

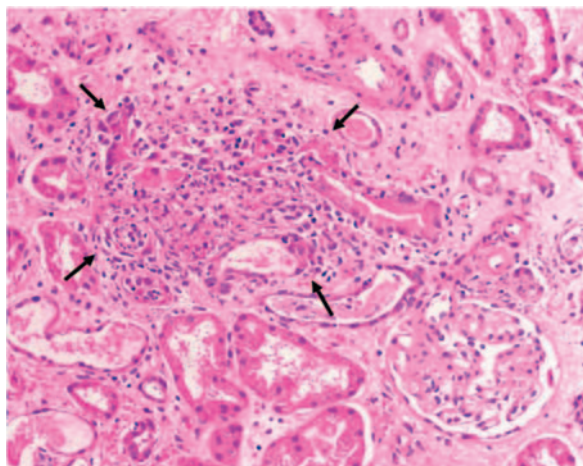
Kidney International (2010) 77, 746; doi:10.1038/ki.2009.351

# Renal allograft loss due to overwhelming invasive *Candida* infection

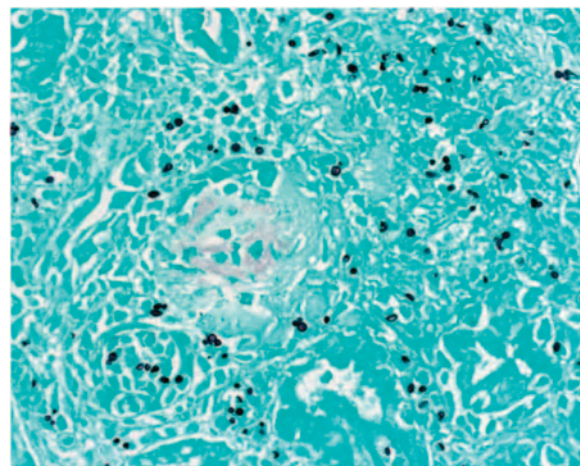
Mordecai J. Stolk<sup>1</sup>, Anne L. King<sup>1</sup> and H. Davis Massey<sup>2</sup>

<sup>1</sup>Department of Nephrology, Medical College of Virginia, Richmond, Virginia, USA and <sup>2</sup>Department of Pathology, Medical College of Virginia, Richmond, Virginia, USA

**Correspondence:** Mordecai J. Stolk, Department of Nephrology, Medical College of Virginia, PO BOX 980160, Richmond, Virginia 23298, USA. E-mail: mordecaistolk@hotmail.com



**Figure 1** | Hematoxylin and eosin-stained section (original magnification  $\times 400$ ) showing a focal poorly formed granuloma (arrows) next to a glomerulus.



**Figure 2** | Gomori's methenamine silver histochemical staining showing positive yeast elements in the interstitium.

A 36-year-old African-American woman who had received a cadaveric renal allograft 6 months earlier for end-stage renal disease secondary to diabetes presented to the clinic with a 2-week history of decreased urine output and worsening edema. Her baseline creatinine was 1.01 mg/dl, which had acutely increased to 5.77 mg/dl. Her immunosuppressive regimen included tacrolimus, prednisone, and azathioprine because of recalcitrant diarrhea with mycophenolate. Three weeks before this episode, she underwent an allograft ultrasound showing hydronephrosis and a renal biopsy for an asymptomatic rise in serum creatinine to 1.59 mg/dl, which showed mild chronic rejection. Concurrently, a percutaneous nephrostomy tube was inserted for ureteral obstruction. Urine cultures analyzed simultaneously to these procedures showed subclinical growth of urogenital flora. The repeat allograft biopsy shown here showed renal tubules

separated by significant interstitial edema with a brisk acute and chronic inflammatory reaction. Immunostaining for CD3 highlighted numerous T cells within several renal tubules, and immunohistochemical staining for the BK virus was negative. Hematoxylin and eosin staining revealed the presence of granulomas and organisms with pseudohyphae (Figure 1). Urine culture showed a growth of  $>100,000$  colony-forming units of non-albicans *Candida* species. Confirmatory staining with Gomori's methenamine silver (Figure 2) showed yeast elements in the interstitium, which prompted the initiation of combined oral fluconazole/voriconazole and removal of the nephrostomy tube. Despite these measures, the patient's allograft never recovered, and the transplanted kidney was surgically removed 4 weeks later. Explant gross pathology corroborated the overwhelming yeast infection.