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Diagnostic challenge in treating patients with pulmonary involvement in rheumatoid arthritis: a case report

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Introduction: Rheumatoid arthritis (RA) is a type of autoimmune disorder that can manifest itself by affecting various organs, predominantly joints. Pulmonary involvement is being defined as highly associated with substantial morbidity and mortality, with male sex, late onset, smoking history and high cyclic citrullinated peptide antibodies count being the main risk factors. Respiratory manifestations are usually present in patients already diagnosed with RA; however, they can also be the presenting feature. The spectrum of lung involvement is vast, with the most common being interstitial lung disease (ILD), especially usual interstitial pneumonia, pleuritis, rheumatoid nodules and airway disease. It is estimated that 10% of RA patients will suffer from significant ILD, and up to 60% will develop subclinical lung disease. Notably, patients with RA have an increased risk of lung cancer, which poses a significant diagnostic challenge.

Case report: A 70-year-old male with a 30-pack-year smoking history, arterial hypertension and rheumatoid arthritis was referred to the Institute of Tuberculosis and Lung Disease after multiple pulmonary nodules were detected on a chest computed tomography (CT) before initiation of immunosuppressive therapy with leflunomide. The most prominent nodule containing necrosis and measuring 13 × 21 mm was biopsied and diagnosed as a RA-nodule. The patient subsequently underwent follow-up CTs at least once a year. In which multiple scattered nodules, intermittent pleural effusions mainly on the left and ground-glass opacities (GGOs) predominantly in the right lower lobe (RLL) were identified. After 3 years of observation, in 2018, a progressive increase in the volume of GGO in RLL was noticed, with a growing solid component of the lesion reaching 64 × 27 mm by 2019, raising suspicion of cancerous growth, which was later confirmed in 2020. After the diagnosis, the patient underwent a wedge resection of the right lower lobe and was lost to follow-up in 2022.

Conclusions: Cancer is one of the leading causes of death in rheumatoid patients. The hazard ratio of lung cancer in RA patients revolves around 1.5 compared with the non-RA population. Thus, RA patients with risk factors such as male sex and a history of smoking should be screened for lung cancer. The guidelines of the American College of Rheumatology indicate that high-resolution chest CT may be used for screening patients for lung cancer, besides other pulmonary involvement, with the frequency being guided by individual clinical symptoms.