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SUCCESSFUL LONG-TERM MANAGEMENT OF LUPUS NEPHRITIS WITH DISSEMINATED RENAL AND GASTROINTESTINAL CRYPTOCOCCOSIS: A CASE REPORT

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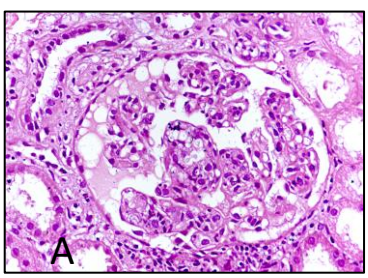
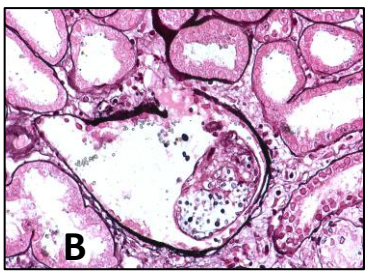
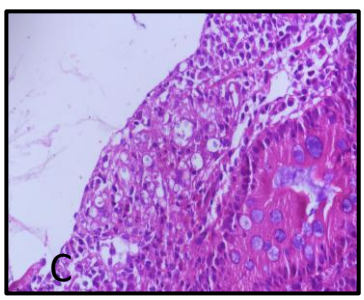
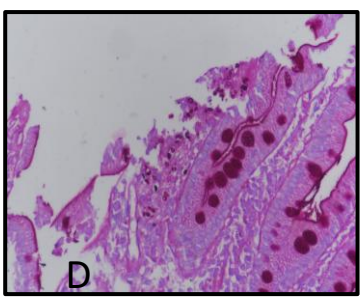
Introduction: Systemic lupus erythematosus (SLE) is a chronic autoimmune disorder characterized by multi-organ involvement, including lupus nephritis, a serious renal manifestation that often requires long-term immunosuppressive therapy. While essential for controlling disease activity, such therapy increases the risk of opportunistic infections, particularly cryptococcosis. Cryptococcosis, caused by *Cryptococcus* species, commonly affects the central nervous system and lungs in immunocompromised patients. However, disseminated cryptococcal infections involving the kidneys and gastrointestinal tract are exceedingly rare in SLE patients, creating a unique clinical challenge in balancing effective immunosuppression for lupus control and antifungal treatment for the infection.

A 36-year-old male insurance agent with a history of lupus nephritis diagnosed in July 2022, previously treated with steroids and mycophenolate mofetil for six months before self-discontinuation, presented with 15 days of generalized swelling, 10 days of decreased urine output and high-grade fever, and 3 days of shortness of breath. The swelling, which began in the lower limbs, progressed to involve the entire body. His examination revealed anasarca, raised blood pressure, decreased air entry in the bilateral infrascapular area, and ascites. Initial tests showed anemia, renal dysfunction, hypoalbuminemia, significant proteinuria, microscopic hematuria, and low C3 and C4 levels. Chest X-ray indicated bilateral CP angle blunting, and abdominal ultrasound showed altered liver echotexture. A chest CT scan revealed centrilobular nodules in a tree-in-bud pattern with consolidation, ground-glass opacities, and bilateral pleural effusion. Despite negative tests for tuberculosis and other mycobacteria via broncho-alveolar lavage, a renal biopsy confirmed active lupus nephritis and discovered fungal granulomas resembling cryptococcus, which was similarly found in gastrointestinal nodules biopsied during endoscopy. Based on these findings, empirical antibiotics were started to manage a suspected lung infection and potential autoimmune hepatitis, with plans to resume immunosuppression to treat the active lupus nephritis.





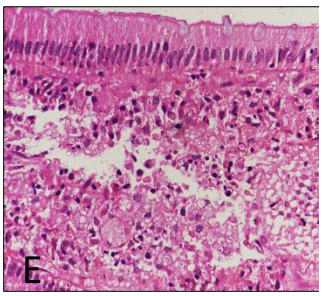


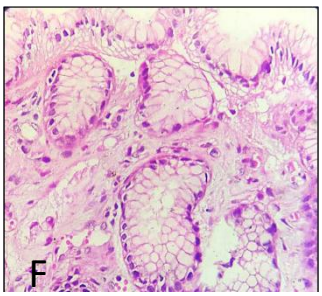


A-Arrow showing Smaller and bigger sized yeasts in Glomeruli in hematoxylin and eosin stain, **B**-Variable sized yeasts (4-8um), almost like size of RBCs, Round to oval, encapsulated with thin wall. Narrow based budding in stain. Jones, **C**- Similar morphology yeast in duodenal biopsy H&E stain, **D**-Similar morphology yeast in duodenal biopsy H&E stain in PAS stain.

References:-

1. Suarez M, Misischia R, Alarco´ n GS. Infections in systemic connective tissue diseases: systemic lupus erythematosus, scleroderma,and polymyositis/dermatomyositis. Rheum Dis Clin North Am 2003; 29: 163–184.
2. Gonzalez LA, Vasquez G, Restrepo JP, Velasquez M, Ramirez LA. Cryptococcosis in systemic lupus erythematosus: a series of six cases. *Lupus* 2010; 19: 639–645.
3. Meena P, Bhargava V, Singh K, Sethi J, Prabhakar A, Panda S. Cryptococcosis in kidney transplant recipients: Current understanding and practices. World J Nephrol. 2023 Dec 25;12(5):120-131.doi: 10.5527/wjn.v12.i5.120. PMID: 38230297; PMCID: PMC10789088.





E-Duodenal mucosa biopsy showing few cryptococcus yeast form in H&E stain, **F**- Normal Gastric mucosa, devoid of any yeast form in H&E stain.

Treatment: Considering the new found findings of disseminated cryptococcus the treatment for the patient became significantly challenging after a thorough literature review, we were able to find 2 case series with long term follow up of SLE patient with cryptococcosis where they had treated SLE flare in conjunction of cryptococcus with immunosuppression, so after ruling out CNS cryptococcosis patient was started on 1mg/kg prednisone and antifungals Amphotericin B lipid complex 5mg/Kg/day for 8 weeks in induction phase and Fluconazole 800 mg/day for consolidation phase and then he was kept on maintenance therapy with Fluconazole 200 mg/day according to IDSA 2010 guidelines for treatment of disseminated cryptococcosis

Follow up: Patient was kept in monthly follow up, the steroid was continued for around 3 months and later were tapered the proteinuria was managed with ARB and SGLT2 inhibitors, and fluconazole 200 mg/day as maintenance therapy. A repeat endoscopy was planned after 8 months and biopsies were taken from gastric and duodenal mucosa, the microscopy of the sample showed cryptococcus present in Duodenal mucosa but were not seen in Gastric mucosa.

Discussion: This case underscores the intricate challenges in managing systemic lupus erythematosus (SLE) with concurrent lupus nephritis and opportunistic infections such as cryptococcosis. SLE patients, due to intrinsic immune dysfunctions and immunosuppressive therapies (e.g., corticosteroids, MMF), are highly susceptible to infections like cryptococcosis. This patient's simultaneous renal and gastrointestinal cryptococcal involvement illustrates the complexity of providing adequate immunosuppression for lupus nephritis while managing severe infections. The therapeutic strategy involved balancing antifungal therapy, specifically amphotericin B followed by fluconazole maintenance (aligned with IDSA guidelines), with modified immunosuppression to manage the lupus activity without exacerbating the infection.

Conclusion: Effective management required a multidisciplinary approach and careful titration of therapies to address both the autoimmune activity and the opportunistic infection. The patient's subsequent improvement with stable renal function and partial resolution of cryptococcal sites highlights the critical need for tailored therapeutic regimens in SLE patients with complex presentations. This case illustrates the importance of vigilant long-term management and follow-up to prevent infection recurrence and ensure continued control of lupus nephritis. Future considerations should include protocols for balancing immunosuppression with infection management in similar high-risk SLE patients.