Multiple, small centrilobular nodules

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A 55-year-old man sought outpatient treatment with a 6-year history of progressive dyspnea, which had worsened over the prior 4 months. A CT scan showed scattered small centrilobular nodules that were a few millimeters away from the pleural surface and fissures and did not touch them (Figure 1).

The patient had multiple, small interstitial nodules on CT. A nodular pattern refers to multiple, round pulmonary soft-tissue density opacities smaller than 3 cm. Small nodules (or micronodules) are those that are less than 1 cm in diameter. On the basis of their distribution in the lung parenchyma, they can be classified as perilymphatic, centrilobular, or random.[1]

A perilymphatic pattern is characterized by small nodules located predominantly along the peribronchovascular interstitium, interlobular septa, and subpleural regions (which contain the pulmonary lymphatics). This pattern of distribution is frequently found in sarcoidosis, silicosis, and lymphangitic carcinomatosis. A centrilobular distribution is characterized by nodules that are a few millimeters away from the pleural surface and fissures but do not touch them. Hypersensitivity pneumonitis, silicosis, and bronchiolitis are examples of diseases in which this pattern may occur. A random pattern is characterized by small nodules that are randomly distributed in the secondary lobule and uniformly scattered throughout the lungs. Nodular diseases that disseminate through the body via the bloodstream, such as metastases and miliary granulomatous diseases (especially tuberculosis and histoplasmosis), have a random pattern of distribution.

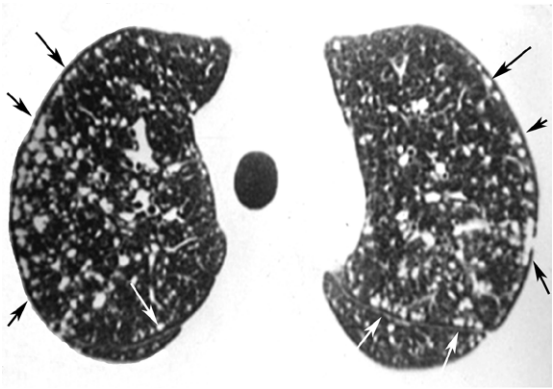

Figure 1. Axial CT scan at the level of the upper lobes, showing small soft-tissue density nodules that are distributed homogeneously throughout the lungs but do not touch the peripheral pleural surfaces (black arrows) or fissures (white arrows).

In the case described here, the nodules had a typical centrilobular distribution, sparing the pleural surfaces. This pattern is primarily seen in silicosis, hypersensitivity pneumonitis, and some forms of bronchiolitis. In most cases, the nodules found in hypersensitivity pneumonitis and bronchiolitis exhibit ground-glass attenuation. In suspected hypersensitivity pneumonitis, a history of exposure to certain antigens usually helps establish a diagnosis. In bronchiolitis, the nodules are frequently associated with a tree-in-bud pattern, which represents centrilobular branching opacities, most pronounced in the lung periphery, resembling the budding of certain plants.[2]

In suspected silicosis, it is essential to take a complete occupational history. An occupational history of silica exposure, associated with a consistent imaging pattern, is sufficient to establish a diagnosis of silicosis, there being no need for histopathological confirmation.[3] Our patient worked as a sandblaster at a shipyard, which allowed us to establish a final diagnosis of silicosis.

REFERENCES

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