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Analysis of 42 Cases of Rheumatoid Arthritis Complicated by Pulmonary Nodules

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Abstract: This paper analyzes 42 cases of rheumatoid arthritis, analyzes the pathology of rheumatoid arthritis, the causes of rheumatoid arthritis development, the disease, and analyzes the proportion of men and women, the proportion of smoking, and the proportion of CRP in the 42 cases. Finally, it was concluded that the incidence of rheumatoid arthritis with pulmonary nodules was related to a variety of factors and increased with the development of the disease, but it was seen that after active treatment, the patients' rheumatoid arthritis was within the controllable range.

1. Introduction

Rheumatoid arthritis (RA) is a chronic systemic autoimmune disease of unknown etiology, mainly inflammatory synovitis, characterized by polyarticular, symmetric, aggressive joint inflammation of the small joints of the hands and feet, often accompanied by extra-articular organ involvement and positive serum rheumatoid factor, which can lead to joint deformity and loss of function[1]. Pulmonary involvement is the most vulnerable organ besides the joints in RA patients, and pulmonary lesions are easily ignored in the early stage because of the lack of obvious clinical manifestations, and interstitial pulmonary fibrosis appears in the late stage [2].

2. Clinical Data

2.1 General Data

Forty-two patients with rheumatoid arthritis and pulmonary nodules were selected from January 2021 to December 2021, and the selected cases were all RF factor positive patients, 20 males and 22 females, with ages ranging from 22-79 years, average age 56.7 years, and disease duration ranging from 0.5 to 10 years, average disease duration 5.8 years. The CRP was greater than 50 mg/l in 26 cases and greater than 80mg/l in 16 cases in all cases, and the ratio of men to women with abnormal antinuclear antibodies was: 8/10 cases (+) with different antibody positivity.A statistical analysis was performed on the proportion of men and women with pulmonary nodules in 42 cases of RA, the size and duration of RA pulmonary nodules, the comparison of smoking and nonsmoking groups, and the correlation with the inflammatory index CRP, as shown in the

following Table 1 [3].

Table 1: Gender comparison of RA with pulmonary nodules group

	Male (cases)	Female (cases)
RA lung nodules	20 cases	22 cases
Propotion	47.6%	52.4%

1.2 Chest CT Findings

HRCT of the lungs in all 42 patients suggested varying degrees of pulmonary nodules, and the size of the pulmonary nodules was plotted against the duration of the disease as follows Table 2.

Table 2: Size of RA lung nodules and duration of disease

Nodule size	<5mm	5-10mm	>10mm
Number of cases	13 cases	13 cases	11 cases
Duration of disease	1.23±2.67	1.23±2.67	4.83±1.88

1.3 The 42 Patients with a History of Smoking

The 42 patients with a history of smoking and those without a history of smoking were compared as follows Table 3.

Table 3: Comparison of smoking and nonsmoking groups in RA lung nodules

	Smokers	Non-smokers
Number of cases	20 cases	22 cases
Percentage	47.6%	52.4%

1.4 Degree of Inflammatory Response

42 patients showed various degrees of CRP elevation, and a statistical analysis of patients with RA and pulmonary nodules with elevated CRP was performed as follows Table 4.

Table 4: Comparison of correlation between pulmonary nodules and CRP in 42 cases of RA

CRP	>50mg/l	50-100mg/l	50-100mg/l
Number of cases	12 cases	16cases	14cases
Incidence	28.5%	38.1%	33%

1.5 Imaging Analysis of Rheumatoid Arthritis with Pulmonary Nodules

From the 42 cases of rheumatoid arthritis with pulmonary nodules, a portion of the cases with more typical imaging were selected, as shown below, with nodules ranging in size from 0.1-6 cm in diameter, with large nodules scattered and fine nodules diffusely distributed, are shown in Figure 1-6.

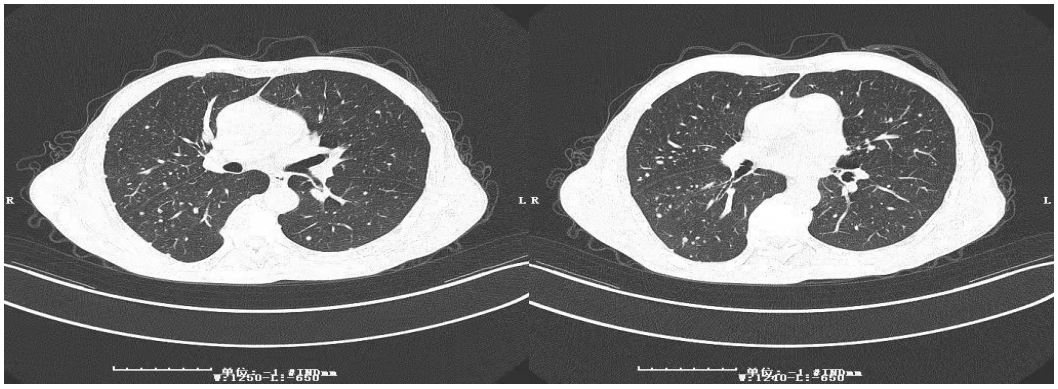

Figure 1: Li x x female 62 years old Medical history 7.1 years

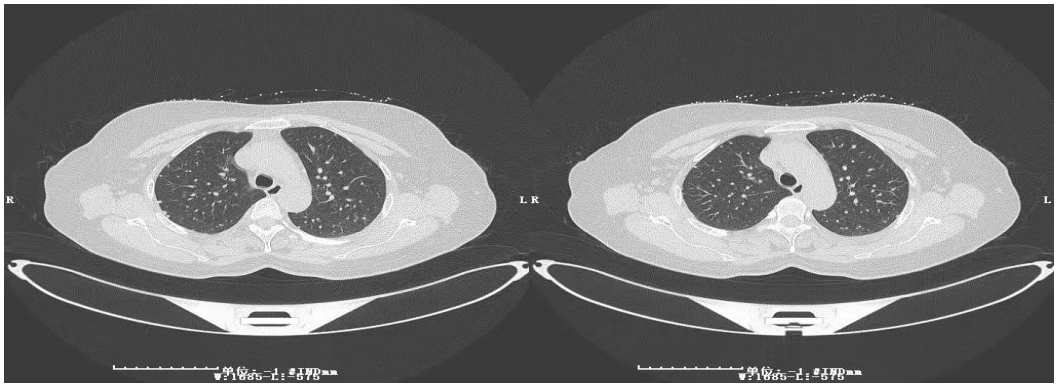

Figure 2: Zhang x Male 58 years old Medical history 4.3 years

Figure 3: Wang ×× Female 72 years old History 3.9 years

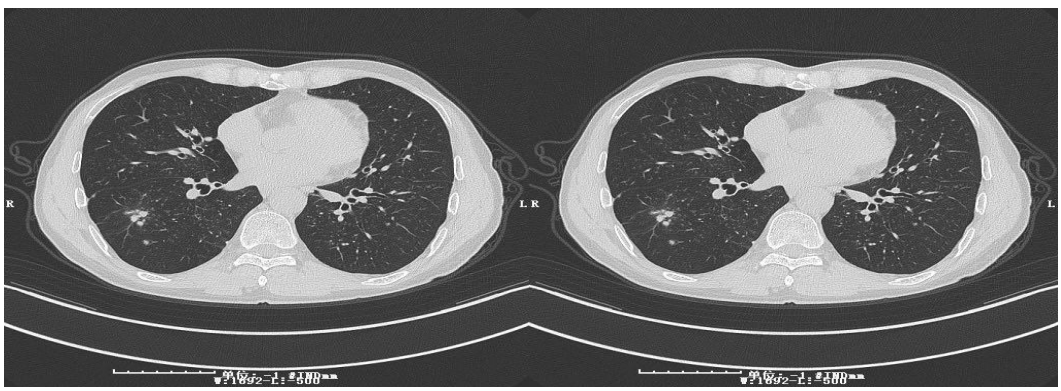

Figure 4: Ao XX Male 33 years old Medical history 1.3 years

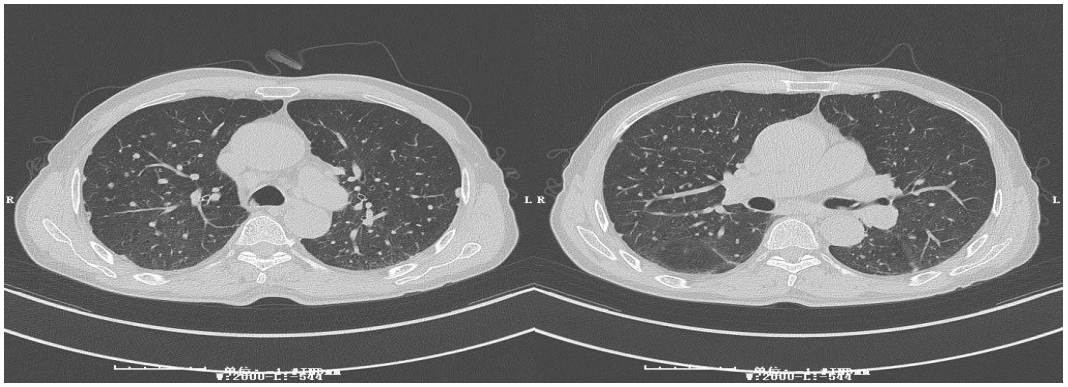

Figure 5: Lu XX Female 39 years old Medical history 4.1 years

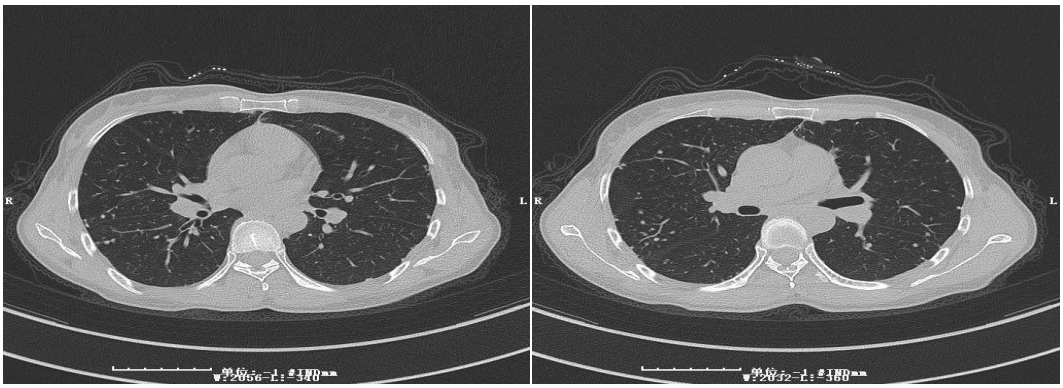

Figure 6: Liu XX Female 51 years old Medical history 2.9 years

2. Analysis

2.1 Prevalence of Rheumatoid Arthritis in Men and Women

There were more women than men in the incidence of rheumatoid arthritis, but there was no significant difference in the proportion of men and women with concurrent pulmonary nodules, which was not statistically significant after statistical comparison [4].

2.2 Comparison of the Length of the Disease Course of Rheumatoid Arthritis

The incidence of pulmonary nodules in 42 patients was compared with the duration of the disease, and it was found that there was no significant correlation between the duration of the disease and the incidence of pulmonary nodules, which should be verified by further clinical studies [5].

2.3 Proportion of Smoking in Rheumatoid Arthritis

For the 42 cases of RA with pulmonary nodules smoking versus non-smoking, the percentage of smokers was 47.6% , 52.4% of non-smokers, and the difference was not significant, so smoking was not the main cause of the occurrence of pulmonary nodules.

2.4 Comparison of CRP Indicators in Patients with Rheumatoid Arthritis

After correlation analysis with CRP in 42 patients with RA pulmonary nodules, CRP is an

important indicator of rheumatoid arthritis activity, and after analysis, it can be concluded that the incidence of nodules in patients with heavy rheumatoid activity is indeed increased, but the difference is not significant, whether there is a correlation is to be further analyzed[6].

3. Conclusions

The incidence of rheumatoid arthritis with pulmonary nodules is associated with a variety of factors and increases with the course of the disease. Overall, after aggressive treatment, the nodules tend to shrink after the inflammatory indexes of patients have decreased, which shows that the occurrence of pulmonary nodules can be slowed down after rheumatic control[7]. Whether they can have a therapeutic effect on pulmonary nodules，it needs to be verified by further clinical studies.

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