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A Rare Association of Interstitial Lung Disease, Esophageal Dilatation, and Pulmonary Aspergillomas in Systemic Sclerosis: A Case Report

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Abstract | **Case Report**

Systemic sclerosis is a complex autoimmune disease responsible for diffuse involvement of connective tissue, belonging to the group of connective tissue disorders. It is characterized by cutaneous and vascular fibrosis and may affect multiple organs, particularly the lungs and the digestive system. It is a rare disease. We report the case of a 56-year-old patient with systemic sclerosis in whom a chest CT scan revealed pulmonary fibrosis associated with abnormal esophageal dilatation. The examination also demonstrated two lesions suggestive of pulmonary aspergillomas. This case highlights the value of chest CT in identifying respiratory complications of connective tissue diseases, as well as the possibility of fungal superinfection in an already fibrotic lung.

Keywords: Systemic sclerosis- pulmonary aspergilloma- pulmonary fibrosis.

INTRODUCTION

Systemic sclerosis is a complex autoimmune disease responsible for diffuse involvement of connective tissue and belonging to the group of connective tissue disorders. It is characterized by cutaneous and vascular fibrosis and may affect multiple organs, particularly the lungs and the digestive system. Although rare, interstitial lung involvement in systemic sclerosis represents one of the leading causes of mortality in these patients, while esophageal involvement related to motility disorders is also a common digestive manifestation of the disease [1,3,6].

Changes in lung architecture caused by fibrosis promote colonization by microorganisms, particularly fungi such as *Aspergillus*, leading to the formation of aspergillomas [3].

CASE PRESENTATION

This is a 56-year-old female patient followed in our department for systemic sclerosis, presenting with chest pain and dyspnea evolving over several weeks, associated with hemoptysis. A chest CT scan was performed and revealed:

- Fibrosing interstitial lung disease with peripheral microcystic formations in both lungs, arranged in layers giving a honeycomb appearance, predominantly at the lung bases, with traction bronchiectasis and subpleural reticulations (Figure 1).
- Diffuse esophageal dilatation measuring approximately 21 mm (Figure 2).
- Two intracavitary lesions located in the right apical region and right lower lobe, of soft-tissue density, non-enhancing after contrast injection, mobile in dependent position, consistent with pulmonary aspergillomas (Figures 3 and 4).

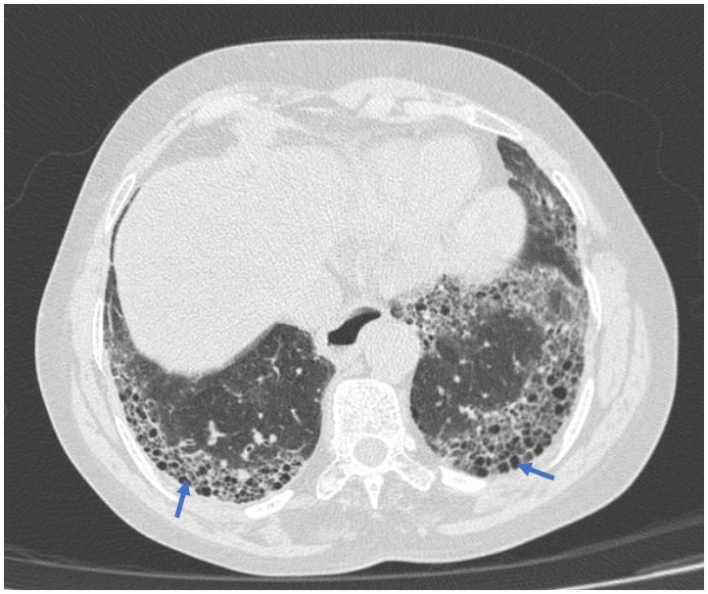

Figure 1: Axial CT scan in lung window showing bilateral fibrotic changes (blue arrow)

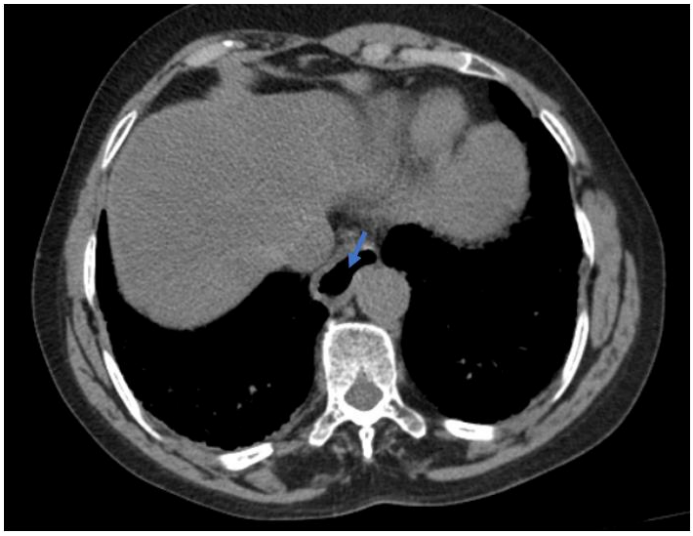

Figure 2: Axial CT scan showing esophageal dilatation (blue arrow)

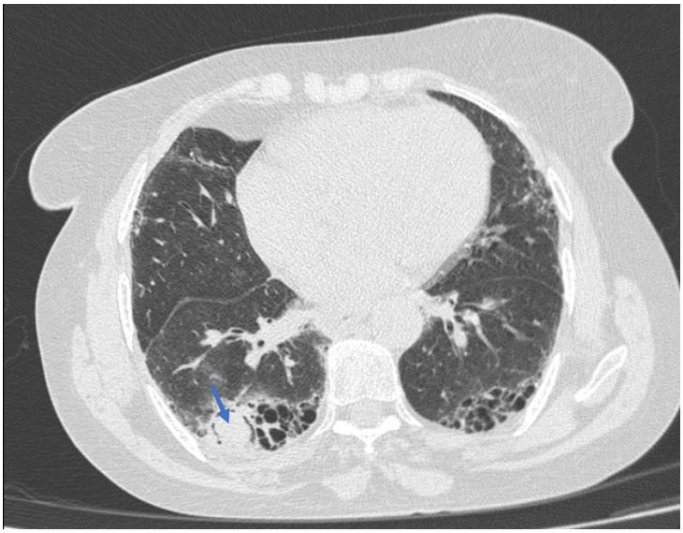

Figure 3: Axial CT scan in lung window showing a right intracavitary lesion (blue arrow)

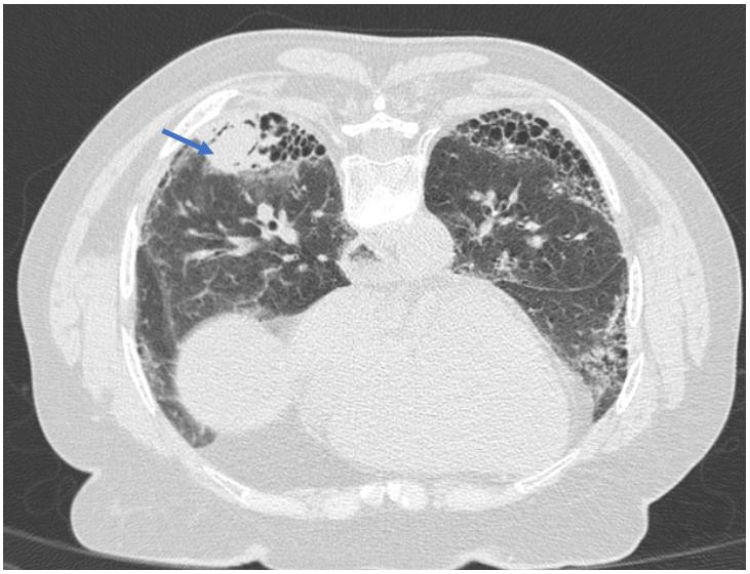

Figure 4: Axial CT scan in lung window in prone position showing mobility of the right intracavitary lesion (blue arrow)

DISCUSSION

Systemic Sclerosis is a systemic autoimmune disease affecting connective tissue, arterioles, and microvessels, characterized by fibrosis and vascular occlusive phenomena. Pulmonary involvement in this disease is mainly dominated by interstitial lung disease (ILD) and pulmonary arterial hypertension. The association of fibrosing ILD with esophageal dilatation complicated by aspergilloma remains rare and poorly reported in the literature, which gives particular interest to our observation [2,7].

Interstitial pulmonary involvement results from an inflammatory and fibrosing process affecting the pulmonary interstitium, progressively leading to impaired gas exchange and chronic respiratory failure. Progression toward extensive pulmonary fibrosis constitutes a poor prognostic factor [1].

Chest computed tomography (CT) plays a central role in the diagnosis and follow-up of ILD associated with systemic sclerosis. The most frequently described abnormalities include ground-glass opacities, subpleural and basal reticulations, traction bronchiectasis, as well as honeycombing in advanced stages. In our observation, thoracic imaging demonstrated diffuse interstitial lesions associated with fibrotic pulmonary changes, suggestive of ILD [1].

Gastrointestinal involvement is also frequent in systemic sclerosis, with the esophagus being the most commonly affected digestive organ. Imaging may demonstrate diffuse esophageal dilatation with an air-fluid level. This esophageal dilatation is highly suggestive of systemic sclerosis and represents an indirect sign on thoracic radiological assessment [8].

Pulmonary fibrosis creates a favorable environment for aspergillus colonization. Aspergillomas correspond to colonization by *Aspergillus* species within preexisting pulmonary cavities [5,7]. In the context of systemic sclerosis, several mechanisms may promote this complication, including pulmonary architectural distortion secondary to fibrosis, traction bronchiectasis, impaired mucociliary clearance, and immunosuppression related to immunosuppressive therapies. Aspergilloma classically appears as a dependent intracavitary mass separated from the cavity wall by an air crescent sign. The main differential diagnoses include cavitary lung neoplasm, pulmonary abscess, and active cavitary tuberculosis [5,6,8].

Our observation therefore highlights the major value of multimodal thoracic imaging in the assessment of systemic manifestations of systemic sclerosis. Chest CT enabled not only the identification of ILD lesions and esophageal dilatation, but also the characterization of the associated pulmonary aspergilloma. This rare association should be recognized by radiologists and clinicians in order to avoid diagnostic delay and optimize therapeutic management.

CONCLUSION

This case highlights the importance of careful analysis of chest CT scans in patients with systemic sclerosis, particularly of the lung parenchyma and the esophagus.

Pulmonary fibrosis provides a favorable environment for the development of aspergillomas, which may arise within pre-existing honeycomb structures and traction bronchiectasis due to excessive fibrotic processes, requiring appropriate monitoring.

REFERENCES

1. Travis WD, Costabel U, Hansell DM, King TE Jr, Lynch DA, Nicholson AG, *et al.,* An official American Thoracic Society/European Respiratory Society statement: Update of the international multidisciplinary classification of the idiopathic interstitial pneumonias. Am J Respir Crit Care Med. 2013;188(6):733–748. doi:10.1164/rccm.201308-1483ST.
2. Rakotoson JL, Vololontiana HMD, Raherison RE, Andrianasolo R, Rakotomizao JR, Randria MJD, Rapelanoro RF, Andrianarisoa ACF, Rajaona HR. Un cas rare d'aspergillome volumineux développé au sein d'une fibrose pulmonaire secondaire à une sclérodermie systémique chez une patiente immunocompétente à Madagascar. *Bull Soc Pathol Exot*. 2011; 104:325-328. doi:10.1007/s13149-011-0141-9
3. Denning DW. Chronic pulmonary aspergillosis. Eur Respir J. 2016 ;47(1) :45–68. doi :10.1183/13993003.00583-2015.
4. Kousha M, Tadi R, Soubani AO. Pulmonary aspergillosis: a clinical review. Eur Respir Rev. 2011 ;20(121) :156–174. doi :10.1183/09059180.00001011.
5. Awatif El Hakkouni *et al.,* L'aspergillose pulmonaire invasive chez un patient immunodéprimé séropositif pour le VIH. Journal médical panafricain. 2018 ;31 :40. doi : 10.11604/pamj.2018.31.40.16637
6. Sauleda J, Núñez B, Sala E, Soriano JB : Idiopathic pulmonary fibrosis: epidemiology, natural history, phenotypes. Med Sci (Basel). 2018, 6:10.3390/medsci6040110
7. Roeser A, Brillet PY, Boubaya M, Caux F, Dhote R, Nunes H, Uzunhan Y. Patterns of progression of interstitial lung disease associated with systemic sclerosis. Revue des Maladies Respiratoires Actualités. 2025 Jan;17(1):31–32. doi: 10.1016/j.rmra.2024.11.080