

Pulmonary Alveolar Microlithiasis Scintigraphic Features

J Hephzibah, R Oommen, B Mugesh, J Pradhip

Citation

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Abstract

A 35-year-old female patient presented with a history of nonspecific chest pain and cough for one year. Spirometric studies excluded an obstructive ventilatory defect. Lung volume study findings were consistent with a moderate restrictive ventilatory defect with Total Lung capacity of 2.15L (51.6% of predicted). Diffusing capacity for the alveolar volume ventilated was reduced.

Plain chest radiograph showed sand-like opacities, diffusely scattered, bilateral, micronodular areas of radio-opacity of calcific densities throughout the lungs with the classic “sandstorm” pattern throughout both lungs predominantly in the lower zones (Fig: 1).

Figure 1

Figure 1: Plain chest radiograph showing sand-like opacities, diffusely scattered, bilateral, micronodular areas of radio-opacity of calcific densities throughout the lungs with the classic “sandstorm” pattern throughout both lungs predominantly in the lower zones.



Computerized tomographic scan revealed diffuse bilateral calcified fine nodular pattern with extensive septal thickening (Fig: 2).

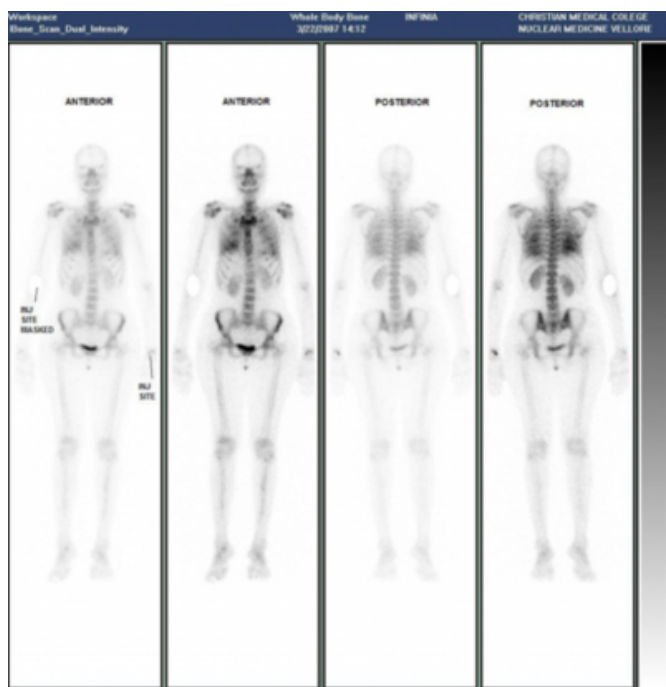
Figure 2

Figure 2: Computerized tomographic scan showing diffuse bilateral calcified fine nodular pattern with extensive septal thickening.



Figure 3

Figure 3: Tc-99m methylene diphosphonate (MDP) Bone scintigraphy showing intense bilateral uptake of the radiopharmaceutical in the lungs.



Bone scintigraphy along with chest radiography and computerized tomography contributed to the diagnosis of Pulmonary Alveolar Microlithiasis in this patient.

DISCUSSION

Pulmonary alveolar microlithiasis is a rare disease of unknown etiology, characterized by the presence of calcific concretions in the alveolar spaces, intra-alveolar development and deposition of microliths or calcispherytes consisting of calcium phosphate¹

The progression of the disease is generally very slow.

Study of the calcium metabolism in many reported cases, however, reveals no derangement of serum calcium levels as in this patient who was normocalcemic, though elevated serum calcium and renal stones have been recorded in some cases.^{2, 3}

Pulmonary function studies demonstrate a tendency toward a restrictive pattern. Chest roentgenography, high-resolution computed tomographic, and technetium-99m lung scan are useful in the diagnosis.

Bone scintigraphy can be useful in the detection of early pulmonary calcifications, which have been associated with impaired pulmonary function and, due to their size, are generally not detected by X-ray. Bone scintigraphy may add helpful information in the case of nonspecific CT findings. Bone scan usually shows intense bilateral uptake of the radiopharmaceutical in the lungs.⁴ Differential diagnosis of diffuse lung uptake in bone scans includes patients with hyperparathyroidism, Hodgkins lymphoma, Sarcoidosis, Wegener's vasculitis, Primary amyloid, renal failure and Pneumocystis carinii.⁵

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