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Miliary Tuberculosis involving Kidney Allograft in a Kidney Transplantation Recipient: a case report

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Case Study: Introduction: Tuberculosis (TB) is one of important opportunistic infections after kidney transplantation. While pulmonary TB is the most common manifestation of post-transplantation TB, extra-pulmonary TB or miliary TB are not uncommon in kidney transplantation recipients because of immunosuppressants use. We present a case of miliary TB involving kidney allograft.

Case presentation: A 66-year-old woman, who had received kidney transplantation 12 years ago, visited our emergency unit with chief complaint of urinary frequency, dysuria, and gross hematuria. Laboratory findings showed decreased kidney function, mild elevation of C-reactive protein, and pyuria. Abdominal computed tomography (CT) showed swelling of transplanted kidney with internal hypodensity and equivocal perirenal infiltration. In addition, chest CT findings showed multiple well-defined centrilobular nodules with tree-in-bud appearance, which implied pulmonary TB. She was initially assessed as acute pyelonephritis, and ceftriaxone was initiated. Because of her immunosuppressed status, infiltrative tumor and renal tuberculosis had to be ruled out. For differential diagnosis, acid-fast bacilli (AFB) smear and TB-polymerase chain reaction (TB-PCR) test of urine and sputum were done, which showed positive results. She was re-assessed as miliary TB involving kidney allograft. We discontinued ceftriaxone and started anti-TB medications. Her urinary symptoms disappeared within 3 days, and she was discharged. After 1.5 months of anti-TB medications, her CT findings showed improved status of renal tuberculosis, and her kidney function showed complete recovery.

Conclusion: Kidney allograft involvement is rare in post-transplantation TB, and therefore, it can be misdiagnosed as acute pyelonephritis or infiltrative tumor. Delay in diagnosis could cause renal graft failure, while initiation of anti-TB medications rapidly improves urinary symptoms and image findings. Patients suspected for renal TB in kidney allograft should immediately undergo urine AFB smear and TB-PCR tests. Early diagnosis and treatment of renal TB can improve graft outcome and reduce unnecessary invasive examinations, such as kidney biopsy.