

Radiology and Histology of a Rheumatoid Pulmonary Nodule

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KEY WORDS: lung cavity, lung nodule, necrobiotic nodule, rheumatoid arthritis, rheumatoid pulmonary nodule

IMAJ 2024; 26: 202–202

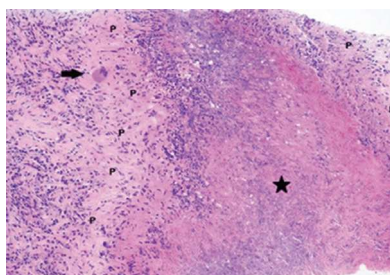
A 69-year-old woman with a 30-year history of rheumatoid arthritis (RA) on leflunomide presented with dizziness and weakness. Vital signs, cardiopulmonary auscultation, and laboratory studies were normal. The serological status of her RA was unknown. She exhibited ulnar deviation and swan-necking of the hands but no nodular skin lesions. She was an active smoker. Chest radiography revealed an opacity in the right lung. Computed tomography (CT) showed multiple pulmonary nodules and a dominant thick-walled cavitary mass in the periphery of the right lower lobe [Figure 1A]. Due to concern for a malignancy or infection, she underwent a bronchoscopy with a biopsy of the mass, which was non-diagnostic. A subsequent transthoracic needle biopsy demonstrated a central zone of necrosis surrounded by a cuff of palisading epithelioid histiocytes with the presence of occasional giant cells [Figure 1B]. There was no malignancy, and stains for microorganisms were negative. In this clinical context, biopsy results were con-

Figure 1. Chest computed tomography and lung histology

[A] Axial image from computed tomography of the chest set to lung window showing a right lower lobe thick walled cavitary mass in a subpleural location (arrow); much smaller satellite pulmonary nodules were present bilaterally (not shown)



[B] Histological section from the mass obtained at lung biopsy demonstrating a central zone of necrobiotic debris (star) flanked by palisading epithelioid histiocytes (P), including a prominent multi-nucleated giant cell (arrow); special stains for microorganisms were negative (hematoxylin and eosin, original magnification × 40)



sistent with a pulmonary rheumatoid nodule (PRN).

PRNs, also called necrobiotic nodules, are typically a manifestation of long-standing seropositive RA. With a CT, they are found in approximately 20% of patients with RA [1] and on open lung biopsy in over 30% [2]. They are usually multiple, but with one dominant nodule, and are often cavitary and subpleural. Concurrent subcutaneous rheumatoid nodules may or may not be present. The main competing considerations are malignancy and mycobacterial or fungal infection. Biopsy is indicated in cases with diagnostic uncertainty, and the histological findings are exactly those observed in our patient, who was discharged on continued leflunomide therapy.

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