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Pneumonia

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INTRODUCTION

Pneumonia continues to be a significant global health problem, remaining among the top ten causes of death globally and in the US¹, especially among elderly patients². The diagnosis of pneumonia relies mainly on clinical symptoms and imaging findings. Despite imaging studies playing an important role in early diagnosis, laboratory confirmation can be obtained in only 30-70% of cases even after a full microbial battery is performed³. Invasive procedures, such as bronchoscopy with lavage and biopsy, are limited to hospital-associated infections and immunocompromised patients.

Imaging Modalities

Chest radiography (CR) is considered the modality of choice for detecting new infiltrates in clinically suspected pneumonia^{4,5}. This modality provides information about localization, extent, and prognosis, as well as excluding other causes of disease and at times even suggesting an etiologic agent⁵. However, the specificity of CR is low, and interpretation agreement among readers depends on their levels of expertise⁶⁻⁸.

In immunocompromised patients (including smokers and diabetic patients), the appearance of signs of infection on CR may be delayed. In neutropenic fever, for example, CR may appear normal for up to 72 hours, though signs of underlying pneumonia may be apparent on CT. However, in patients who are immune competent, the early stages of pneumonia are usually visible on CR within 12-24h^{3,9,10}. Therefore, the appropriate timing for obtaining CR is crucial when diagnosing lung infections, particularly in immunocompromised patients.

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