RESEARCH PAPER

Elderly Onset Rheumatoid Arthritis: Late-Onset Rheumatoid Arthritis Presenting with Usual Interstitial Pneumonia Pattern - A Case Report

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ABSTRACT

Rheumatoid arthritis (RA) is a chronic autoimmune inflammatory disorder that primarily affects synovial joints and occurs most commonly in females between 30 and 50 years of age [1,2]. Extra-articular manifestations are well recognized, with interstitial lung disease (ILD) being one of the most serious complications [6,7]. Among ILD patterns, usual interstitial pneumonia (UIP) is the most common and carries a poorer prognosis compared to other subtypes [9,10]. We report a case of a 75-year-old woman with late-onset seropositive RA presenting predominantly with respiratory symptoms, including progressive dyspnea, along with generalized body pain and fever. Laboratory evaluation revealed markedly elevated rheumatoid factor (RF) and anti-cyclic citrullinated peptide (anti-CCP) antibodies. High-resolution computed tomography (HRCT) of the chest demonstrated findings consistent with a UIP pattern. This case highlights the diagnostic challenges associated with elderly-onset RA presenting with predominant pulmonary involvement and underscores the importance of early recognition and multidisciplinary management to improve outcomes.

Keywords: rheumatoid arthritis, interstitial lung disease, usual interstitial pneumonia, anti-CCP, elderly-onset RA, autoimmune lung disease

How to cite this article: Singla L, Sharma D, Goyal K, Goyal V. Elderly Onset Rheumatoid Arthritis: Late-Onset Rheumatoid Arthritis Presenting with Usual Interstitial Pneumonia Pattern - A Case Report. Int J Drug Deliv Technol. 2026;16(37s): 769-772. DOI: 10.25258/ijddt.16.37s.99

Source of support: Nil.

Conflict of interest: None

Introduction

Rheumatoid arthritis (RA) is a systemic autoimmune disease affecting approximately 0.5–1% of the global population and is characterized by chronic inflammation of synovial joints with a wide range of extra-articular manifestations [1,2]. Pulmonary involvement is one of the most clinically significant complications, encompassing interstitial lung disease (ILD), pleural disease, airway involvement, and pulmonary vasculitis [6,7]. Among these, RA-associated ILD (RA-ILD) is associated with substantial morbidity and mortality.

Late-onset rheumatoid arthritis (LORA), defined as disease onset after the age of 60 years, often presents with atypical clinical features including acute onset, higher inflammatory burden, and increased systemic manifestations compared to younger-onset RA [4,5]. In some cases, pulmonary manifestations may precede or overshadow articular symptoms, leading to delays in diagnosis. This is particularly relevant in elderly patients, where nonspecific respiratory symptoms may initially be attributed to other comorbid conditions.

The pathogenesis of RA-associated ILD is complex and involves immune-mediated mechanisms, including the production of autoantibodies such as rheumatoid factor (RF) and anti-cyclic citrullinated peptide (anti-CCP), which are strongly associated with pulmonary involvement [11,12]. Chronic alveolar epithelial injury, cytokine-mediated inflammation (notably tumor necrosis factor-alpha and interleukin-6), and fibroblast activation contribute to progressive pulmonary fibrosis resembling idiopathic pulmonary fibrosis (IPF).

High-resolution computed tomography (HRCT) is the imaging modality of choice for diagnosing ILD and differentiating between patterns. The usual interstitial pneumonia (UIP) pattern, characterized by basal and subpleural reticulation, honeycombing, and traction bronchiectasis, is the most common subtype observed in RA-ILD and is associated with a poorer prognosis [9,10].

Management of RA-associated UIP remains challenging and requires a multidisciplinary approach. Immunosuppressive therapies, including corticosteroids and steroid-sparing agents such as azathioprine or mycophenolate mofetil, are commonly used. However, certain disease-modifying antirheumatic drugs (DMARDs), particularly methotrexate, may be avoided in patients with significant lung involvement. Recent evidence supports the role of antifibrotic agents such as nintedanib in slowing disease progression in fibrosing ILDs, including RA-associated ILD [13,14].

In this report, we describe a case of elderly-onset seropositive RA presenting predominantly with respiratory symptoms and a UIP pattern on HRCT, highlighting the importance of early recognition of atypical presentations.

Case Presentation

The patient is a 75 year old female who was apparently asymptomatic 6 months ago when she gradually developed pain and stiffness in multiple joints. The pain initially began insidiously and was of mild to moderate intensity, dull aching in nature, and progressive over time.

The pain involves both knee joints, carpometacarpal joints, hip

joints, and elbow joints, with mild involvement of the proximal and distal interphalangeal (PIP and DIP) joints of both hands. The joint involvement is bilateral and symmetrical.

Over the past 4 days, she has noticed worsening of pain and stiffness, associated with mild restriction of movement, particularly during walking and performing daily activities. The pain is exacerbated by rest and analgesics.

She reports morning stiffness lasting for approximately 60 minutes over the past 10-14 days, which improve gradually with activity. She denies any history of joint redness, marked swelling, or warmth. No deformities have been noticed by the patient or her relatives.

There is no history of trauma, fever, weight loss, skin rash, photosensitivity, oral ulcers, eye symptoms, Raynaud's phenomenon, or back pain. No history suggestive of psoriasis or preceding diarrhoea/urinary infection.

In addition, the patient complains of shortness of breath for the past G months, which was insidious in onset and gradually progressive.
Currently, she experiences breathlessness on walking approximately 100 meters or climbing one flight of stairs, corresponding to mMRC Grade 3–4 dyspnea.
The breathlessness is not associated with paroxysmal nocturnal dyspnea (PND), orthopnea, chest pain, palpitations, or cough with expectoration.
There is no history of wheezing, hemoptysis, or lower limb swelling.

On physical examination, vital signs were within normal limits with auscultation revealing bilateral basal fine crepitations with symmetrical tenderness and swelling of wrist,MCP and PIP joints.

Laboratory tests revealed a hemoglobin level of 7 g/dl, an erythrocyte sedimentation rate(ESR) of 31 mm/h, a C-reactive protein(CRP) level of 23.U4mg/dl, rheumatoid factor(RF) is 1127.5 IU/ml with Anti-CCP antibody is U0.8 IU/ml which is strongly positive. Liver function tests show a SGOT levels of 2UIU/L , a SGPT levels of 20 IU/L and alkaline phosphatase at 1U3 U/L. Renal function tests shows a serum creatinine level of 1.4 mg/dl, urea level of 52.3mg/dl suggestive of mild renal impairment. Vitamin B12 levels are 1000 pg/ml with normal serum ferritin and normal vitamin D levels. Patient has history of Type 2 diabetic mellitus, controlled with HbA1clevels of 7.0% and average blood glucose 150mg/ dl. Viral markers are non-reactive.
There is no similar past history.
There is no family history of autoimmune or rheumatologist disorders such as rheumatoid arthritis, osteoarthritis, or gout.

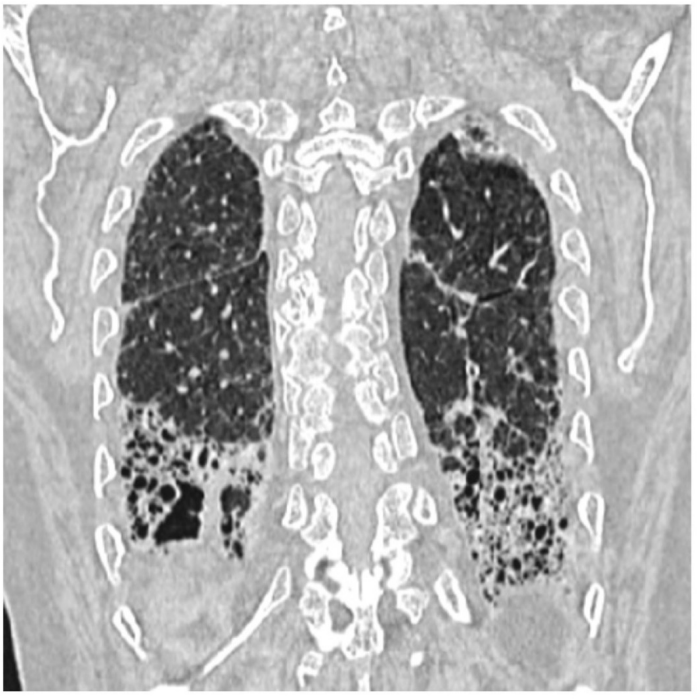

Figure 1 is HRCT shows honeycombing pattern of fibrocystic changes and ground-glass opacities with interlobular septal thickening.
Traction bronchiectasis, predominantly involving bilateral lower lobes which is suggestive of interstitial lung disease, likely UIP pattern.

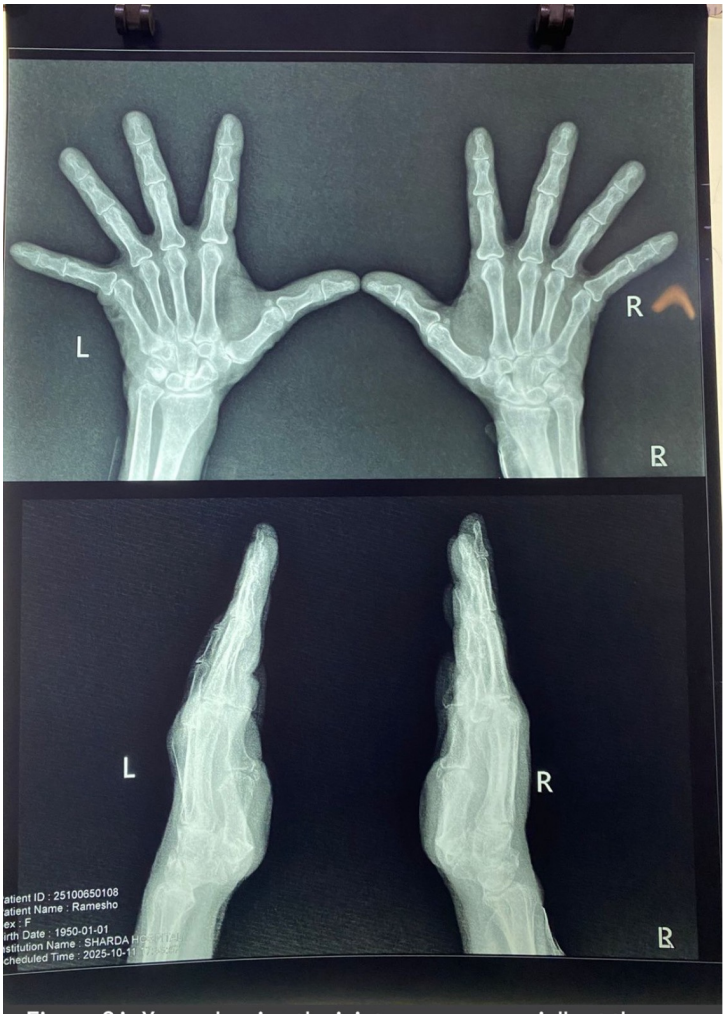

Figure 2 is X-ray showing the joint spaces, especially at the metacarpophalangeal (MCP) and proximal interphalangeal (PIP) joints, appear narrowed.
There may be mild periarticular osteopenia (decreased bone density near joints).
Possible marginal erosions are visible near some finger joints.

Diagnosis

- Late-Onset Seropositive Rheumatoid Arthritis (RA)
- Rheumatoid Arthritis–Associated Interstitial Lung Disease (UIP pattern)
- Anemia of chronic disease
- Controlled Type 2 Diabetes Mellitus

Management and Outcome

The patient was started on:

- Prednisolone 10 mg/day (anti-inflammatory)
- Azathioprine as a steroid-sparing immunosuppressant (methotrexate avoided due to lung involvement)
- Tab Hydroxychloroquine 200mg twice daily
- Bronchodilators and supplemental oxygen as needed
- Proton pump inhibitor and calcium + vitamin D supplementation
- Glycemic and thyroid control optimized
- Advised regular rheumatology and pulmonology follow-up.

Over two weeks of treatment, the patient's joint pain and breathlessness showed mild improvement. She was discharged with advice for long-term follow-up and consideration of antifibrotic therapy if fibrosis progresses.

Discussion

Rheumatoid arthritis–associated interstitial lung disease (RA-ILD) is one of the most severe extra-articular complications, with a reported prevalence between 10–20%. Among ILD patterns, UIP is the most common, representing up to G0% of RA-ILD cases [3,4].

Pathogenesis involves autoimmune-mediated inflammation and fibrosis, triggered by citrullinated peptides and immune complex deposition in the alveolar interstitium. Elevated anti-CCP and RF titers, as seen in this case, correlate strongly with pulmonary involvement [5].

UIP in RA is radiologically and histologically indistinguishable from idiopathic pulmonary fibrosis (IPF). It carries a poor prognosis with median survival of 3–8 years.

High-resolution CT (HRCT) remains the gold standard for non-invasive diagnosis, revealing honeycombing, traction bronchiectasis, and basal-predominant fibrosis.

Treatment is challenging. Conventional DMARDs like methotrexate can exacerbate lung disease, whereas azathioprine, mycophenolate mofetil, or rituximab are safer alternatives.

Corticosteroids may offer symptomatic relief but do not alter the fibrotic course significantly. Recent studies suggest antifibrotic agents such as nintedanib and pirfenidone reduce progression of fibrosis in RA-UIP patients [6].

This case underscores the importance of early screening for pulmonary symptoms in elderly RA patients and the role of multidisciplinary management.

Conclusions

Late-onset rheumatoid arthritis complicated by UIP-type ILD is an underrecognized but clinically significant entity. This case emphasizes that respiratory symptoms in elderly RA patients warrant detailed evaluation, including HRCT, to identify ILD early. Timely diagnosis and coordinated management between rheumatology and pulmonology can improve outcomes and slow disease progression.

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