

## Rheumatoid Arthritis- Unique Combination of Rheumatic, Cardiac and Pulmonary Manifestation of a Multisystem Disorder.

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### ABSTRACT

Rheumatic arthritis is a common inflammatory disease but combination of cardiac valvular dysfunction involving aortic valve calcification, tricuspid regurgitation and right atrioventricular enlargement with interstitial involvement of lung is very rare manifestation of this multisystem disorder.

**Keywords:** RA-rheumatoid arthritis, RF-Rheumatoid factor, ILD-Interstitial Lung Disease.

### INTRODUCTION

Rheumatoid arthritis is a chronic inflammatory disorder of unknown etiology marked by symmetric, peripheral polyarthritis. It is the most common form of chronic inflammatory arthritis often resulting in joint damage and physical disability. Extra-articular involvement includes heart, lung, skin, etc. The most prevalent valve disease in rheumatoid arthritis is mitral valve insufficiency, varying from 30 to 80% in small case series followed by aortic valve insufficiency varying from 9 to 33%. Diffuse interstitial pulmonary fibrosis in rheumatic arthritis tends to occur more often in rheumatoid factor positive male patients with longstanding nodular disease. The clinical presentation and course of pulmonary fibrosis in rheumatoid arthritis is similar to that of idiopathic pulmonary fibrosis.

### CASE REPORT

A 44-year-old male clerk by occupation presented with one-year gradual onset, progressive orthopnea which increased over recent seven days. Breathlessness was associated with productive cough with whitish mucoid sputum without hemoptysis.



The patient was diagnosed with a case of rheumatoid arthritis since 9 years and was taking azathioprine 50mg B.D. and leflunomide 20mg O.D. The patient was on domiciliary oxygen therapy for the past five months. On examination, he was of average build, conscious, oriented, B.P.=100/70 mm Hg in the right arm sitting, respiratory rate =24/min, and clubbing in both hands and lower limbs. The left wrist showed ulnar deviation with the digits showing ulnar deviation. There was no tenderness or swelling over any joint. The right hand showed similar deformities. Joint mobility was found restricted in the right

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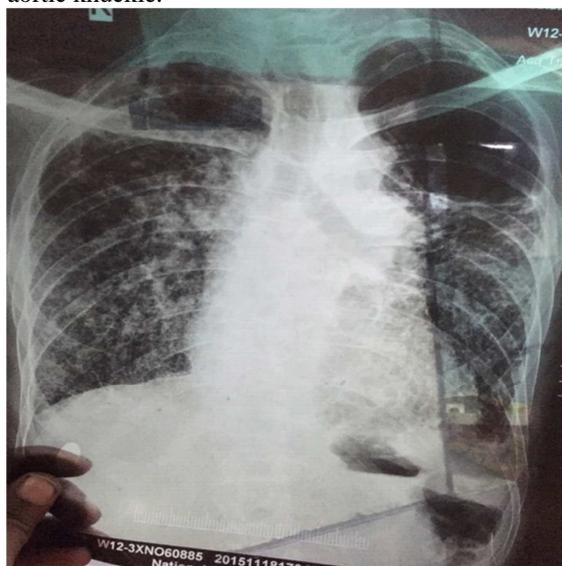
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shoulder, left hip without any swelling and tenderness. Chest auscultation revealed bilateral vesicular breath sounds with bilateral fine late inspiratory crepitations of leathery character more at the lung bases. Cardiovascular examination revealed tachycardia with left parasternal heave and louder P 2. Pansystolic murmur was heard at tricuspid area that accentuate with inspiration. A systolic ejection click was heard in left third intercostal space radiation to carotid artery. Rest of the systemic examination was normal.

### Laboratory examination

Revealed haemoglobin 13.6 gm/dl, TLC 7000 (76% N,20%L,4%M).Platelet count 1,80,000.Liver and renal function tests were within normal limit.

**Chest X-ray-** PA view showed diffuse reticulo-nodular infiltrates with an air bullae in left upper lobe of the lung and cardiomegaly and prominent aortic knuckle.



**HRCT chest-** was done which revealed significant honey combing with fibro-interstitial thickening in bilateral lung fields, mosaic perfusion in visualised bilateral lung bases with thin walled air filled cavity measuring 10\*8\*6 cm in left apical region with aortic valve calcification.



**Echocardiography-** was done which revealed moderate aortic stenosis with pressure gradient of 40 mm Hg with thickened calcified aortic valve, moderate tricuspid regurgitation and mild right atrium and ventricular enlargement.

Pulmonary function test- revealed restrictive pattern of lung disease. Patient was managed with oxygen therapy, low dose diuretic and injectable antibiotics. Patient was managed with oxygen therapy, low dose diuretic and injectable antibiotics.

## DISCUSSION

Extra articular complications usually occur after the onset of arthritis. The pattern of pulmonary involvement in rheumatoid arthritis includes pleural effusion, Interstitial lung disease studies in patients with RA-associated ILD (RA-ILD) suggest that the usual interstitial pneumonia (UIP) pattern is more common in this patient population. High-resolution CT (HRCT) scans appear accurate in identifying UIP pattern in many patients with RA-ILD. Nonspecific interstitial pneumonitis is the second most common pattern, occurring in ~11–32% of patients. The cumulative incidence of any grade of mitral regurgitation (MR) ( $24.6\% \pm 2.4\%$  versus  $15.6\% \pm 2.0\%$  at 10 years;  $p=0.015$ ) and tricuspid regurgitation (TR) ( $23.1\% \pm 2.4\%$  versus  $16.3\% \pm 2.1\%$ ;  $p=0.045$ ) were significantly higher in patients with RA compared to non-RA subjects.<sup>[6]</sup>

The treatment of rheumatoid arthritis with DMARDs is also not free from side effects. Treatment with leflunomide and methotrexate are more commonly associated with ILD. Treatment with Leflunomide as happened in this case increase the risk of ILD as compared to general population.<sup>[5]</sup>

The case presented is a unique combination of rheumatologic, pulmonary and cardiac manifestations of a truly multisystemic disease.

## CONCLUSION

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