

Incidental Rasmussen's Aneurysm on CT Pulmonary Angiography Performed for Acute Dyspnea: A Radiological Diagnosis with Clinical Correlation

A Mourchad^{1*}, I Akhiyat¹, Pr Bouktib¹, Pr. El Hajjami¹, Pr. Boutakioute¹, Pr. Ouali¹, Pr. Idrissi¹

¹Radiology Department, Arrazi Hospital, University Hospital Center, Cadi Ayyad University, Marrakesh, Morocco

DOI: <https://doi.org/10.36347/sasjm.2026.v12i05.004>

| Received: 09.03.2026 | Accepted: 25.04.2026 | Published: 01.05.2026

*Corresponding author: A Mourchad

Radiology Department, Arrazi Hospital, University Hospital Center, Cadi Ayyad University, Marrakesh, Morocco

Abstract

Case Report

Rasmussen's aneurysm is a rare but potentially life-threatening vascular complication of pulmonary tuberculosis, caused by inflammatory erosion of a pulmonary artery branch adjacent to a tuberculous cavity. Its diagnosis relies primarily on imaging, particularly CT pulmonary angiography (CTPA), which is often performed in emergency settings for suspected pulmonary embolism. We report the case of a 66-year-old man admitted for acute dyspnea and oxygen desaturation. CTPA excluded pulmonary embolism and revealed imaging signs of right heart failure with pulmonary hypertension, which explained the patient's clinical presentation. Incidentally, a small Rasmussen's aneurysm was identified adjacent to a left apical cavitary lesions, along with parenchymal findings suggestive of active pulmonary tuberculosis. This case emphasizes the key role of CT angiography in detecting rare vascular complications of tuberculosis and highlights the importance of clinicoradiological correlation to distinguish incidental findings from the actual cause of symptoms.

Keywords: Rasmussen's aneurysm; Pulmonary tuberculosis; CT pulmonary angiography; Incidental finding; Pulmonary artery; Cavitary lung disease.

Copyright © 2026 The Author(s): This is an open-access article distributed under the terms of the Creative Commons Attribution 4.0 International License (CC BY-NC 4.0) which permits unrestricted use, distribution, and reproduction in any medium for non-commercial use provided the original author and source are credited.

INTRODUCTION

Pulmonary tuberculosis remains a major public health issue, particularly in endemic regions. While its parenchymal manifestations are well known, vascular complications are uncommon and frequently underrecognized. Rasmussen's aneurysm corresponds to a pseudoaneurysmal dilatation of a pulmonary artery branch resulting from inflammatory destruction of the arterial wall adjacent to a tuberculous cavity [1,2].

It is classically associated with hemoptysis, which may be massive and life-threatening. However, with the increasing use of CT pulmonary angiography, Rasmussen's aneurysm may also be detected incidentally during imaging performed for other clinical indications, such as suspected pulmonary embolism [3]. Early recognition remains important because of the potential risk of rupture, even when the aneurysm is asymptomatic.

CASE PRESENTATION

A 66-year-old man, a former heavy smoker who had stopped smoking 12 years earlier, was initially hospitalized for etiological assessment of high-protein ascites associated with splenomegaly. During hospitalization, he developed sudden acute dyspnea accompanied by tachycardia and oxygen desaturation to 87% on room air. Given this acute presentation, pulmonary embolism was suspected, and an emergency CT pulmonary angiography was requested.

Imaging Findings

CT pulmonary angiography showed no evidence of endoluminal thrombus within the pulmonary arteries, thereby excluding acute pulmonary embolism. However, several imaging features suggestive of right heart failure and pulmonary arterial hypertension were observed (figure 2), including dilatation of the main pulmonary artery, enlargement of the right cardiac chambers and bilateral pleural effusions. These findings were considered sufficient to explain the patient's acute respiratory symptoms. In addition, parenchymal lung abnormalities were identified, including a thick-walled

cavitary lesion in the left upper lobe apex, associated with bilateral cylindrical and cystic bronchiectasis predominantly involving the upper lobes (figure 3).

Adjacent to the left apical cavity, a small saccular aneurysmal dilatation arising from an apical segmental branch of the left pulmonary artery was noted

(figure 1). This lesion demonstrated contrast enhancement synchronous with the pulmonary arterial phase, consistent with a Rasmussen's aneurysm. Subsequent etiological investigations confirmed active pulmonary tuberculosis based on positive bacteriological results.

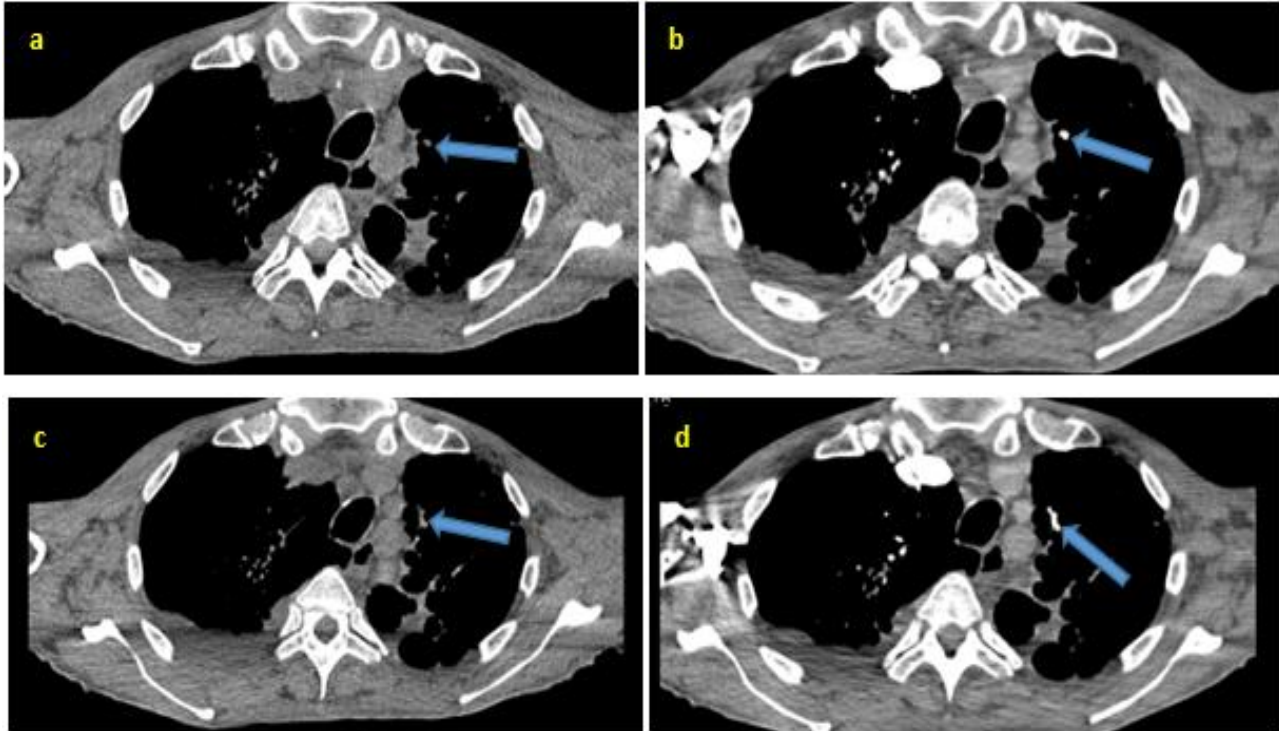


Figure 1: CT pulmonary angiography Mediastinal window without (a, c) and with intravenous contrast (b, d, e, f) showing a small saccular aneurysmal dilatation arising from an apical segmental branch of the left pulmonary artery demonstrating contrast enhancement synchronous with the pulmonary arterial phase (arrow), consistent with a Rasmussen's aneurysm

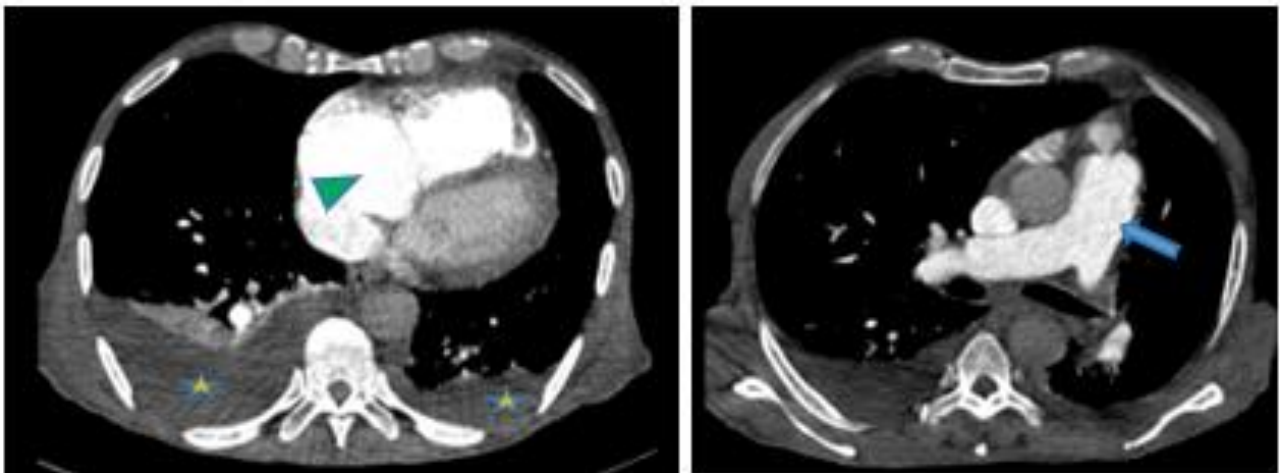


Figure 2: CT pulmonary angiography Mediastinal window with intravenous contrast showing dilatation of the main pulmonary artery (arrow), enlargement of the right cardiac chambers (arrowhead) and bilateral pleural effusions (asterisk)

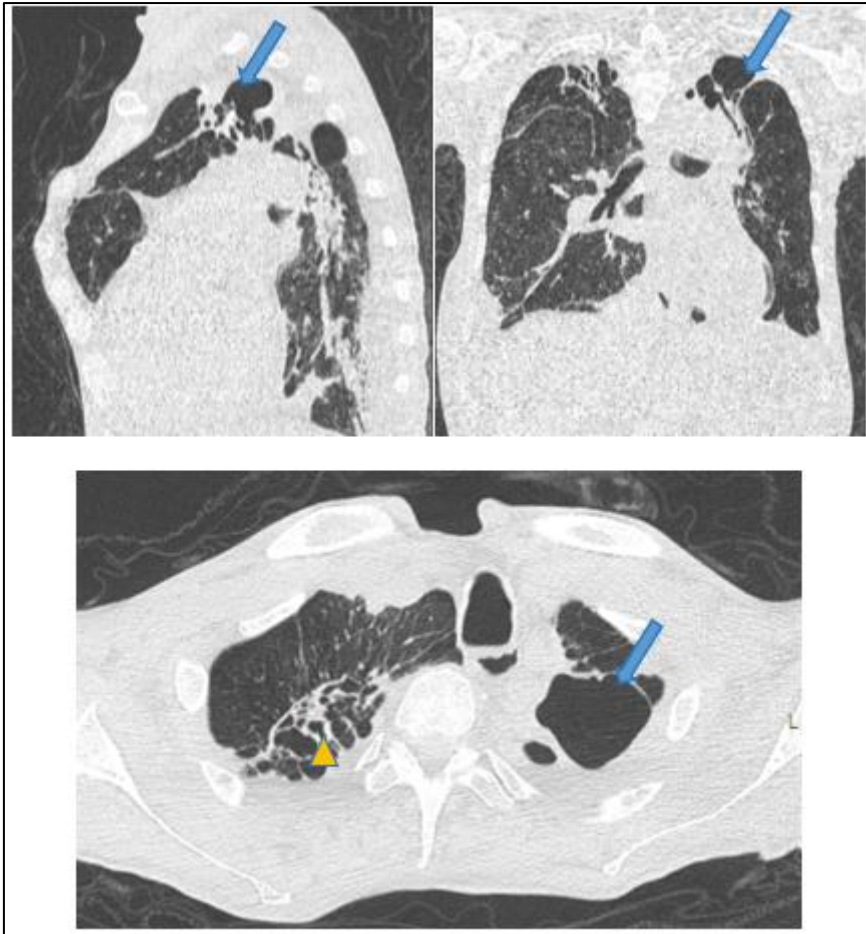


Figure 3: CT pulmonary angiography lung window showing a thick-walled cavitary lesion in the left upper lobe apex (arrow), associated with bilateral cylindrical and cystic bronchiectasis predominantly involving the upper lobes (arrow head)

DISCUSSION

Rasmussen's aneurysm is a rare complication of pulmonary tuberculosis, with a reported prevalence of less than 5% among patients with chronic cavitary disease [4]. It results from the extension of granulomatous inflammation to the adjacent pulmonary arterial wall, leading to progressive weakening and pseudoaneurysm formation [5].

Although classically associated with hemoptysis, Rasmussen's aneurysm may remain clinically silent and be discovered incidentally, particularly with the widespread use of CT pulmonary angiography in emergency settings [6]. In the present case, the aneurysm was small and showed no signs of rupture or active bleeding. Importantly, the patient's acute dyspnea was attributable to right heart failure and pulmonary hypertension rather than to the aneurysm itself.

CT pulmonary angiography is the imaging modality of choice for diagnosing Rasmussen's aneurysm, as it allows comprehensive evaluation of the pulmonary arteries, lung parenchyma, and cavitary lesions in a single examination [7]. It is also essential for

therapeutic decision-making, especially when endovascular embolization is considered, which represents the treatment of choice in symptomatic or high-risk aneurysms [8].

Differential diagnoses include bronchial artery aneurysms and pulmonary arteriovenous malformations, underscoring the importance of careful analysis of enhancement timing and vascular anatomy.

CONCLUSION

Rasmussen's aneurysm is a rare but potentially serious vascular complication of cavitary pulmonary tuberculosis. CT pulmonary angiography plays a pivotal role in its diagnosis, often revealing the lesion incidentally during evaluation for other suspected conditions. This case highlights the necessity of accurate clinicoradiological correlation to correctly identify incidental findings and to determine the true etiology of clinical symptoms, thereby guiding appropriate patient management.

Conflict of Interest: The authors declare no conflict of interest.

REFERENCES

1. Picard C, Parrot A, Boussaud V, *et al.*, Rasmussen's aneurysm: a forgotten cause of hemoptysis. *Eur Respir J.* 2017;49(6):1601987.
2. Kim Y, Lee KS, Jung KJ, *et al.*, Pulmonary artery aneurysms in patients with active or healed tuberculosis: CT findings. *AJR Am J Roentgenol.* 2019;213(3): W104–W112.
3. Sirajuddin A, Mohammed TL. Aneurysms of the pulmonary artery. *Semin Roentgenol.* 2020;55(2):94–102.
4. Khalil A, Soussan M, Mangiapan G, *et al.*, Rasmussen aneurysm: diagnosis and endovascular treatment. *Diagn Interv Imaging.* 2021;102(4):229–236.
5. Restrepo CS, Carswell AP. Aneurysms and pseudoaneurysms of the pulmonary vasculature. *Radiographics.* 2022;42(2): E45–E62.
6. Bommart S, Cron C, Leblanc M, *et al.*, Pulmonary artery pseudoaneurysm: diagnosis and endovascular management. *Eur J Radiol.* 2023; 162:110782.
7. Revel MP, Parkar AP, Prosch H, *et al.*, Pulmonary CT angiography: current status and future directions. *Eur Radiol.* 2024;34(1):12–25.
8. Panda A, Bhalla AS, Sharma R. Endovascular management of pulmonary artery pseudoaneurysms: experience and outcomes. *CVIR Endovasc.* 2025;8(1):14.