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Case Report

Polyserositis as an early presentation of systemic lupus erythematosus in an elderly patient: diagnostic challenges and clinical implications

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ABSTRACT

Systemic lupus erythematosus (SLE) is an autoimmune disorder with multisystem involvement, predominantly affecting young women. Diagnosis after the age of 50 years is rarely encountered, and late-onset SLE frequently presents with atypical features that differ markedly from classic manifestations. Polyserositis-defined as simultaneous inflammation of the pleura, peritoneum, and pericardium-is an uncommon and often under recognised presentation of SLE, particularly in elderly patients. We report a 70-year-old woman with no known comorbidities who presented with bilateral symmetric polyarthritis (small joint predominant), non-scarring alopecia, moderate pleural and pericardial effusion, ascites, bilateral pitting pedal oedema, and proteinuria. On investigation, ANA was strongly positive (3+, titre 1:720) with positivity for anti-dsDNA, anti-nucleosome, anti-Smith, and anti-U1RNP antibodies, along with low complement levels (C3 and C4), fulfilling ACR criteria for SLE. Infectious and malignant aetiologies were systematically excluded. The patient was initiated on pulse methylprednisolone followed by oral prednisolone, mycophenolate mofetil, diuretics, and albumin transfusion, with marked clinical improvement. At two-month follow-up, proteinuria had reduced significantly (900 mg/day to 190 mg/day) and repeat chest imaging confirmed bilateral clear lung fields. This case highlights the importance of including SLE in the differential diagnosis of unexplained polyserositis in elderly patients, where classical mucocutaneous features may be absent. Polyserositis in SLE may indicate severe systemic inflammation requiring careful therapeutic monitoring. Increased awareness, application of evidence-based guidelines, and early rheumatology referral are key to timely diagnosis and improved outcomes in this patient group.

Keywords: Pleural effusion, Ascites, Polyserositis, Systemic lupus erythematosus, SLE, Late-onset SLE, Elderly, Proteinuria, Antinuclear antibodies, ANA, Mycophenolate mofetil

INTRODUCTION

Polyserositis, involves inflammation of pleura, pericardium, and peritoneum. It is one of the significant manifestations of systemic lupus erythematosus (SLE) in elderly patients. SLE is an autoimmune disease mostly affecting young women, but its late onset form is defined as disease onset after 50 years of age that shows unique and atypical clinical features, including manifestations of serositis such as pleuritis and pericarditis.[1] Elderly patients tend to present with less typical mucocutaneous and renal involvement but more frequent polyserositis, which will delay the diagnosis due to overlapping symptoms with other age-related comorbidities and systemic illnesses.[2] Elderly patients may not present with typical dermatological or musculoskeletal presentations, Rather they present with less common manifestations such as pleural effusion or pericardial effusion.[3] polyserositis in elderly SLE can manifest as dyspnoea, chest pain, edema, and ascites, often requiring a multidisciplinary approach for diagnosis and management.[4] Serositis may be the dominant clinical feature and often signifies more active

systemic inflammation requiring immediate targeted immunosuppressive therapy.[5] According to the 2025 American College of Rheumatology (ACR) guidelines, management of serositis includes use of glucocorticoids for refractory or severe cases, with early addition of immunosuppressants in multisystem involvement to enhance control and reduce glucocorticoid toxicity. There exist diagnostic challenges with respect to polyserositis in elderly-onset SLE due to its rarity and varied clinical expression.

CASE REPORT

A 70-year-old female who had no known comorbidities, presented to emergency room with complaints of bilateral pedal edema for past 8 months. She also had abdominal distension for past 6 months. Alongside, she also noticed frequent Hair fall over past 6 months. She had Breathing difficulty which was insidious onset and gradually progressive nature over past 6 months. Initially for past 6 months, she had difficulty breathing on carrying out normal day to day activities such as washing clothes, utensils etc. But over past one week duration, she noticed that her abdominal distension, pedal edema and breathing difficulty worsened to a point where she feels dyspnoeic even to leave from bed. For past seven days, at rest also, she is having breathing difficulty, and she prefers sitting position supported with three to four pillows. She is dyspnoeic while lying down. No history of difficulty breathing 2 to 2.5 hours after going to sleep. No complaints of chest pain.

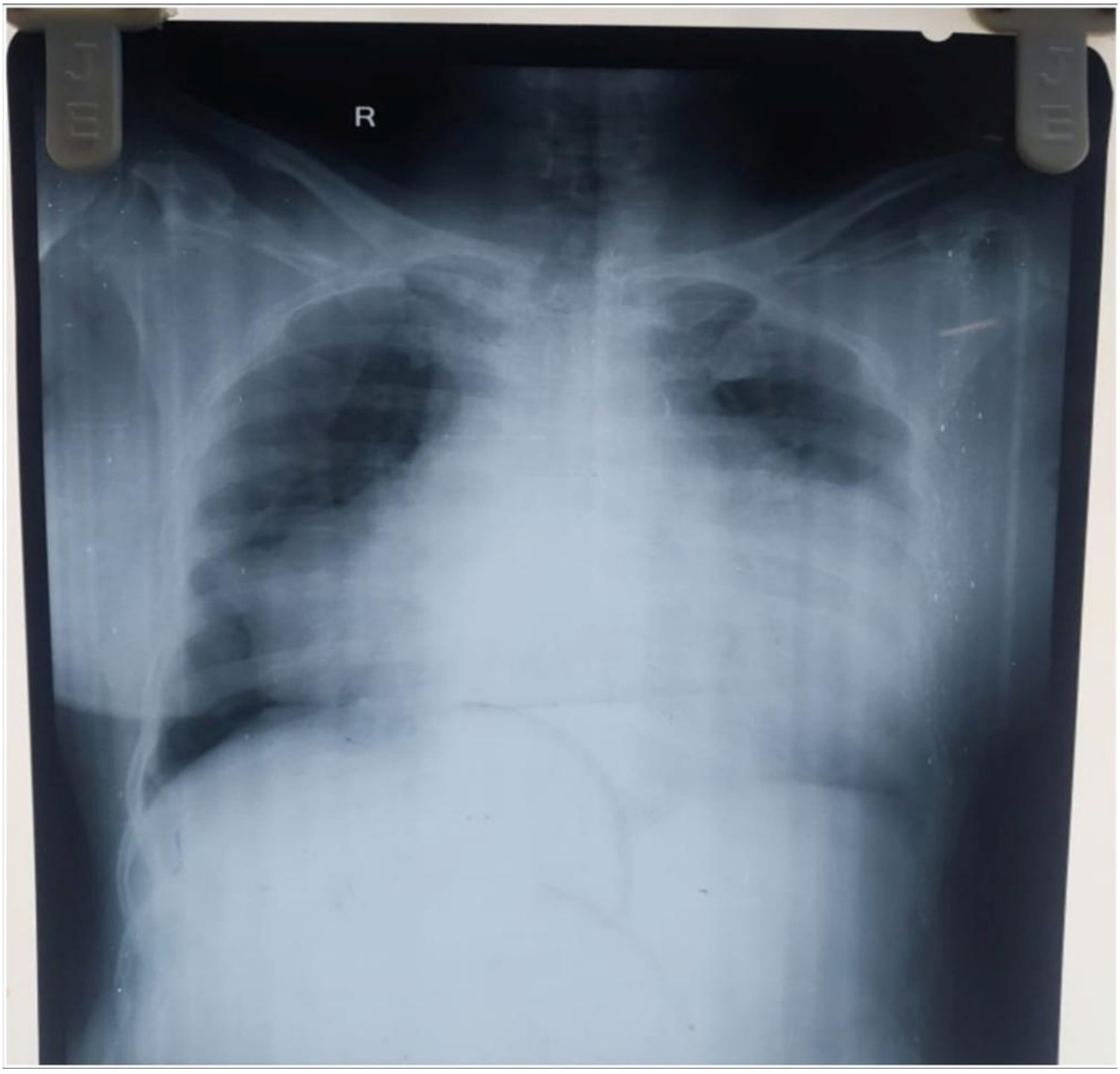

Figure 1: Chest X-ray PA view showing left sided pleural effusion with cardiothoracic ratio more than 0.5 (cardiomegaly).

She also had complaints of joint pain and stiffness involving wrist and metacarpophalangeal joints bilaterally. No history of TB contact, fever with prolonged cough, altered bowel habits, weight loss, haemoptysis. No history of any malignancy in past. On Clinical examination, she was tachypnoeic, Blood pressure 180/110 mm Hg, pulse rate 80 beats per minute, Spo2 88% Room air. JVP was elevated, right hypochondrium tenderness present, bilateral pitting pedal edema present, no pallor, icterus or cyanosis. On Auscultation, Bilateral predominant basal crepitation present, air entry decreased over left side posteriorly. On percussion, dull note is obtained in left infra-axillary, axillary, infra scapular areas. Vocal resonance is reduced over left side. She received injection furosemide 60 mg intravenously stat at emergency room. she was kept propped up position and connected on oxygen inhalation with face mask 8 Litres/minute.

Chest X-ray PA view was suggestive of left sided moderate pleural effusion with cardiothoracic ratio more than 0.5 (cardiomegaly). Blood and urine investigations showed Hb 12.1 gm/dl, Total leucocyte count 11500/mm³, Platelet count 1.6 Lakhs/mm³, creatinine 0.6 gm/dl, urine ACR 765 mg/g , 24 hour urine protein 900 milligrams per day , serum albumin 2.4mg/dl, serum globulin 3.2mg/dl, ESR 140, CRP<0.5 , AST 23 , ALT 20 , Urine examination showed Albumin 2+ , sugar nil , pus cells 1 to 2 per High power field. serum ferritin 960 elevated, serum cholesterol 109 mg/dl, serum triglycerides 100, HDL levels 50, INR 1.1, Serum LDH levels 626, Hep B Hep C HIV 1 and 2 ELISA test came negative. Whole abdomen showing Moderate ascites, dilated IVC, congestive hepatomegaly, normal kidney size, renal echotexture normal, cortical medullary differentiation maintained.

Mantoux test came Negative after 72 hours. 2D echocardiography showing moderate pericardial effusion not in tamponade, moderate PAH, severe tricuspid regurgitation, LV ejection fraction 55%, no regional wall motion abnormality. HRCT thorax showing left sided moderate pleural effusion, moderate pericardial effusion, cardiomegaly, prominent pulmonary artery.

Pleural fluid analysis showed Albumin levels 3.8mg/dl, LDH levels 548, normal sugar levels, 140 cells/mm³ with 90% lymphocytes. According to lights criteria, it fulfilled exudative picture. Pleural fluid 500 ml was sent for malignant cytology which came as negative, ADA levels 6.0, CBNAAT negative, gram stain negative, fungal stain negative, culture and sensitivity negative. On strong clinical suspicion, we have sent ANA profile which came out to be positive with 3+ intensity 1:720 titre. Antibodies against dsDNA, nucleosome, smith and U1RNP were positive. Low C3 and C4 levels were also demonstrated.

She was initially managed with prophylactic antibiotics, diuretics and Albumin transfusion. She fulfilled ACR/ American College of Rheumatology criteria for SLE with features of arthritis, nephritis, serositis and positive ANA. She was started on injection methylprednisolone 750 mg intravenously once daily for 3 days duration followed by Oral prednisolone 50 mg per day for 4 weeks duration, followed by tapering at the rate of 5 mg every two weeks. She also received prophylactic oral antibiotics, calcium and pantoprazole. She was discharged with oral MMF 2 grams per day, oral prednisolone 50 mg per day.

Follow up of the patient

We did follow up of the patient initially after 2 weeks, she was doing well. She was comfortable, not dyspnoeic, normotensive, pedal edema subsided. We advised her to continue the same treatment and tapered the dose of oral steroids. On 2 month follow up visit, her proteinuria significantly reduced to 24-hour urine protein level of 190 mg/day, repeat Chest x-ray showed bilateral clear lung fields.

She is under follow up of our rheumatology department on OPD basis. No re-admission or worsening of symptoms were noted after discharge. Drug compliance is being ensured by frequently contacting the patient over phone and monthly supply of MMF and other tablets from our central pharmacy, as non-compliance can have detrimental effects on patient health. She responded well to immunosuppressive therapy with pulse steroid and MMF. Hence this case highlights the importance of suspecting autoimmune disorder in an elderly patient presenting with features suggestive of serositis.

DISCUSSION

This case denotes the importance of considering systemic lupus erythematosus (SLE) in elderly patients presenting with multisystem involvement and serositis. The patient's clinical features—progressive bilateral pedal edema, abdominal distension, moderate pleural effusion, moderate pericardial effusion and arthritis along with laboratory evidence of nephritis (proteinuria), low C3,C4, elevated ESR and low CRP raised suspicion for an underlying autoimmune etiology.[6] The diagnosis was confirmed by a strongly positive ANA with high titres and specific autoantibodies (anti-dsDNA, anti-nucleosome, anti-Smith, and anti-U1RNP), fulfilling ACR criteria for SLE.

This case is notable for the late onset of SLE, which is less common and often presents with severe manifestations such as serositis and nephritis.[7] TB, malignancy and infection were excluded with appropriate investigations for a clear workup of polyserositis in an elderly patient. Patient was treated with high dose steroids and MMF leading to marked clinical improvement, showing the importance of early diagnosis and initiation of immunosuppressive therapy.[8]

Similar cases have been reported in the past, Hasegawa et al reported that early diagnosis and treatment of elderly onset SLE is important, as late treatment can lead to worsening of multi organ involvement.[3] Ceasovschih et al also noted that in a 93-year-old patient, late onset SLE

shows more incidence of polyserositis.[1] This case denotes that, any elderly patient presenting with features of polyserositis, a differential diagnosis of SLE to be kept in mind apart from lymphoma/malignancy/TB.

CONCLUSION

This case is important, as in elderly patients, the classical mucocutaneous features may not be there. Instead, polyserositis may be the only presentation. Prompt recognition, confirmed by high titre ANA (1:720) and specific autoantibodies, alongside ARA criteria fulfilment, enabled effective therapy with pulse methylprednisolone and MMF, yielding dramatic resolution of pleural effusion, ascites, nephritis, and proteinuria (from 900 mg/day-190 mg/day).

In Conclusion, clinicians must maintain high suspicion for SLE in elderly polyserositis, as immunosuppressive therapy yields favourable outcomes, preventing morbidity and mortality. Multidisciplinary care involving physician, rheumatologist, cardiologist is crucial in managing such complex cases

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