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Editorials

Original Articles

Acute Kidney Injury

Chronic Kidney Disease

Clinical Nephrology

Original Articles (Continued)

Renal Physiology

Attending Rounds

In-Depth Review

Public Policy Series

Special Feature

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On the Cover

What's the diagnosis? A 24-year-old man with recently diagnosed advanced HIV infection (AIDS) characterized by CD4 7 cells/mm^3, viral load 11,324 copies/mL presented with headache, nausea and vomiting, which progressively worsened over the past 30 days. In addition, the patient described diplopia and weight loss, but denied photophobia, neck stiffness, or flank pain. On exam, the patient was cachectic while oral candidiasis and anal condylomata infections were noted. Laboratory tests revealed pancytopenia. Cryptococcus sp. was found in the CSF by direct examination using India ink. The patient was initiated on intravenous amphotericin B for systemic cryptococcal infection. Urine sediment examination revealed 5 squamous epithelial cells/HPF, 30 white blood cells/HPF, 1 red blood cell/HPF and many encapsulated yeast forms free in the urine (left panel). In addition, several casts containing encapsulated yeast were indentified (left panel), suggesting the presence of cryptococcal pyelonephritis. The yeast capsule was visualized on India ink stain of the urine (right panel). Over time, amphotericin B was subsequently switched to oral fluconazole. Combination antiretroviral therapy with abacavir, lamivudine, and efavirenz was also initiated for HIV infection. After 78 days of hospitalization, the patient was discharged to home in stable condition.

Cryptococcal infections are seen primarily in immunocompromised patients with defective cell-mediated immunity, such as those with AIDS, organ transplants, corticosteroid therapy, and reticuloendothelial malignancies. Disseminated infection most commonly involves the CNS and lungs, followed by the skin and bone marrow. Kidney infection, either as pyelonephritis or an abscess is uncommon, but has been described. In this case, the patient had AIDS, which predisposed him to disseminated cryptococcosis. While meningitis was clinically obvious, renal involvement as pyelonephritis was diagnosed based on a thorough examination of the spun urine sediment. The classic round-to-oval yeast with a polysaccharide capsule, which may have a single bud, is best seen with India ink stain (right panel). In this case, it was seen both in the CSF and urine. In patients with AIDS, treatment includes intravenous amphotericin B for 2 weeks followed by oral fluconazole for a minimum of 8-10 weeks. Combination antiretroviral therapy to achieve a CD4 count $>$ 200 cells/mm^3 allows discontinuation of anti-fungal therapy. *(Images and text provided by Jose Antonio Tesser Poloni and Anelise Kirsch, Irmandade da Santa Casa de Misericordia de Porto Alegre, Porto Alegre, Brazil, and Mark A. Perazella, MD, Yale University School of Medicine, New Haven, Connecticut)*