

A rare case of angiosarcoma presenting as pleuro-pulmonary metastasis: A case report



Abi G¹, Pugazhendhi S², Padamati Advytha³, Nalini Jayanthi Nagesh⁴

^{1,3}Postgraduate Resident, ²Assistant Professor, ⁴Professor and Head, Department of Respiratory Medicine, SRM Medical College Hospital and Research Centre, Chennai, Tamil Nadu, India

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ABSTRACT

Angiosarcoma is an uncommon yet highly aggressive tumor originating from vascular endothelial cells, accounting for <2% of all sarcomas. Pulmonary involvement is often due to metastasis and presents with non-specific respiratory symptoms, leading to frequent misdiagnosis and delays in treatment. We report a case of a 74-year-old male with progressive breathlessness and recurrent hemoptysis. Imaging studies revealed multiple nodular deposits in the pleura and lung parenchyma. Histopathological and immunohistochemical analyses confirmed the diagnosis of metastatic angiosarcoma. This case underscores the significance of early recognition and histopathological confirmation in patients presenting with unexplained respiratory distress. A high index of suspicion is essential for timely diagnosis and intervention.

Key words: Angiosarcoma; Pulmonary metastasis; Hemoptysis; Pleural nodules; Histopathology

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INTRODUCTION

Angiosarcoma is a rare malignancy originating from vascular endothelial cells and constitutes about 2% of all soft tissue sarcomas.¹ It is notorious for its rapid progression, early metastasis, and resistance to treatment, making early diagnosis crucial.² While angiosarcomas can arise in various body regions, primary pulmonary angiosarcoma is exceptionally rare.³ Pulmonary involvement is typically a result of metastasis from other primary sites, but due to overlapping clinical features with other lung conditions, it is frequently misdiagnosed.⁴ There have been cases where patients initially received a diagnosis of pulmonary embolism based on imaging findings, only to later confirm angiosarcoma through further investigation⁵.

CASE REPORT

A 74-year-old male presented to the hospital with progressively worsening breathlessness over 10 days. His symptoms also included episodes of hemoptysis, with multiple instances of coughing up small amounts of blood. The patient had no history of smoking or alcohol consumption but was under treatment for coronary artery disease.

On physical examination, diminished breath sounds were noted in the lower left lung field. Percussion revealed dullness in the same region. Chest X-ray shows left-sided pleural effusion (Figure 1). A pleural tap was performed, yielding hemorrhagic fluid with lymphocyte predominance. The pleural fluid analysis showed an adenosine deaminase level of 44 and a lactate dehydrogenase level of 315, while

Address for Correspondence:

Dr. Pugazhendhi S, Assistant Professor, Department of Respiratory Medicine, SRM Medical College Hospital and Research Centre, Chennai, Tamil Nadu, India. **Mobile:** +91-9176879989. **E-mail:** pugazhtamizh9@gmail.com

cytology identified hemorrhagic elements with reactive mesothelial cells but no malignancy.

Further high-resolution computed tomography (CT) chest imaging showed multiple nodules scattered throughout both lungs, along with an enlarged heart and left-sided pleural effusion (Figure 2). A CT-guided biopsy of the lung lesions revealed malignant spindle-shaped cells, consistent with angiosarcoma. Immunohistochemical analysis confirmed positivity for CD-31 (Figure 3), CD-34 (Figure 4), and vimentin (Figure 5), with a negative result for pan-CK. Positron emission tomography-CT (PET-CT) scans identified hypermetabolic lesions in the left lung, multiple pleural nodules, and a lytic lesion in the left seventh rib, confirming metastatic spread (Figures 6 and 7).

DISCUSSION

Pulmonary metastases from angiosarcoma are difficult to diagnose due to their non-specific presentation.¹ These tumors originate from the vascular endothelium and spread

through the bloodstream, resulting in significant pulmonary involvement.² The presence of malignant cells in the pulmonary circulation can cause damage to blood vessels,

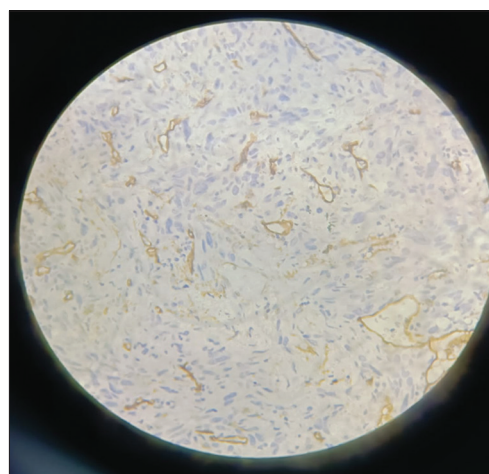


Figure 3: CD 31 positive

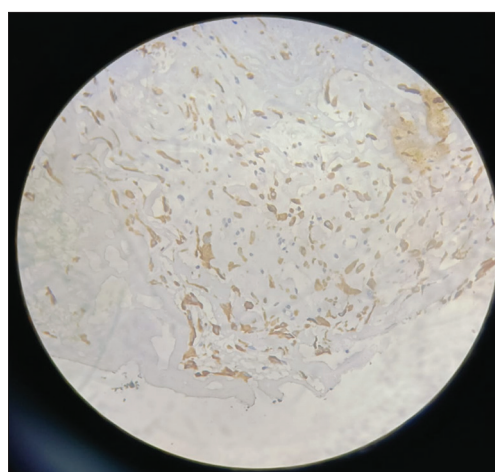


Figure 4: CD 34 positive

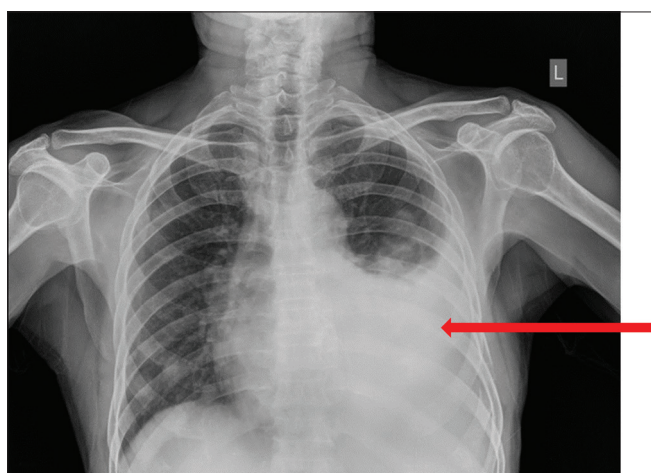


Figure 1: Chest X-ray showing left-sided pleural effusion



Figure 2: High-resolution computed tomography chest showing multiple pulmonary metastasis

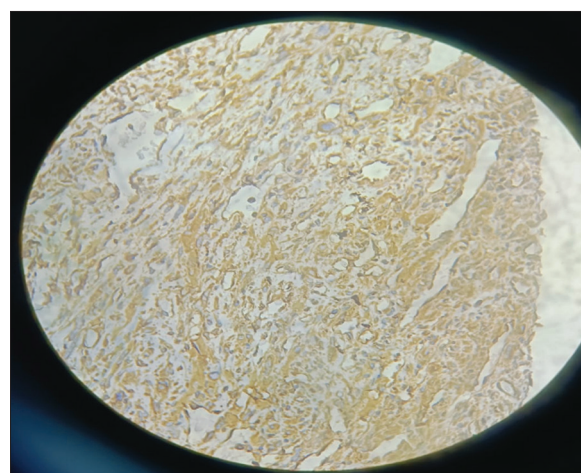


Figure 5: Vimentin positive

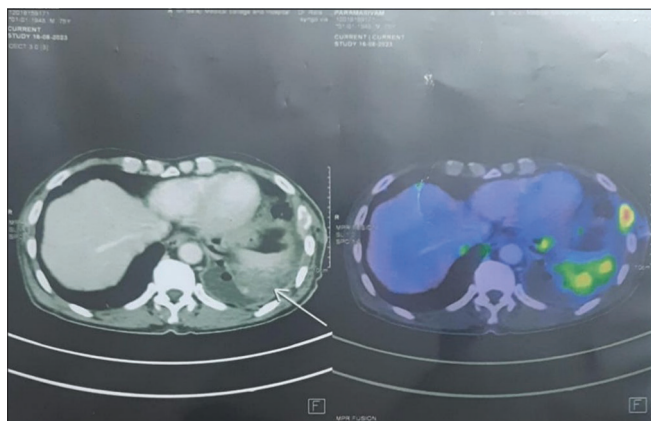


Figure 6: Positron emission tomography-computed tomography image

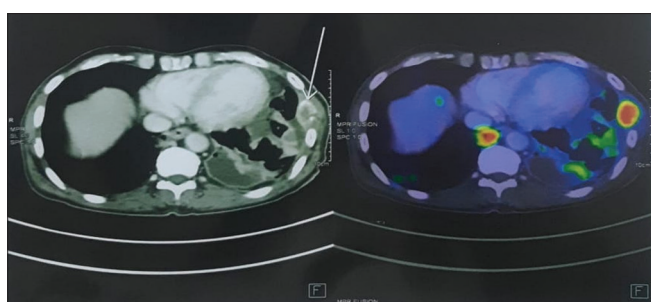


Figure 7: Positron emission tomography-computed tomography image showing multiple pleural, parenchymal nodules and lytic lesion seen in the 7th lateral rib

leading to complications such as pulmonary embolism, hemoptysis, and respiratory distress.³

A definitive diagnosis requires histopathological confirmation, as imaging alone often mimics other conditions; including thromboembolism and pneumonia.⁴ Immunohistochemical markers, such as CD-31 and CD-34 help differentiate angiosarcoma from other malignancies, making biopsy essential for confirmation.⁵

The prognosis for angiosarcoma remains poor due to its resistance to chemotherapy and the lack of standardized treatment protocols.⁶ Surgical intervention is usually not an option because patients present at advanced stages.

Although chemotherapy with agents, such as doxorubicin has been attempted, responses remain variable. There is growing interest in targeted therapies and immunotherapies, though their effectiveness is still under evaluation.⁶ Advanced imaging techniques such as PET-CT can aid in monitoring disease progression and optimizing treatment strategies.

CONCLUSION

Pulmonary involvement in angiosarcoma presents significant diagnostic challenges due to its non-specific symptoms and radiological similarities to other conditions. Early recognition, followed by histological confirmation, is vital for accurate diagnosis and timely intervention. This case highlights the need for heightened clinical suspicion when evaluating patients with unexplained hemoptysis and progressive respiratory symptoms.

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AG- Prepared first draft of manuscript, implementation of study protocol, manuscript preparation and submission of article; **PS-** Concept, design, manuscript preparation, editing, and manuscript revision; **PA-** Design of study interpretation; **NNJ-** Review manuscript.

Work attributed to:

SRM Medical College Hospital and Research Centre, Chennai, Tamil Nadu, India.

Orcid ID:

Dr. Abi G - <https://orcid.org/0009-0000-4136-3009>

Dr. Pugazhendhi S - <https://orcid.org/0000-0002-2370-0726>

Dr. Padamati Advytha - <https://orcid.org/0009-0009-8254-2754>

Dr. Nalini Jayanthi Nagesh - <https://orcid.org/0000-0002-4672-0578>

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