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CLINICAL IMAGE

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# Methamphetamine-induced renal pseudovasculitis: Suspicion is the key

**Gajapathiraju Chamarthi** | **Justin Lee Loy** | **Abhilash Koratala**

Division of Nephrology, Hypertension and Renal Transplantation, University of Florida, Gainesville, Florida

**Correspondence**
Abhilash Koratala, Division of Nephrology, Hypertension and Renal Transplantation, University of Florida, Gainesville, FL.
Email: akoratsla@ufl.edu

Key Clinical Message

It is important to recognize drug-induced vasculitis as patients with true vasculitis often require immunosuppressive therapy and delay in treatment can result in significant mortality. Illicit drug use (specifically methamphetamine and cocaine) should be in the differential diagnosis of vasculitis as it typically resolves with cessation of the drug.

**KEYWORDS**

acute kidney injury, methamphetamine, renal biopsy, vasculitis

## 1 | QUIZ QUESTION: IS THERE A LINK BETWEEN PATIENT'S URINE DRUG SCREEN AND RENAL BIOPSY FINDINGS?

A 38-year-old man presented with generalized weakness and epigastric pain. Examination revealed several pustules and purpuric spots on his legs, which he attributed to insect bites. Urine drug screen was positive for amphetamines and serum creatinine was 1.4 mg/dL. He soon developed sepsis with respiratory failure requiring mechanical ventilation and acute kidney injury requiring dialysis. Serum creatine kinase was within normal limits. Viral hepatitis and HIV testing, and vasculitis work up including antinuclear antibodies, antineutrophil cytoplasmic antibodies, and cryoglobulins were negative. Skin biopsy showed evidence of mild vascular damage with swollen endothelial cells and infiltrate of neutrophils, eosinophils suggesting vasculitis. Renal biopsy demonstrated acute tubular injury and transmural fibroid necrosis without significant neutrophilic infiltrate in a medium-sized vessel and 2 branch vessels suggestive of subacute vasculitis (Figure 1), likely related to drug abuse. Patient's renal function gradually improved during the course of hospitalization and was taken off dialysis.

Methamphetamine is a synthetic drug that is widely abused by young adults and can have deleterious effects on many organ systems including the kidney.While rhabdomyolysis is the commonest mechanism of kidney injury,

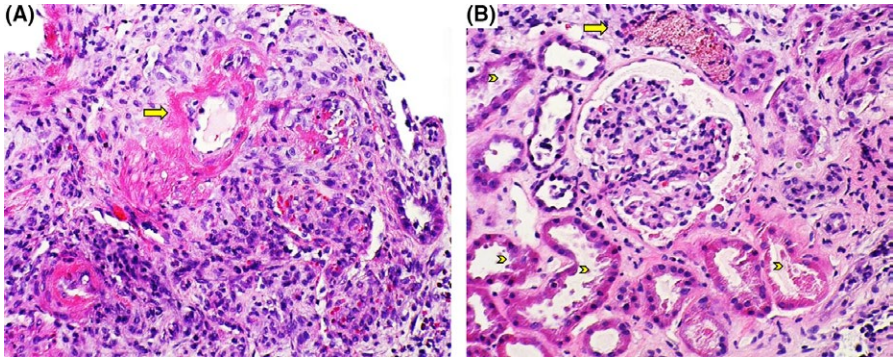


**FIGURE 1** Renal biopsy demonstrating (A) a medium-sized vessel with transmural fibroid necrosis; (B) acute tubular injury (chevrons) and a tubular red blood cell cast (arrow) indicating glomerular hematuria though there was no visible necrosis or crescent formation in the sampled glomeruli

methamphetamine-induced acute cortical necrosis and necrotizing vasculitis have been reported in the literature.[1,2] Physicians need to be aware of this phenomenon to ensure proper management.

## CONFLICT OF INTEREST

None declared.

## AUTHOR CONTRIBUTION

GC: drafted the initial version of the manuscript and participated in patient care. JLL: assisted in drafting the manuscript and procuring the images. AK: attending nephrologist, reviewed and revised the manuscript for critically important intellectual content.

## INFORMED CONSENT

Informed consent was obtained from the patient.

## ORCID

*Abhilash Koratala* https://orcid.org/0000-0001-5801-3574

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