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Special Feature

1875 Mineral (Mal)Adaptation to Kidney Disease—Young Investigator Award Address: American Society of Nephrology Kidney Week 2014

Myles Wolf

Erratum

1886 Correction

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On the Cover

What's the diagnosis? A 24-year-old woman underwent living related donor renal transplantation for end stage renal disease due to congenital anomalies of the kidney and urinary tract. Pre-transplant cross match was negative. She was treated with cyclosporine, prednisolone, and mycophenolate. At discharge, her creatinine was 1.0 mg/dl. Nine months post-transplant, she presented with a creatinine of 1.8 mg/dl and trace proteinuria. A renal biopsy was performed. The glomeruli were unremarkable, there was no significant interstitial inflammatory cell infiltrate, no tubulitis and no vascular lesions. A proximal tubular epithelial cell showed an intranuclear inclusion with a characteristic clear halo around the periphery of the enlarged nucleus. Basophilic granules, which represent viral particles, were present in the cytoplasm (top image). An immunohistochemical stain for cytomegalovirus (CMV) was positive in the infected nucleus (bottom image), confirming CMV disease in this patient. She was administered intravenous ganciclovir. She responded to therapy with creatinine stabilizing at 1.4mg/dl.

Cytomegalovirus affects immunocompromised patients and can cause disease in renal allografts as well as native kidneys. The clinical presentation in an allograft recipient ranges from mild, subclinical symptoms to life-threatening multi-organ disease. CMV causes renal allograft injury that may be clinically indistinguishable from injury caused by rejection or other viruses. CMV nephritis most commonly involves the renal tubular epithelium, although occasionally glomerular and vascular endothelial cells may also become infected. The distinction between CMV infection (isolation of virus from body fluids or tissue) and CMV disease (confirmation of organ dysfunction/tissue injury in the presence of CMV infection, as in this patient) must be made. In the transplant setting, the CMV serologic status of donor and recipient is the most important factor in determining risk of CMV infection and disease in the allograft recipient. The combination of a CMV negative recipient and a CMV positive donor indicates the highest risk. Prevention of CMV infection is the standard of care in renal allograft recipients. With antiviral therapy, the disease is usually reversible. (Image and text provided by Anila Kurien, Center for Renal and Urological Pathology, Chennai, Tamil Nadu, India, and Gopalakrishnan Natarajan, Madras Medical College, Nephrology, Chennai, Tamilnadu, India)