Persistent Nephrogram on Abdominal Radiography and Computed Tomography

Michitaka Maekawa, Takahiro Imaizumi and Taishi Yamakawa

Key words: acute kidney injury (AKI), contrast-induced nephropathy, persistent nephrogram

(Intern Med 53: 2551-2552, 2014)
(DOI: 10.2169/internalmedicine.53.3008)

A 51-year-old Japanese man presenting with acute abdomen was admitted to our hospital. Contrast-enhanced computed tomography (CT) led to a diagnosis of gastroenteritis on admission (Picture 1A). Contrast-induced oliguric acute kidney injury followed by septic shock developed, and the serum creatinine level rose from 0.98 mg/dL to 5.07 mg/dL, requiring temporary hemodialysis. Kidney-shaped enhancement was observed on an abdominal X-ray after 24 hours of
contrast injection (Picture 2A). Delayed enhancement CT performed after 42 hours demonstrated duodenal perforation, peritonitis and diffuse enhancement of the kidney (Picture 1B). Vigorous fluid resuscitation resulted in the disappearance of the enhanced kidney on abdominal X-ray images (Picture 2B).

A recent study reported that the persistence of contrast material in the kidney is predictive of contrast-induced nephropathy (1). The pathogenesis of persistent nephrogram is presumed to involve compromise of the renal circulation that results in a slowed urine flow in the collecting system, with subsequent reabsorption of water and electrolytes that allows concentrated contrast material to remain in the kidney (2). The observation of kidney enhancement for a prolonged period alerts us to the possible development of persistent kidney dysfunction which is attributable to acute tubular necrosis.

The authors state that they have no Conflict of Interest (COI).

References