A 22-year-old man was admitted to our hospital with a 6-month history of fever, arthralgia, and weight loss for the examination of fever of unknown origin. He had no medical history and took no medication before the onset of symptoms. On examination, his temperature was 37.9°C. The laboratory findings showed eosinophilia and a C-reactive protein (CRP) level of 15.0 mg/L. Myeloperoxidase-antineutrophilic cytoplasmic antibodies (MPO-ANCAs) were slightly elevated (6.1 U/mL, normal: < 3.5 U/mL). Proteinase 3 (PR3)-ANCA, rheumatoid factor (RF), antinuclear antibody, hepatitis B surface antigen, and hepatitis C virus antibody were negative. Computed tomography (CT) of the abdomen showed wedge-shaped regions of decreased contrast enhancement in the bilateral kidney (Figure 1), suggesting low perfusion, even though the urinalysis (no proteinuria, hematuria, and cast) including the spot urine protein to creatinine ratio (45.7 mg/gCre), the serum creatinine level (0.73 mg/dL), and noncontrast CT scan were normal. The renal artery’s angiography revealed bilateral multiple renal aneurysms with parenchymal defect (Figure 2 and Supplementary File, available online at http://www.mayoclinicproceedings.org). These findings were consistent with polyarteritis nodosa (PAN). After the treatment with prednisolone (70 mg daily) and intravenous cyclophosphamide (500 mg monthly) was initiated, his symptoms improved, and the elevated CRP decreased to normal. The patient’s condition was stabilized with a normal range of serum creatinine (approximately 0.80 mg/dL); therefore, we did not repeat the angiography.

PAN is a systemic inflammatory disease and classified with medium vessel vasculitis, leading to multiple organ damages by the artery occlusion, aneurysm, and rupture. Therefore, the urinalysis often does not
show any proteinuria, hematuria, or granular cast as glomerulonephritis associated with small-vessel vasculitis. In addition, the renal microaneurysms are mostly too small to be detected on CT angiography. Renal low perfusion with normal urinalysis and fever of unknown origin requires renal artery angiography for diagnosis.

SUPPLEMENTAL ONLINE MATERIAL
Supplemental material can be found online at http://mayoclinicproceedings.org. Supplemental material attached to articles has not been edited, and the authors take responsibility for the accuracy of all data.

Potential Competing Interests: The authors report no competing interests.

Correspondence: Address to Hajime Kono, MD, PhD, Department of Internal Medicine, Tokyo University School of medicine, 2-11-1 Kaga, Itabashi-Ku, Tokyo 173-8605, Japan (kono@med.teikyo-u.ac.jp).

ORCID
Daisuke Tsukui: https://orcid.org/0000-0002-8563-1615; Hajime Kono: https://orcid.org/0000-0002-4578-8677

REFERENCES