

Discordant Findings on Dimercaptosuccinic Acid Scintigraphy in Children with Multi-Detector Row Computed Tomography-Proven Acute Pyelonephritis

Se Jin Park, Jeong Min Lee, Ki Soo Pai

Department of Pediatrics, Ajou University School of Medicine, Ajou University Hospital

Purpose: The diagnosis of acute pyelonephritis (APN) is often difficult, as its clinical and biological manifestations are non-specific in children. If not treated quickly and adequately, however, APN may cause irreversible renal damage, possibly leading to hypertension and chronic renal failure. We were suspecting the diagnostic value of ^{99m}Tc -2, 3- dimercaptosuccinic acid (DMSA) scan by experiences and so compared the results of DMSA scan to those of multi-detector row computed tomography (MDCT).

Methods: We retrospectively selected and analyzed 81 patients who were diagnosed as APN by MDCT during evaluation of their acute abdomen in emergency room and then received DMSA scan also for the diagnostic work-up of APN after admission. We evaluated the results of imaging studies and compared the diagnostic value of each method by age groups, <2 years (n=45) and ≥ 2 years (n=36).

Results: Among total 81 patients with MDCT-proven APN. DMSA scan was diagnostic only in 55 children (68%), while the remaining 26 children (32%) showed false negative normal findings. These 26 patients were predominantly male with average age of 21 months and most of them, 19 (73.1%) were <2 years of age.

Conclusion: DMSA scan has obvious limitation compared to MDCT in depicting acute inflammatory lesions of kidney in children with APN, especially in early childhood less than 2 years of age. MDCT showed hidden lesions of APN, those were undetectable through DMSA scan in children.

Key Words: 급성 신우신염, 컴퓨터 단층 촬영, 신장 핵의학 검사

Acute pyelonephritis, Multi-detector row CT, ^{99m}Tc DMSA scan