

MELIOIDOSIS AS A DIFFERENTIAL DIAGNOSIS FOR MULTIPLE SOFT TISSUE DENSITY LESIONS IN CHEST RADIOGRAPH. A CASE REPORT

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Introduction.

Melioidosis is an infectious diseases caused by *Burkholderia pseudomallei*, a gram-negative bacillus found naturally in soil and stagnant water(1). This is a multisystem disorder which may affect the lungs, brain, visceral organs, or musculoskeletal system. The most common organ to affect by the Melioidosis is the lung(2). Common differential diagnosis for multiple soft tissue density lesions in chest radiograph are metastases, multiple synchronous lung cancers, multiple lung abscess or granulomatous diseases like Wegener's Granulomatosis. Here we present a case of Melioidosis which was present as multiple soft tissue density lesions in chest radiograph.

Case report

A 43 years old male patient with type II diabetes mellitus, investigated for pyrexia of unknown origin. He had on and off fever for 1 month duration and gave a history of productive cough for 1 week duration. His full blood counts shows neutrophil leukocytosis. ESR was 114mm/hr. CRP was 364mg/dl. The peripheral blood film revealed anemia of chronic disease and suggested to exclude

acute bacterial diseases. His urine culture was negative. Blood culture reveled that he is having infection of an oxidase negative gram negative organism (*Burkholderia pseudomallei*).

Initial chest radiograph shows multiple soft tissue density lesions of varying sizes distributed over bilateral lungs involving all three zones. No cavitation. No evidence of consolidation or pleural effusions. Mediastinum appear normal. Cardiac contour is normal. Visualized bones appear normal.

Subsequently contrast enhanced CT chest and abdomen were performed for further evaluation. Multiple, ill defined, soft tissue density lesions of varying sizes are noted scattered throughout both lung fields. No intra lesional cavitation, calcification or fat densities. Feeding vessel sign is noted. His CT abdominal findings revealed that mild hepato-splenomegally with early liver abscess formation.

Discussion

Melioidosis is an infectious diseases caused by *Burkholderia pseudomallei*, a gram-negative bacillus found naturally in



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soil and stagnant water(1). This is a disorder which may affect the lungs, brain, visceral organs, or musculoskeletal system. The most common organ to affect by the Melioidosis is the lung(2). The organism enters the human host most commonly through a preexisting skin epithelial defect, and percutaneous inoculation. Melioidosis mostly infects adults with a predisposing condition, mainly diabetes mellitus, alcoholism, renal disease, cirrhosis, chronic lung disease, thalassemia, cystic fibrosis, malignancy, steroid therapy, and other causes of immune suppression(3). The clinical manifestations range from subclinical infection to fulminating disease with multiple organ involvement and even death. Definitive diagnosis is made by positive culture of the organism(2).

The course of the disease usually categorize in to acute, sub-acute and chronic stages. In acute stage chest radiograph may show multiple small pulmonary nodules typically starting in the upper lobes. It usually due to hematogenous spread. This may rapidly

multisystem progress in to cavitation or pulmonary abscess formation.

In sub-acute and chronic stages chest radiograph may shows mixed nodular or patchy opacities. Some times in chronic stage rupture of the cavity or lung abscess into the pleural space can occur. That can lead to pneumothorax or hydropneumothorax(4).

Treatment depends on the location and the severity of the disease. Usually iv Ceftazidime or Meropenem with Cotrimoxazole are the choices(4).

Conclusion.

Melioidosis is commonly affect the lung. It is a one of differential diagnosis for lesions of varying sizes. Multiple soft tissue density represent small pulmonary nodules and it seen in the acute phase of the diseases. They progress in to cavitation and pulmonary abscess formation. In sub-acute and chronic forms, the radiological features are similar (mixed nodular or patchy opacities).

References

1. Alhatmi H, Alharbi A, Bosaeed M, Aldosary O, Aljohani S, Alalwan B, et al. Melioidosis: Case reports of confirmed *Burkholderia pseudomallei* in Saudi Arabia. *J Infect Public Health*. 2020 May 1;13(5):824–6.
2. Alsaiif. Melioidosis: Spectrum of radiological manifestations [Internet]. [cited 2021 Jan 30]. Available from: <https://www.sjmms.net/article.asp?issn=1658631X;year=2016;volume=4;issue=2;spage=74;epage=78;aulast=Alsaiif>
3. Brett PJ, Woods DE. Pathogenesis of and immunity to melioidosis. *Acta Trop*. 2000 Feb 5;74(2–3):201–10.
4. Desai PK. Melioidosis | Radiology Reference Article | Radiopaedia.org [Internet]. Radiopaedia. [cited 2021 Jan 30]. Available from: <https://radiopaedia.org/articles/melioidosis>

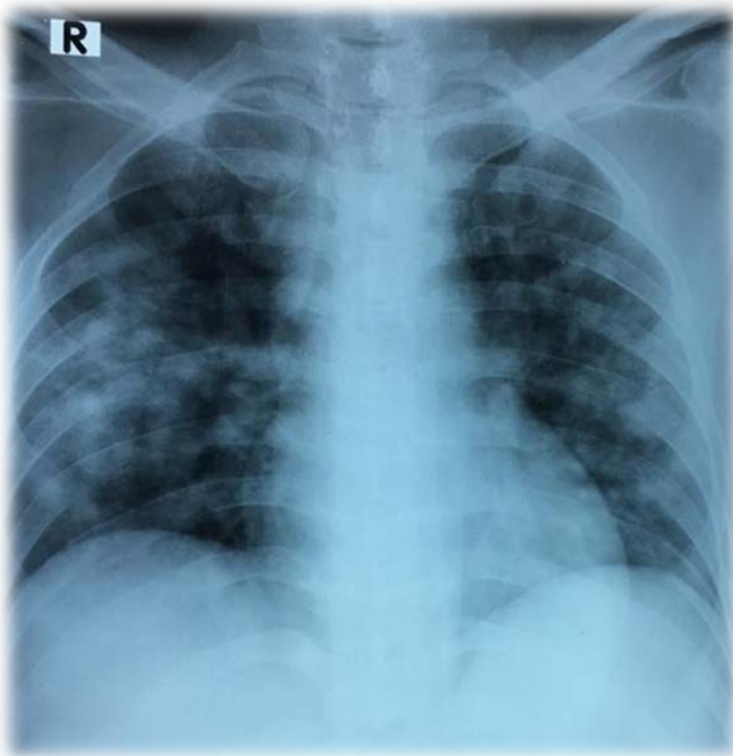
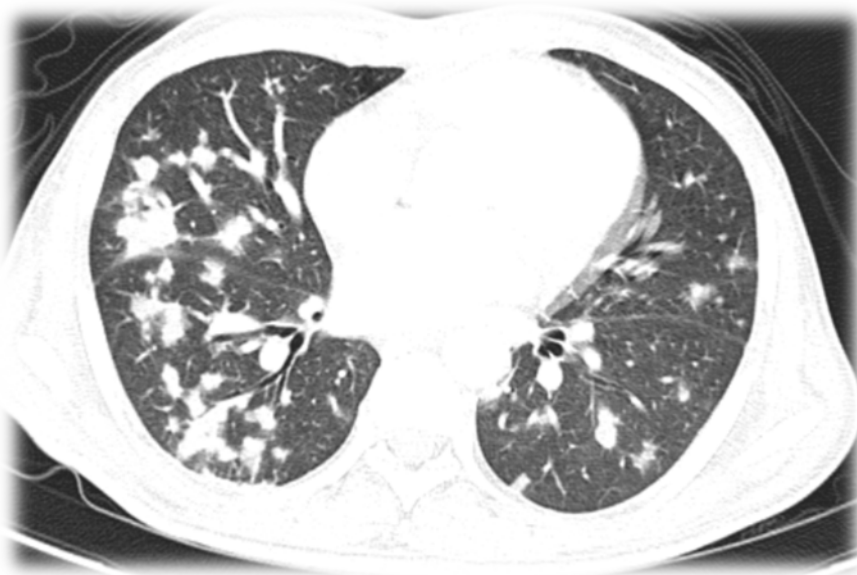


Figure 01. PA chest X ray showing multiple soft tissue density lesions of varying sizes distributed over B/L lung fields involving all three zones



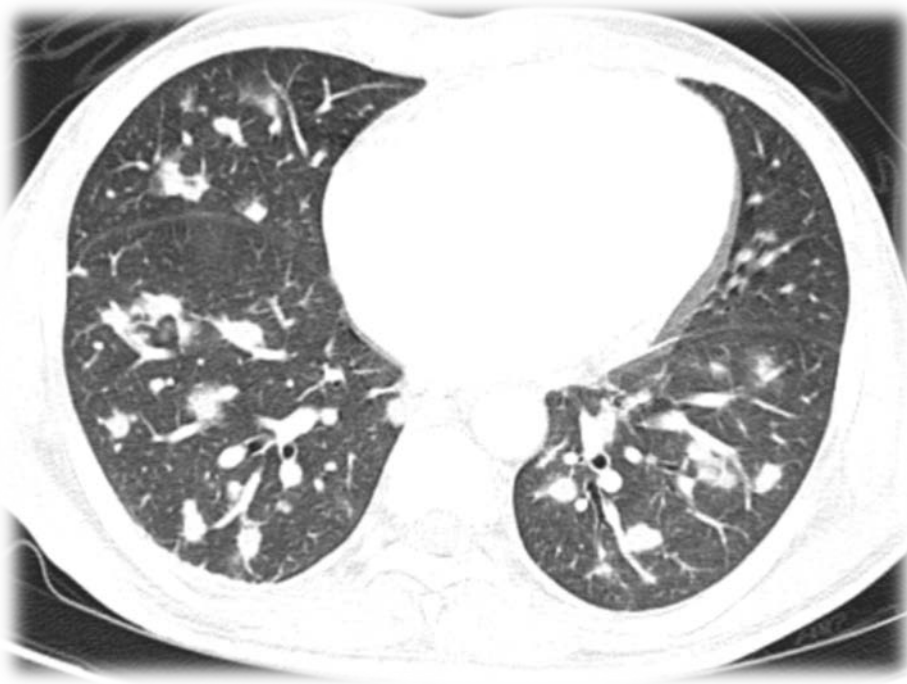


Figure 02. (A and B) CECT chest lung window demonstrating multiple soft tissue density lesions scatted in both lungs.

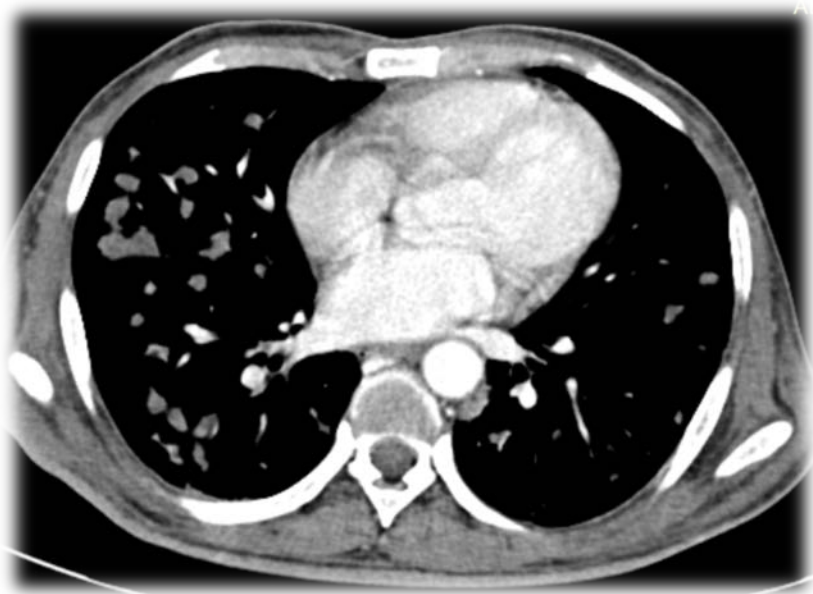


Figure 03. CECT chest mediastinal window demonstrating multiple soft tissue density lesions.