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Conglomerate masses

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A 37-year-old man presented with dry cough and progressive dyspnea on moderate and severe exertion. The patient worked as a sandblaster in a shipyard for fourteen years, and the final diagnosis was silicosis.

Conglomerate masses are basically caused by four diseases: talcosis; sarcoidosis; coal worker's pneumoconiosis (CWP); and silicosis. Talcosis can be found in people who worked in talc mines and were engaged in milling, packaging, or transporting the product, as well as in soapstone workers. Another form of exposure is intravenous injection of drugs intended for oral use. An HRCT scan can show nodules, conglomerate perihilar masses, eventually containing areas of high attenuation caused by talc deposition, and panlobular emphysema in the lower lobes. These findings are highly suggestive of pulmonary talcosis.

In sarcoidosis, progressive fibrosis also leads to abnormal central conglomeration of perihilar bronchi and vessels, associated with masses of fibrous tissue, typically most marked in the upper lobes. Fibrotic masses are often associated with bronchial dilation. This combination is typical of sarcoidosis.

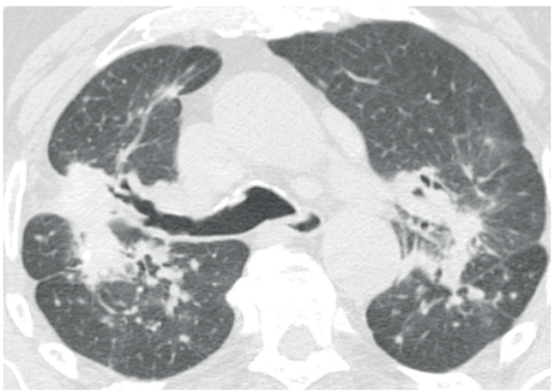

Figure 1. HRCT scan showing heterogeneous conglomerate masses in the upper lobes bilaterally, containing areas of architectural distortion and small adjacent nodules.

As the name suggests, CWP results from inhalation of coal dust particles. The conglomerate masses seen in CWP are similar to those seen in silicosis. The presence of eggshell calcifications in patients with CWP indicates that there is a small amount of silica in the coal dust particles inhaled.

Silicosis is a chronic fibrosing lung disease caused by prolonged exposure to dusts containing free silica. The diagnosis of silicosis requires the combination of a history of exposure to silica and characteristic imaging findings. The classic radiological findings are small nodules, which tend to be located in the posterior upper lung zones but can be scattered over the lungs. These nodules can agglomerate, forming conglomerate masses. Calcifications can be seen in masses and in lymph nodes. Peripheral calcifications of lymph nodes—eggshell calcifications—are suggestive of silicosis. The association with tuberculosis is the most common cause of mass cavitation.

Although the identification of conglomerate masses limits the diagnostic possibilities to the four aforementioned diseases, the clinical and occupational history is essential for the diagnostic conclusion. Not only the present occupational history but also the past occupational history is crucial for the final diagnoses of silicosis and CWP. With regard to talcosis, besides a possible occupational history (especially workers engaged in talc mining or packaging), the possibility of patients being drug users, especially those who inject drugs intended for oral use intravenously, leading to pulmonary embolization by the product, should be carefully evaluated. If the patient's history does not include any of these characteristics, the most likely diagnosis is sarcoidosis.

RECOMMENDED READING

1. Webb WR, Muller NL, Naidich DP, editors. High-resolution CT of the lung. 4th ed. Philadelphia: Lippincott Williams & Wilkins; 2008.

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