Rheumatoid lung nodule

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DESCRIPTION

A 61-year-old woman was under treatment with a combination of methotrexate and leflunomide for seropositive rheumatoid arthritis (RA) for the past 6 years. She presented to us 6 months earlier with grade 1 dyspnoea of 3-month duration. She was a non-smoker. On evaluation, her vitals, and respiratory and cardiovascular system were normal. Laboratory reports revealed normal blood count, and renal and liver function tests were also normal. Chest X-ray revealed multiple nodules (in left upper lobe and right lower lobe). CT of the chest confirmed bilateral multiple necrotic and non-necrotic nodules (figures 1 and 2). Since the differential diagnoses included opportunistic infections and malignancy, a CT-guided biopsy was performed. Histopathology showed necrotising inflammation consisting of collections of macrophages, lymphocytes and plasma cells around the area of necrosis, without evidence of vasculitis or malignancy. Cultures did not grow fungus or mycobacteria. A diagnosis of rheumatoid nodule was made based on the clinical setting, typical radiographic, histopathology features and negative cultures. Follow-up scans carried out 3 months later did not show worsening or new nodules.

Pulmonary rheumatoid nodules are rare and their prevalence ranges from <0.4% in radiological studies to 32% in lung biopsies of patients with RA and nodules.[1] They are more frequent in male patients with positive rheumatoid factor, smokers, patients with subcutaneous nodules and those on long-term treatment with methotrexate. They are usually multiple and rounded. In several cases, solitary pulmonary nodules in patients with RA have proved to be a rheumatoid nodule and a coexistent bronchogenic carcinoma.[2] If the index of suspicion is high for malignancy, the work up should be more aggressive. They are preferentially located in the middle and superior peripheral lobe or pleural based with a size ranging from a few millimetres to 7 cm. Up to 50% may cavitate and be accompanied by an associated pleural effusion, pneumothorax or hydropneumothorax. They may appear and evolve or regress without any relation to the evolution of arthritis. They are mostly asymptomatic and, in most cases, do not require specific treatment.[2] Typical histopathological findings of rheumatoid lung nodules consist of central zone of acellular fibrinoid necrosis surrounded by a zone of palisading epithelioid cells, which in turn are surrounded by a collar of lymphocytes, plasma cells and fibroblasts.[3] Although these typical features were not seen on histopathology, the biopsy essentially ruled out other causes such as malignancy and infection, making the diagnosis of rheumatoid nodule with a high degree of certainty in the reported case.

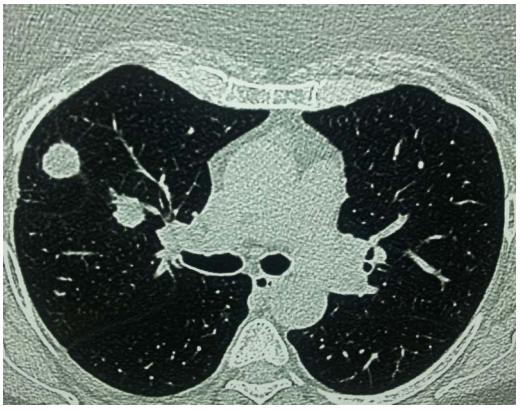

Figure 1 Chest CT: axial image showing multiple rheumatoid nodules.

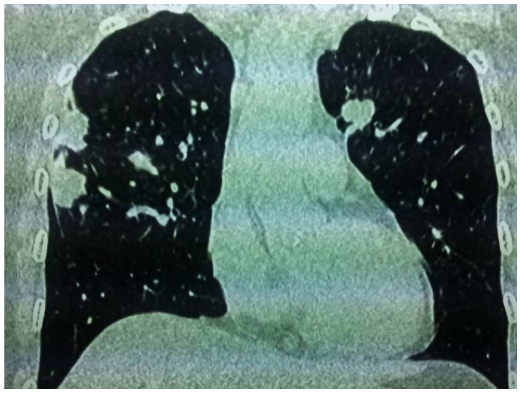

Figure 2 Chest CT: coronal reformatted image showing multiple rheumatoid nodules.

Learning points

- Rheumatoid lung nodules are rare pulmonary manifestations of rheumatoid arthritis.
- They are usually asymptomatic and seen in longstanding sero-positive cases and/or in those on prolonged therapy with methotrexate.
- Biopsy is mandatory in such cases, to rule out infections and malignancy.

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