02. Pulmonary Artery Pseudoaneurysm Following Necrotizing Pneumonia after Autologous Stem Cell Transplantation: A Case Report

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Background: Pseudoaneurysms, also known as false aneurysms, result from disruption of the arterial wall, leading to blood extravasation contained by surrounding tissues rather than the vessel wall itself. Unlike true aneurysms, they do not involve all three layers of the arterial wall and instead typically form a pulsatile hematoma communicating with the arterial lumen. Pulmonary artery pseudoaneurysms represent an uncommon subset, most often arising secondary to trauma, iatrogenic injury, or infection, but may also occur in the context of inflammatory lung disease, vasculitis, malignancy, or necrotizing pulmonary processes. **Case:** A 65-year-old woman with a history of Sjögren syndrome, rheumatoid arthritis, and β-thalassemia was diagnosed with peripheral T-cell lymphoma, T-follicular-helper subtype, stage IIIB. She received six cycles of CHOP chemotherapy [Cyclophosphamide: 750 mg/m² IV (d1), Doxorubicin: 50 mg/m² IV (d1), Vincristine: 1.4 mg/m² IV (max 2 mg) (d1), Prednisone 100 mg PO (d1–5)], and subsequent positron emission tomography-computed tomography (PET-CT) demonstrated a Deauville score (DS) of 3, consistent with a favorable metabolic response. Five months after the end of first line treatment, at regular follow up, a repeated PET-CT revealed relapsed disease. Salvage chemotherapy with 3 cycles of ESHAP [Etoposide: 40–60 mg/m² IV (d1–4), Methylprednisolone: 500 mg IV (d1-5), Cytarabine: 2 g/m² IV (d5), Cisplatin: 25 mg/m² IV (d1-4)] was administered, followed by autologous peripheral blood stem cell transplantation. Post-transplant complications included febrile neutropenia and Staphylococcus aureus bacteremia complicated by necrotizing pneumonia (Figure 1a). After targeted antibiotic therapy, she was discharged on day +40 in improved clinical condition. On day +47, a follow-up chest computed tomography (CT) demonstrated partial resolution of pulmonary infiltrates with residual cavitary lesions. Notably, a 9 mm lesion within a consolidation in the anterior segment of the right upper lobe was identified, suggestive of a pulmonary artery pseudoaneurysm arising from a segmental branch (Figure 1b). Endovascular coil embolization was successfully performed (Figure 1c). The pseudoaneurysm was considered secondary to an inflammatory process in the setting of necrotizing pneumonia. The patient remains in complete remission 5 years post-transplant, in excellent clinical condition.

Conclusion: Pulmonary artery pseudoaneurysms represent a rare but potentially life-threatening complication of necrotizing pulmonary infections, particularly in immunocompromised patients such as those undergoing stem cell transplantation, where angioinvasive pathogens can lead to vascular wall destruction. This case highlights the importance of maintaining a high index of suspicion and performing timely radiological evaluation to enable early diagnosis and prompt endovascular management.

Key Words: Aneurysm, False; Pneumonia, Necrotizing; Pulmonary Artery; Bone Marrow Transplantation (Source: MeSH-NLM).

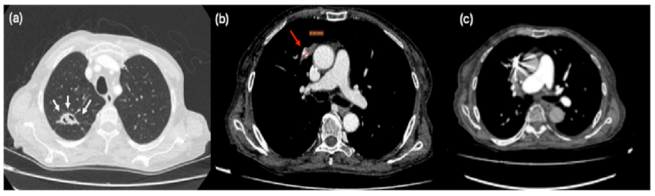

Figure 1. (a) chest computed tomography (CT) demonstrating consolidative changes in the right upper lobe with areas of cavitation (white arrows), consistent with necrotizing pneumonia (b) contrast-enhanced CT showing a well-defined, contrast-filled focal outpouching within a consolidation in the anterior segment of the right upper lobe (red arrow), consistent with a pulmonary artery pseudoaneurysm, of 9 mm arising from a segmental branch (c) follow-up CT after endovascular treatment demonstrating metallic coil material at the site of the previously identified pseudoaneurysm.

ISSN 2076-6327

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