

Disseminated hollow and solid lung nodules as a unique pulmonary manifestation of rheumatoid arthritis

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Pulmonary round nodules can represent various diseases (1). Moreover, rheumatoid arthritis can cause lung infiltrations that usually present as irregularly shaped formations (2). Here, we report a unique case of disseminated hollow pulmonary nodules in the context of rheumatoid arthritis.

The patient was diagnosed with seropositive rheumatoid arthritis in 2016 and complained of pain and swelling in the feet and knees. Treatment with prednisolone (35 mg/d), lodotrane (5 mg/d), and methotrexate (15 mg/week) was initiated. Upon deterioration of symptoms, the patient received an additional therapy with a monoclonal antibody against the interleukin (IL)-6 receptor. Computed tomography of the thorax revealed multiple round-shaped nodules of different size that were peripherally and centrally located within the lung parenchyma (Figure 1a, b). Some nodules were solid, some hollow, representing a “ring shape,” and some were in between these morphologies (Figure 1a, arrows). Respiratory symptoms were absent. Thoracoscopic resection of the three types of nodules (Figure 2a) revealed a necrotizing, granulomatous inflammation with central necrosis and margins containing epithelioid cells, fibroblasts, lymphocytes, and histiocytes (Figure 2b). Malignancy, tuberculosis, or other infections, such as fungus and bacteria, were ruled out by Grocott and Ziehl-Neelsen and Gram staining along with PCR. The patient continued to receive weekly treatment with an IL-6R antagonist and is free of symptoms until now.

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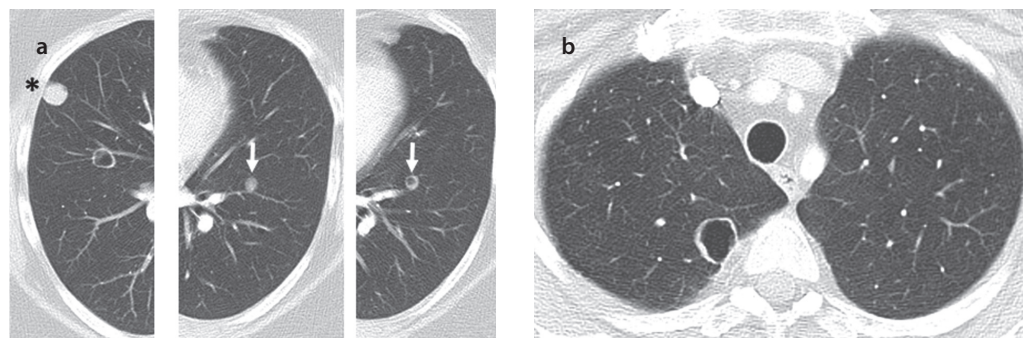


Figure 1. a, b. Lung nodules in preoperative CT. Some nodules were solid (a,*), some hollow (b), and some nodules changed from solid to hollow (white arrow)

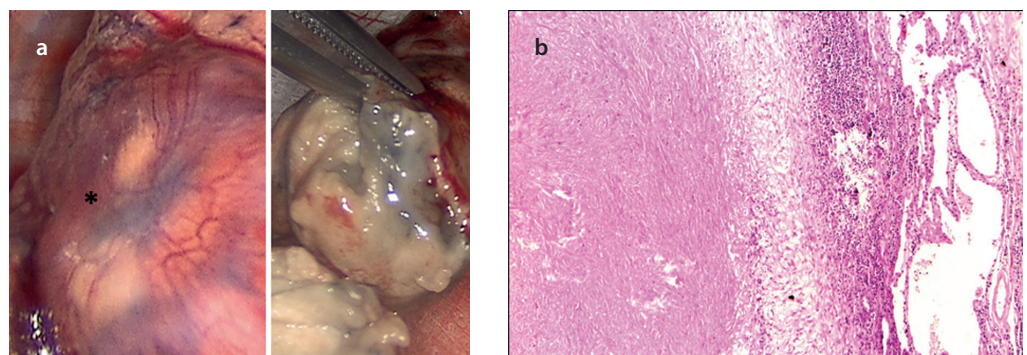


Figure 2. a, b. Thoracoscopic view and section (a) of a solid nodule in Segment 6 on the right side, corresponding to the nodule shown in Figure 1a; histology (H&E) revealed necrotizing, granulomatous inflammation with central necrosis and margins containing epithelioid cells, fibroblasts, lymphocytes, and histiocytes (b) (40× magnification)

In conclusion, the presentation of solid and hollow pulmonary nodules, normally highly suspicious of metastases cancer, may be induced by rheumatoid arthritis and may be resolved by treatment with an IL-6 inhibitor (3). Nevertheless, these nodules must undergo a thorough work-up, including nodule resection, particularly in the presence of a positive smoking history.

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