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"Empyema necessitatis caused by *Actinomyces meyeri*"

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A 62-year-old male smoker (60 pack/year) with chronic alcohol abuse, hypertension, dyslipemia and deep vein thrombosis presented with a left pectoral mass and constitutional symptoms (weight loss, asthenia, hyporexia) for 1 month. Examination revealed a 10cm erythematous, firm left pectoral mass and poor dental hygiene. Blood test showed leukocytosis (23.000/mm3) and elevated C-reactive protein (22,90mg/dl). Imaging showed left upper lobe consolidation with chest invasion(*Figure1.A-D*). Ultrasound-guided aspiration isolated *Actinomyces meyeri* and *Peptostreptococcus micros*, prompting intravenous amoxicillin/clavulanic acid (A/C) (2g/200mg 8h). A subsequent purulent collection*(Figure1.E),* yielded *Enterococcus faecium,* required drainage and linezolid (600mg/12h) for 10 days along

with A/C. After 3 weeks of intravenous A/C, the patient was discharged on oral A/C (875/125mg 8h) for 8 months(*Figure 1.F*). Empyema necessitatis is a rare complication characterized by suppurative extension from the thoracic cavity into extrathoracic tissues without respecting anatomical barriers. Most common cause is *Mycobacterium tuberculosis*, followed by *Actinomyces species*[1]. Actinomyces are commensal, filamentous Gram-positive organisms causing opportunistic infections (actinomycosis) following mucosal disruption[1,2,3]. Risk factors include middle-aged men, immunocompromised, diabetes, chronic alcohol use, trauma, periodontal disease…[1]. Diagnosis mandates histopathological/microbiological confirmation via tissue sampling (bronchoscopy or percutaneous-needle aspiration). Prolonged penicillin-based regimens (3-6 weeks intravenous, followed by 6-12 months oral) are first-line, with surgery reserved for diagnostic uncertainty or complications[1,3].

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Informed consent

The authors confirm that they have obtained all consents required by applicable law for the publication of any personal data or images of patients, research subjects or other people used in materials submitted to Elsevier.

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Figure and legend:

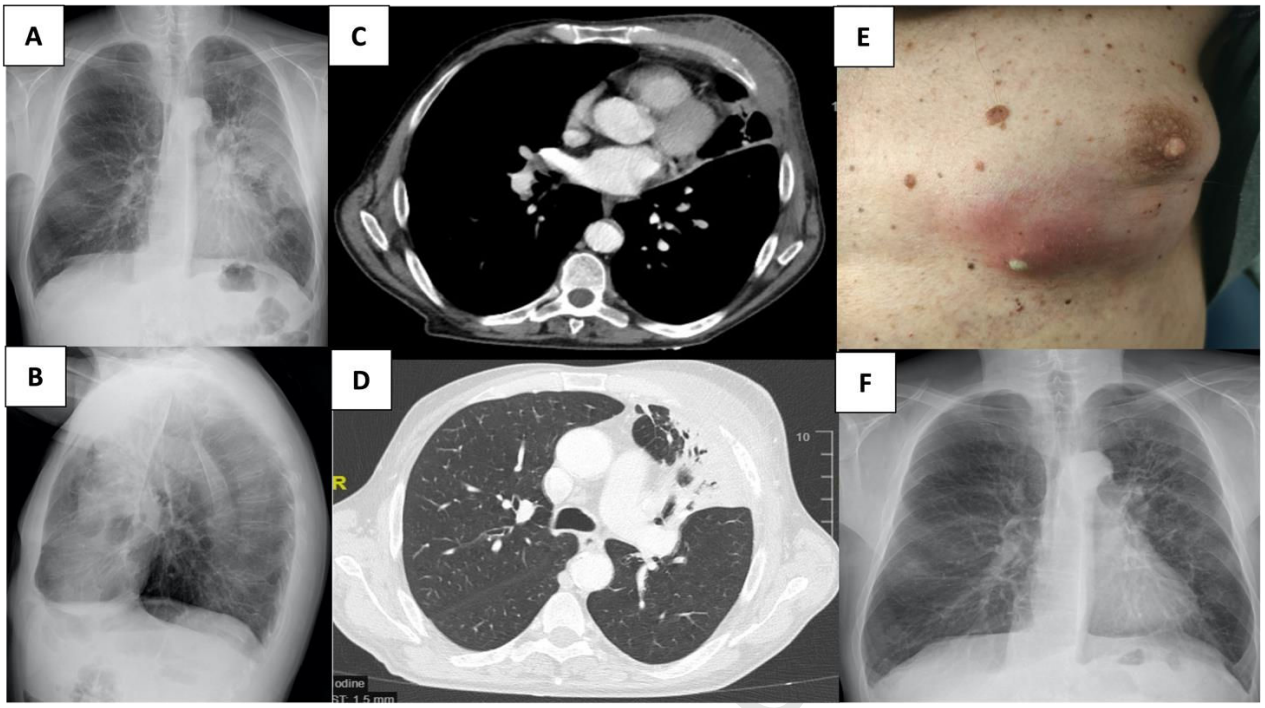

Figure 1.

1.A) PA (posteroanterior) and B) L (lateral) Chest X-ray. Heterogeneous opacification within the left upper lobe (LUL), accompanied by pseudonodular opacities in the left parahiliar region. Secondary signs of volume loss, including mild elevation of the left hemidiaphragm and anterior displacement of the left minor fissure.

1.C - D) CT chest scan showed a heterogeneous consolidation with air bronchogram in LUL, extending into the lingula and associated with volume loss. Absence of central or endobronchial mass. In the anterolateral arch of the 4th left rib, small lytic areas as well as focal cortical disruption were seen at multiple points. Diffuse increase of soft parts in the adjacent chest wall was associated, with marked thickening of the pectoral musculature (2.6cm thick) visualizes small hypodense collections inside it. Trabeculation of adjacent subcutaneous fat and slight skin thickening in ipsilateral pectoral region. The findings suggest a pneumonia in LUL with the extension by contiguity to the left pleura and chest wall (empyema necessitatis).

1.E) Picture of the left pectoral mass and an ampoule within purulent content.

1.F) 8 months follow-up PA Chest X-ray. Complete resolution of empyema necessitates with linear opacities in the LUL compatible with parenchymal scarring. Bilateral hyperinflation.