

## 바닷물에 빠진 후 발생한 허혈성 급성세뇨관괴사 1예

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### A Case of Acute Tubular Necrosis After Near Drowning

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**Background:** A World Health Organization report in 2014 shows that drowning claims the lives of 372,000 people each year, and near-drowning is a common medical emergency in Republic of Korea. A retrospective case-control study was identified nearly 50% patients were showed acute kidney injury (AKI) after immersion or near-drowning. However, near-drowning associated AKI is reported in only a few cases and which are still unveiled.

**Case:** A previously healthy 37-year-old male visited emergency room after rescued from near-drowning. He had experienced near-drowning for 5 minutes during swimming at beach one day before. He has safely rescued without resuscitation or any urgent medical support. On physical examination, blood pressure was 150/90 mmHg and there was no specific physical finding except for mild pre-tibial pitting edema. Laboratory test revealed BUN was 45.6 mg/dL, creatinine 4.46 mg/dL, uric acid 12.2 mg/dL, hs-CRP 7.48 mg/dL, hemoglobin 14.3 g/dL, leukocyte 10,270/ $\mu$ L, albumin 4.1 g/dL, urine sodium 25 mEq/L, serum and urine osmolarity 307 and 193 mOsm/kg were respectively, antinuclear antibody was negative, and Immunoglobulin, complement, ASO, anti DS-DNA antibody, and RA factor were all within normal range. Electrocardiogram and chest radiography were also normal. Urinalysis showed blood -, albumin 1+, and spot urine protein creatinine ratio was 0.3 mg/g. He showed diuresis of  $>3$  L/day since 2nd hospital day, normal saline was replaced for fluid balance. The 3rd hospital day, renal biopsy was performed for evaluation of severe acute renal injury which is not consistent with duration of hypoxic injury. However, pathologic feature taken from the kidney showed only mild acute tubular necrosis (ATN) without definite interstitial change. He was improved with conservative management, and serum creatinine recovered 1.35 mg/dL 2 weeks later.

**Conclusion:** In conclusion we suggest that renal ischemia due to brief hypoxic injury can show significant renal impairment without definite tubular necrosis, because of normal renal perfusion.

**Key Words:** 급성신손상, 세뇨관괴사, 침수

Acute kidney injury, Acute tubular necrosis, Near-drowning