

What are the common causes of pneumatoceles?

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A 28-year-old male, known intravenous drug user, presented with a four-day history of productive cough and fever. Inspiratory crackles were heard throughout both lung fields. Cardiac examination revealed a tricuspid regurgitation murmur. Methicillin-sensitive *Staphylococcus aureus* was cultured from blood on three separate occasions. Transthoracic echocardiogram confirmed moderate tricuspid regurgitation. Chest radiograph revealed bilateral pneumatoceles, many in evolution with surrounding consolidation.^[1] Pneumatoceles are thin-walled, air-filled cysts in the lung parenchyma.^[2,3] The likely pathogenesis is necrosis of lung parenchyma, allowing one-way air-flow into the interstitial space.^[2,3] Infection is a common cause, most often *Staphylococcus aureus*. It has been reported that a high portion of *Staphylococcus aureus* infections resulted in pneumatocele formation.^[1,2] Other causes include trauma and hydrocarbon aspiration.^[2] The major

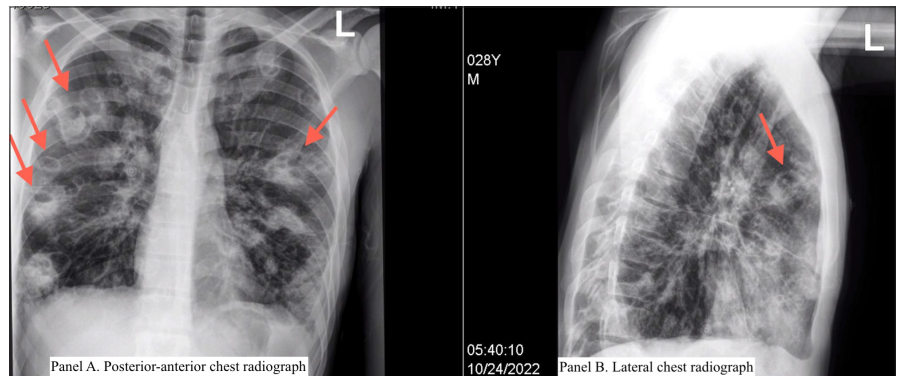


Figure 1: Chest Radiograph illustrating pneumatoceles

complications of pneumatoceles are pneumothoraces and haemoptysis.^[2,4] First-line treatment in cases of infective aetiology is antibiotics, and surgical intervention is rarely needed.^[2]

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2. Jamil A, Kasi A. Pneumatocele. StatsPearl Publishing: Treasure Island, 2022. <https://www.ncbi.nlm.nih.gov/books/NBK556146/>

3. Reed JC. Multiple Lucent Lesions. In: *Chest Radiology: Patterns and Differential Diagnosis*, 7th edn. Elsevier, 2019:361-385.

4. Natarajan P, Skidmore J, Aduroja O, Kunam V, Schuller D. Bilateral pneumatoceles resulting in spontaneous bilateral pneumothoraces and secondary infection in a previously healthy man with COVID-19. *Baylor University Medical Center Proceedings*, 2021;34(5):590-592.