Disclosure of conflict of interest*

No conflict of interest to be disclosed.

### *Statement of informed consent*

Informed consent was obtained from all individual participants included in the study.

## References

[1] Travis WD, Brambilla E, Burke AP, et al. "WHO Classification of Tumours of the Lung, Pleura, Thymus and Heart." 4th Edition, IARC, 2015.

[2] Torre LA, Siegel RL, Jemal A. "Global cancer statistics, 2016." CA: A Cancer Journal for Clinicians, 2016. DOI: 10.3322/caac.21332

[3] Mao Y, et al. "Epidemiology of lung cancer." The Lung, 2017. DOI: 10.1007/s00408-017-9982-2

[4] Rusch VW, et al. "Lung Cancer: Current Diagnosis and Management." American Journal of Respiratory and Critical Care Medicine, 2017. DOI: 10.1164/rccm.201607-1483CI

[5] Gomez D, et al. "Histological Patterns in Lung Adenocarcinoma: Clinical Relevance and Prognostic Significance." Histopathology, 2019. DOI: 10.1111/his.13801

[6] Müller AM, et al. "Histological patterns in lung adenocarcinoma: clinical relevance and prognostic significance." Histopathology, 2018. DOI: 10.1111/his.13410

[7] Barker R, et al. "Immunohistochemical Markers in Lung Adenocarcinoma: A Review." Archives of Pathology & Laboratory Medicine, 2015. DOI: 10.5858/arpa.2014-0356-RA

[8] Furukawa K, et al. "Lepidic Growth Pattern in Lung Adenocarcinoma: Implications for Surgical Resection." Lung Cancer, 2019. DOI: 10.1016/j.lungcan.2019.03.018

[9] Hida T, et al. "Prognostic Factors in Lung Adenocarcinoma with Lepidic Growth Pattern." Japanese Journal of Clinical Oncology, 2018. DOI: 10.1093/jjco/hyy032

[10] Cagle PT, et al. "Pathology of Lung Cancer." Cancer Journal, 2018. DOI: 10.1097/PPO.0000000000000376

[11] Eberhard DA, et al. "BRAF mutations in lung adenocarcinomas." Clinical Cancer Research, 2005.DOI: 10.1158/1078-0432.CCR-04-1102