Images in Clinical Medicine

A 75-Year-Old Male with Multiseptated Cavitary Lung Lesion

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Fig 1. Visualized chest X-ray showing no obvious cavitary lesion

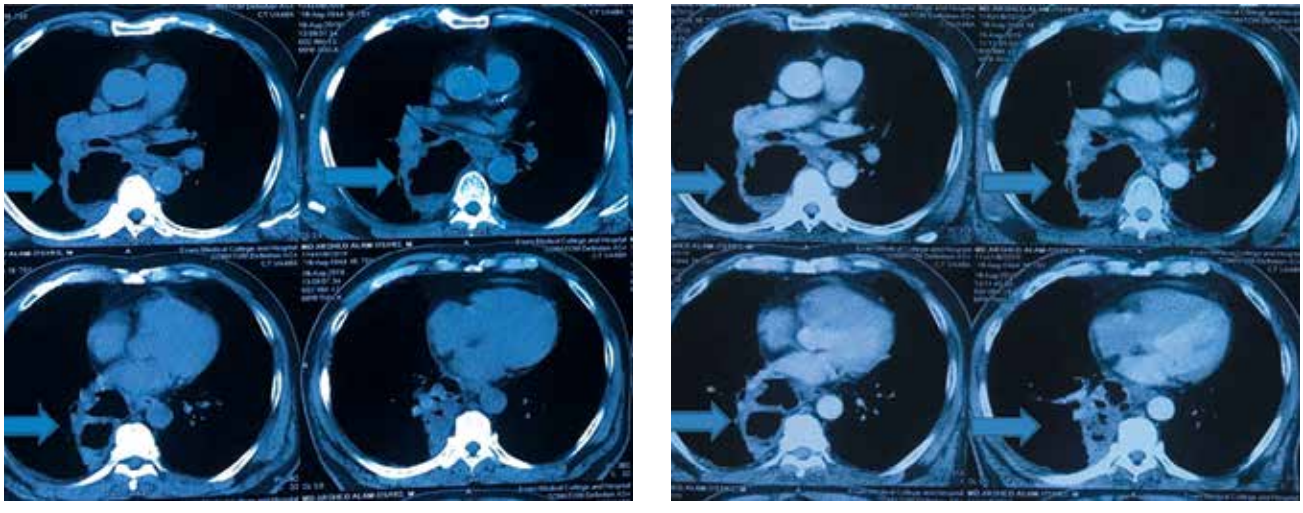

Fig 2. Pre- and post-contrast axial CT scan showing mild enhancing irregular thick-walled cavitary lesion at right lung field

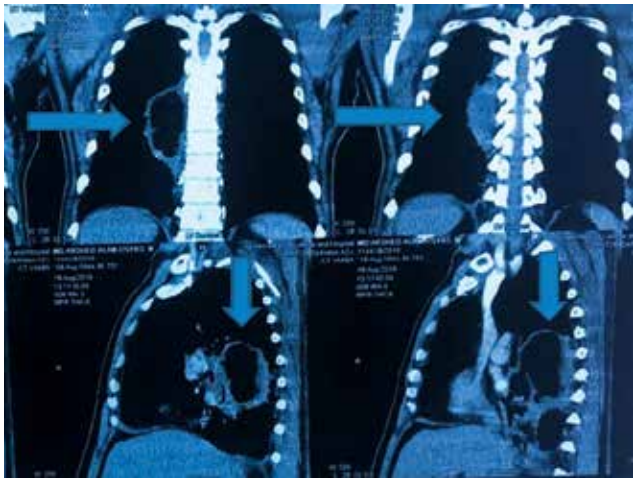

Fig 3. Coronal and sagittal images showing cavitary lesions involving superior segment and posterior basal segment of right lower lobe

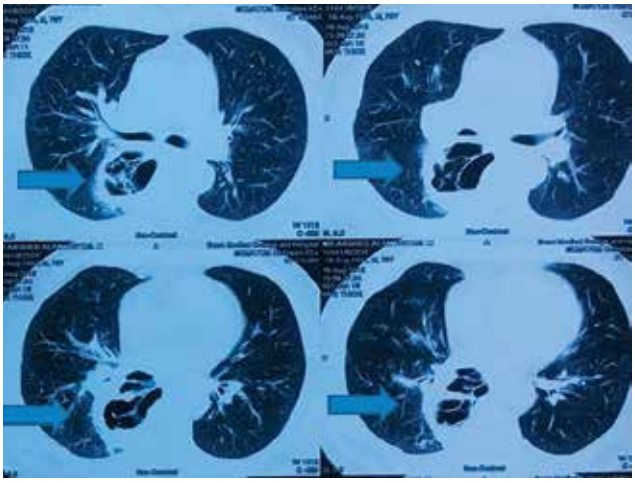

Fig 4. Lung window axial scan shows multiseptations in the cavitary lesion

A 75-year-old man attended the Department of Radiology & Imaging in Enam Medical College & Hospital for a chest radiography. He presented with history of cough and chest pain for 6 months and fever for last 15 days. Chest radiography revealed old pulmonary inflammatory lesions and pleural thickening with cystic bronchiectasis. His complete blood count was notable for a white blood cell count of 17,070 with 80% neutrophil. AFB for sputum was found negative. For further evaluation he was advised to do a CT scan of chest. Contrast-enhanced CT (CECT) scan revealed a fairly large irregular thick-walled cavitary lesion having wall thickness of about 3 mm and multiseptations within. The lesion measures about 13 cm × 08 cm × 07 cm with cystic bronchiectasis involving superior segment and posterior basal segment of right lower lobe. After IV contrast administration, mild wall enhancement is evident. There was increased vascularity in both lung fields with right posterior basal pleural thickening. This mass was diagnosed as infectious cavitary lesion, possibly tubercular in origin.

Differential diagnoses include fungal infections and neoplastic cavitary mass. The wall of the cavity of fungal infections is irregular, but wall thickness usually remains below 3 mm. There may be local pleural thickening. Neoplasms are typically of variable size with irregular thick walls (≥4 mm) on CT scan, with higher specificity for neoplasm in those with a wall thickness ≥15 mm.[1]

Tuberculosis is the prototypical cause of an infectious pulmonary cavity. The cavitary phase of tuberculosis rarely occurs at the time of initial infection, but it is a secondary phenomenon resulting from a hyperimmune response. The cavities of tuberculosis are usually quite distinctive because of their proclivity to the apical or the posterior segments of the upper lobes. Approximately 10% of tuberculous cavities are found in atypical locations.[2]

Common symptoms are productive cough, fever and chest pain. In addition to such common complications as pneumothorax and empyema, the development of broncho-pleural fistulas is a rare complication. Abscesses are seen on CT as cavitary lesions with or without a fluid level.[3]

Other radiologic features that aid in the identification of a tuberculous cavity include: (a) associated reticular pulmonary scars, (b) volume loss in the involved lobe, (c) pleural thickening, (d) pleural calcification and (e) calcified hilar or mediastinal lymph nodes.[4]

Diagnosis is confirmed by biopsy. The main treatment is conservative, but percutaneous drainage or pulmonary resection may be necessary in up to 20% of cases. Prognosis depends upon patient's age, nutritional status, comorbidity, immunity, appropriate and timely antibiotics and supportive therapy.

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