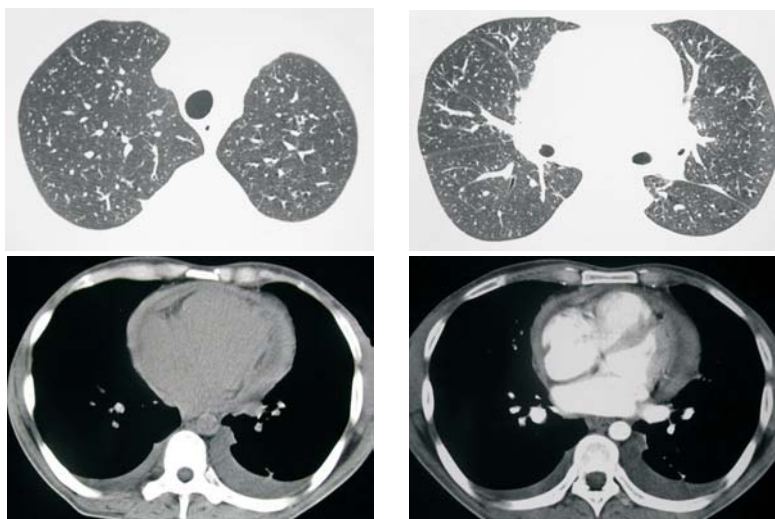


Radiological Diagnosis

Diagnosis of the case presented in the previous edition

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MILIARY TUBERCULOSIS WITH TUBERCULOUS PERICARDITIS



56-year-old male

Dyspnea for two months with progressive worsening

Low-grade fever and dry cough

COMMENTS:

Pulmonary tuberculosis (TB) is one of the most serious respiratory infections. The clinical manifestations of TB vary depending on the site affected and immune status of the host, as well as on the number and type of comorbidities. Pulmonary TB is caused by *Mycobacterium tuberculosis* and is traditionally classified as either primary or secondary (usually referred to as post-primary or reactivation TB). Primary TB typically presents as air-space consolidation, enlarged hilar or mediastinal lymph nodes, pleural effusion and, occasionally, a miliary pattern. The post-primary form is more common in adult patients, resulting from reactivation at the site of a previously acquired infection. The most common manifestations include opacities (linear or nodular) and cavitations, predominantly in the apical and posterior portions of the upper lobes. Pleural effusion and a miliary pattern are less common in the post-primary form.

Miliary TB is caused by the hematogenous dissemination of *M. tuberculosis*, to which immunocompromised individuals are more susceptible.

Radiographically, miliary TB is characterized by a fine nodular pattern. In 30 to 40% of patients with miliary TB, the nodules are not visible in radiological images, even in retrospect. High-resolution computed tomography (HRCT) can be useful in the diagnosis of miliary TB in patients presenting normal chest X-rays or nonspecific radiographic findings. In HRCT scans, these nodules are well defined, measuring 1 to 3 mm in diameter. The distribution of the nodules is random in relation to the structure of the secondary lobule of the lung, and they may be found in the cephalocaudal or central-peripheral regions. Due to their smaller size and uniformity of diameter, as well as their diffuse distribution

throughout the lung, miliary nodules are, in most cases, easily distinguished from the centrilobular nodules found in TB patients presenting bronchial dissemination. Other HRCT findings than can be seen in miliary TB include nodular thickening of the interlobular septa/fissures, nodular irregularity of the blood vessels and areas of ground-glass attenuation.

Pericarditis is a complication that affects pulmonary TB patients at a rate of 1 to 8%, being even rarer in cases of miliary TB. It is believed that pericardial involvement is caused by infected ganglia and the anatomical proximity of the lymph nodes to the pericardial sac. Although a more remote possibility, the pericardium may be affected by hematogenous dissemination of the bacteria.

The tomographic findings most commonly seen in tuberculous pericarditis are pericardial thickening (greater than 3 mm), well-defined pericardium in contrast-enhanced imaging and pericardial effusion, the last of which may or may not be present.

Approximately 10% of patients with tuberculous pericarditis develop constrictive pericarditis. Computed tomography scans of such patients reveal fibrotic thickening and, frequently, pericardial calcification.

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