

Renal abscess due to *Mycobacterium avium* complex in a human immunodeficiency virus-positive patient

Robert Colebunders,⁽¹⁾ Ilse Kint,⁽¹⁾ Ivan Bastian,⁽²⁾ Eva Mortelmans,⁽³⁾ Werner Jacobs,⁽⁴⁾ and Eric Van Marck⁽¹⁾

Int J Infect Dis 2002; 6: 238–239

Disseminated *Mycobacterium avium* complex (MAC) infection usually involves tissues of the mononuclear phagocytic system (e.g. lymph nodes, spleen, and liver).¹ In contrast, renal disease due to MAC is rare.^{2–4} We report the first case of an HIV-positive man with a large renal abscess due to MAC infection.

A 41-year-old HIV-positive African man with a 2-year history of macroscopic hematuria presented with renal failure, complaining of fever and lethargy. The patient was normotensive and his temperature was 37.8°C. Marked peripheral edema was the only other significant physical finding. Laboratory studies revealed the following relevant values: serum creatinine, 4.1 mg/dL; serum potassium, 5.4 mmol/L; hemoglobin, 7.6

g/dL; CD4⁺ T-cell count, 100 × 10⁶/L; HIV viral load, >750 000 copies/mL. An abdominal CT scan demonstrated an enlarged left kidney with multiple sharply outlined hypodensities suggestive of renal tuberculosis or a cystic nephroma (Figure 1). Analysis of three early-morning urine specimens revealed hematuria, pyuria, and the persistent presence of acid-fast bacilli (AFB). Blood cultures were sterile.

Standard antituberculosis treatment (rifampicin, isoniazid, pyrazinamide and ethambutol) produced defervescence and clinical improvement within 1 week. Antiretroviral combination therapy (indinavir, lamivudine and stavudine) was commenced after 1 month, and the antituberculosis treatment adjusted accordingly.

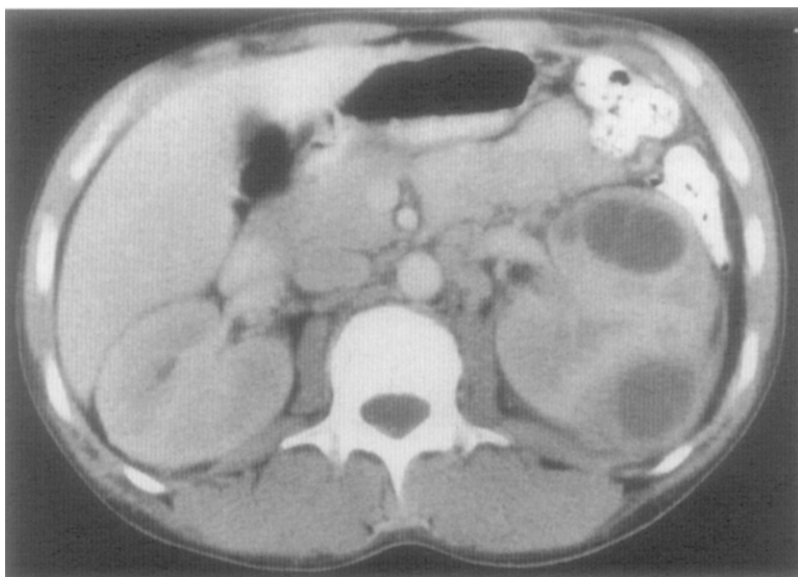


Figure 1. Abdominal CT scan. Enlarged left kidney with multiple sharply outlined hypodensities.

⁽¹⁾University Hospital Antwerp and Institute of Tropical Medicine, Department of Clinical Sciences, Antwerp, Belgium; ⁽²⁾Department of Microbiology, Institute of Tropical Medicine, Antwerp, Belgium; ⁽³⁾Department of Radiology, University Hospital Antwerp, Antwerp, Belgium; ⁽⁴⁾Department of Pathology, University Hospital Antwerp, Antwerp, Belgium.

Address correspondence to: Dr Robert Colebunders, Institute of Tropical Medicine, Department of Clinical Sciences, Nationalestraat 155, Antwerp B-2000, Belgium. E-mail: bcoleb@itg.be

Corresponding Editorial Office: New York

The patient re-presented 4 weeks later with a convulsion and worsening renal failure, possibly secondary to his isoniazid and indinavir therapies. All chemotherapies were ceased, peritoneal dialysis was commenced, and the patient's physical condition slowly improved. Unfortunately, he developed bouts of confusion, paranoia and depression, and committed suicide by hanging (cause of death mechanical asphyxia) during one of these episodes. A post-mortem examination showed two pale kidneys that were difficult to decapsulate. The enlarged left kidney (340 g) contained an abscess (5 × 2

cm). Microscopic examination of both kidneys revealed a chronic interstitial nephritis with interstitial fibrosis. Around the abscess, there was a diffuse infiltrate consisting of lymphocytes, foamy macrophages and plasma cells. Distinct granulomas were not formed. The infiltrate contained mainly fragmented AFB, these findings being more pronounced in the left than in the right kidney. Mycobacterial laboratory investigations completed after the patient's death found that three early-morning urine samples contained MAC. Blood and alveolar lavage cultures for MAC remained negative.

MAC has been detected in the urine of 43% of AIDS patients with disseminated infection,⁵ and autopsy studies have isolated MAC from the renal tissue of 8–55% of such cases.^{1,5} However, a literature review has found only three reports of HIV-positive patients with renal disease due to MAC: an AIDS patient with nephrocalcinosis associated with a MAC infection of the kidneys,² another with nephropathy and renal localization of a disseminated MAC infection,³ and an HIV-positive patient who developed a MAC infection of a renal allograft resulting in granulomatous inflammation and subsequent rejection.⁴

Our case is the first reported example of MAC infection in an HIV-positive patient causing a clinical presentation similar to renal tuberculosis with abscess formation. The cause of the renal failure was probably related to the MAC infection. The interstitial nephritis

observed at post-mortem examination may have been drug related (caused by the antiretroviral therapy?). This patient's renal pathology preceded the introduction of HAART. Mycobacterial abscess formation is increasingly reported during HAART because of an immune restoration disease. Therefore, it may be that in the future more mycobacterial abscesses of the kidneys will be observed.

REFERENCES

1. Klatt EC, Nichols L, Noguchi TT. Evolving trends revealed by autopsies of patients with acquired immunodeficiency syndrome: 565 autopsies in adults with the acquired immunodeficiency syndrome, Los Angeles, Calif, 1992–1993. *Arch Pathol Lab Med* 1994; 118:884–890.
2. Falkhoff GE, Rigsby CM, Rosenfield AT. Partial, combined cortical and medullary nephrocalcinosis: US and CT patterns in AIDS-associated MAI infection. *Radiology* 1987; 162:343–344.
3. Van der Reijden HJ, Schipper ME, Danner SA, Arisz L. Glomerular lesions and opportunistic infections of the kidney in AIDS: an autopsy study of 47 cases. *Adv Exp Med Biol* 1989; 252:181–188.
4. Sumrani N, Delaney V, Hong JH, Sommer BG. Mycobacterial avium–intracellulare infection of a renal allograft. *Clin Nephrol* 1991; 35:45–46.
5. Hawkins CC, Gold JWM, Whimbey E, et al. *Mycobacterium avium* complex infections in patients with the acquired immunodeficiency syndrome. *Ann Intern Med* 1986; 105:184–188.