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Case Report
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Seven Days to Hemodialysis: Acute Renal Failure in a Patient with Undiagnosed Systemic Lupus Erythematosus (SLE) — A Case Report

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Abstract

Systemic lupus erythematosus (SLE) is a chronic autoimmune disease affecting multiple organ systems, including the kidneys. Renal involvement, or lupus nephritis (LN), can progress to end-stage renal disease (ESRD), but rapid progression to dialysis dependence within days is rare. We report a 61-year-old female with no prior SLE diagnosis who presented with generalized edema, shortness of breath, fatigue, and scaly cutaneous lesions. Initial evaluation suggested decompensated heart failure. During hospitalization, urinalysis revealed nephrotic-range proteinuria, autoimmune testing demonstrated positive antinuclear antibody (ANA) and SS-A/Ro and SS-B/La antibodies with low C3 complement. Despite early high-dose steroid therapy, renal function deteriorated rapidly, requiring hemodialysis within seven days. Skin biopsy later confirmed cutaneous lupus, and a renal biopsy was planned to classify lupus nephritis since this service was not available at our institution. This case underscores the possibility of extremely rapid renal deterioration in undiagnosed SLE and highlights the need for clinicians to maintain a high index of suspicion for SLE in patients with systemic symptoms, even with atypical serology (negative anti-dsDNA), to prevent irreversible renal injury.

Keywords: Systemic Lupus Erythematosus, Lupus Nephritis, Nephrotic Syndrome, Hemodialysis, Antinuclear Antibody, Cutaneous Lupus

Introduction

Systemic lupus erythematosus is an autoimmune disease that can affect virtually every organ system in the body [1]. The clinical presentation is highly variable and often overlaps with other diseases, making diagnosis challenging. Laboratory tests, including ANA, anti-dsDNA, and complement levels, are used alongside clinical findings to establish the diagnosis [2]. Lupus nephritis occurs in approximately 30–50% of patients with SLE and represents a significant contributor to morbidity and mortality [3]. While progression to ESRD is typically gradual over months to years, some patients may experience rapid deterioration over weeks or even days, particularly in cases of severe or poorly controlled disease [1-3]. Here, we present a case of a 61-year-old woman with no prior SLE history who developed nephrotic syndrome and ESRD requiring hemodialysis within seven days of hospital admission.

Case Report

A 61-year-old Puerto Rican Hispanic female with a medical history notable for type 2 diabetes mellitus, hypertension, hypercholesterolemia, lumbar and cervical radiculopathy, and a previous transient ischemic attack presented to the emergency department with generalized edema and shortness of breath of two days' duration. The patient also reported fatigue, decreased exercise tolerance, and multiple erythematous, scaly patches on her left forearm, nasal bridge, and central frontal scalp. These skin lesions, which had developed over the preceding two to three months, reportedly worsened with sun exposure and alcohol intake (Figure 1).

She had no known history of heart failure or autoimmune disease.

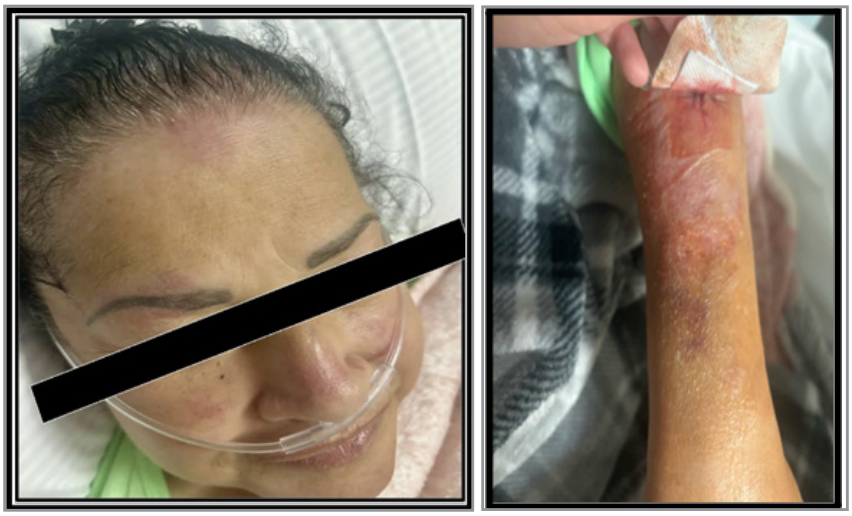

Figure 1: Scaly atrophic lesions with scarring of the malar distribution over the cheek and nose (butterfly rash) and forearm. Written informed consent for publication of this image was obtained from the patient.

On initial examination, the patient was hemodynamically stable. Pulmonary evaluation revealed bilateral basal crackles and decreased breath sounds. Cardiovascular assessment demonstrated a systolic murmur at the left sternal border. The abdomen was mildly distended but non-tender to palpation in all quadrants. Bilateral lower-extremity pitting edema (+2) was present without cyanosis. Cutaneous examination confirmed scaly erythematous patches consistent with photosensitive lesions. All other systems were unremarkable.

Initial laboratory studies demonstrated a white blood cell count of 6.75 × 10^3/μL and a stable hemoglobin level of 12.9 g/dL. Renal function testing revealed a mildly elevated serum creatinine of 1.23 mg/dL, corresponding to an estimated creatinine clearance of 52 mL/min. Chest radiography demonstrated moderate bilateral pleural effusions suggestive of pulmonary edema (Figure 2).

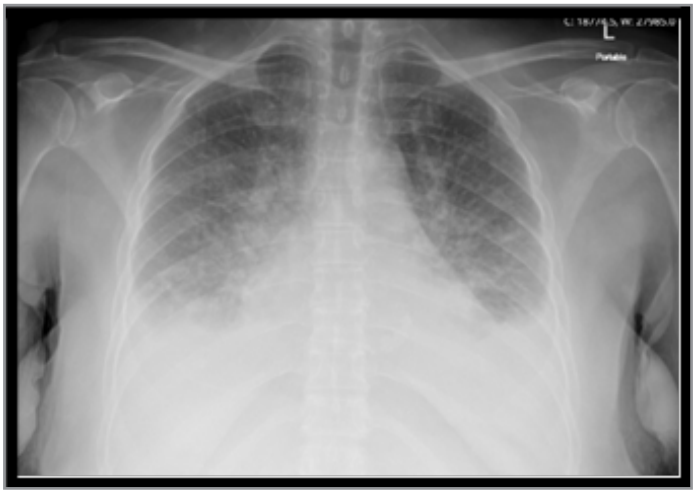

Figure 2: Moderate sized bilateral pleural effusions

Cardiac markers showed an elevated troponin level of 21 ng/L and a B-type natriuretic peptide level of 2,235 pg/mL. Based on these findings, the patient was initially diagnosed with decompensated heart failure and started on intravenous furosemide 20 mg every eight hours for three doses with careful fluid monitoring. Noninvasive ventilation with bilevel positive airway pressure was used as needed at night. A Foley catheter was placed for accurate urine output monitoring, and guideline-directed medical therapy for heart failure was adjusted according to the patient's clinical status.

Urinalysis revealed protein levels greater than 1,000 mg/dL, prompting a 24-hour urine collection that confirmed nephrotic-range proteinuria of 7 g. Renal ultrasound demonstrated normal cortical thickness with preserved corticomedullary differentiation. Transthoracic echocardiography revealed a left ventricular ejection fraction of 55–60% with pseudonormal diastolic function. Given the significant proteinuria and cutaneous findings, nephrology consultation was obtained. Additional laboratory testing demonstrated a positive ANA titer of 1:640, negative anti-dsDNA, positive SS-A/Ro and SS-B/La antibodies, low C3 complement (70 mg/dL), normal C4 complement (15 mg/dL), and an elevated erythrocyte sedimentation rate (>140 mm/hr). Other autoimmune markers, including p-ANCA, c-ANCA, PR3, MPO, Scl-70, and anti-Smith antibodies, were negative. Infectious studies, including HIV, RPR, COVID-19 antigen, and hepatitis panel, were non-reactive.

Despite initiation of pulse high-dose intravenous corticosteroids on hospital day four, renal function continued to decline. By day

seven, serum creatinine had increased to 3.65 mg/dL and blood urea nitrogen to 109 mg/dL, accompanied by moderate hyponatremia, mild hyperkalemia, metabolic acidosis, and hyperphosphatemia. Persistent anasarca and oliguria prompted placement of a left internal jugular hemodialysis catheter, and hemodialysis was initiated without complications. The patient's cutaneous lesions improved following pulse steroid therapy. A skin biopsy of the left forearm demonstrated perivascular dermatitis with myxoid change, consistent with cutaneous lupus.

A renal biopsy was planned as an outpatient procedure because biopsy services were unavailable at our institution. The patient was discharged on oral prednisone 70 mg daily (1 mg/kg). Subsequent outpatient follow-up demonstrated marked improvement in renal function, resolution of edema, and regression of cutaneous lesions. Hemodialysis was successfully discontinued after approximately two months.

Discussion

Systemic lupus erythematosus is more prevalent among women and can affect multiple organ systems, including renal, cardiovascular, hematologic, musculoskeletal, neuropsychiatric, and integumentary systems [1-4]. Lupus nephritis remains a major determinant of morbidity and mortality in SLE. Although progression to ESRD is usually slow, rapid renal deterioration has been reported in patients with high proteinuria, hypocomplementemia, and abrupt rises in serum creatinine [1-3]. This patient demonstrated an exceptionally rapid decline in renal function over seven days despite initiation of high-dose corticosteroids, highlighting the importance of early recognition and prompt intervention.

ANA testing is highly sensitive for SLE, with reported sensitivity of approximately 95%, but lacks specificity, necessitating interpretation in conjunction with clinical findings and additional autoantibodies [2]. Complement levels, SS-A/Ro and SS-B/La antibodies, and skin biopsy findings were instrumental in establishing the diagnosis in this case. Renal biopsy remains the gold standard for classifying lupus nephritis and guiding therapy; however, treatment should not be delayed in rapidly progressive disease [1-3]. Hydroxychloroquine is recommended for all patients with SLE due to its role in preventing disease flares, organ damage, and thrombotic events [4,5]. The patient's outpatient course demonstrates that recovery of renal function is possible even after temporary dialysis in cases of acute, rapidly progressive lupus nephritis.

Conclusion

This case illustrates the potential for rapid-onset lupus nephritis progressing to dialysis dependence within days in a patient with previously undiagnosed SLE. Clinicians should maintain a high index of suspicion for SLE in patients presenting with nephrotic-systemic manifestations, proteinuria, and cutaneous lesions regardless of age, as multisystem involvement with positive autoimmune markers warrants urgent evaluation even when serology is atypical or anti-dsDNA is negative. Negative anti-dsDNA does not exclude SLE, as 30–40% of patients present with positive ANA and anti-SSA/SSB antibodies without anti-dsDNA positivity. Hispanic patients experience higher rates of lupus nephritis and more aggressive disease progression, necessitating heightened clinical awareness in this population. Most importantly, dialysis-dependent acute kidney injury due to lupus nephritis may be reversible with prompt immunosuppressive therapy, and treatment should not be delayed while awaiting renal biopsy in rapidly progressive disease [6,7].

Ethics Considerations

Written informed consent for publication of this case report and accompanying images was obtained from the patient. The consent form is available for review. The protocol was approved by the Ponce Health Sciences University Institutional Review Board (Protocol No. 2411227095, 2025).

Acknowledgments

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Conflict of Interest

The authors declare no conflicts of interest.

References

1. Mahajan, A., Amelio, J., Gairy, K., Kaur, G., Levy, R. A., Roth, D., & Bass, D. (2020). Systemic lupus erythematosus, lupus nephritis, and end-stage renal disease: A pragmatic review mapping disease severity and progression. Lupus, 29(9), 1011–1020. https://doi.org/10.1177/0961203320932219
2. Aringer, M., Costenbader, K., Daikh, D., Brinks, R., Mosca, M., Ramsey-Goldman, R., Smolen,
3. Musa, R., Rout, P., & Qurie, A. (2025). Lupus nephritis. StatPearls Publishing. https://www.ncbi.nlm.nih.gov/books/NBK499817/
4. Lam, N. C. V., Ghetu, M. V., & Bieniek, M. L. (2023). Systemic lupus erythematosus: Primary care approach to diagnosis and management. American Family Physician, 107(2), 148–159.
5. Jorge, A. M., Mancini, C., Zhou, B., Lu, N., Rai, S. K., Zhang, Y., & Choi, H. K. (2022). Hydroxychloroquine dose and risk of systemic lupus erythematosus flares. JAMA, 328(14), 1458–1460. https://doi.org/10.1001/jama.2022.16404
6. J. S., Wofsy, D., & Johnson, S. R. (2019). 2019 European League Against Rheumatism/American College of Rheumatology classification criteria for systemic lupus erythematosus. Annals of the Rheumatic Diseases, 78(9), 1151–1159. https://doi.org/10.1136/annrheumdis-2018-214819
7. Salgado Guerrero, M., Londoño Jiménez, A., Dobrowolski, C., Mowrey, W. B., Goilav, B., Wang, S., & Broder, A. (2020). Systemic lupus erythematosus activity and hydroxychloroquine use before and after end-stage renal disease. BMC Nephrology, 21, Article 450. https://doi.org/10.1186/s12882-020-02083-2