

## 상염색체 우성 다낭신을 동반한 당뇨 환자에서 기종성 신우신염에 대한 성공적인 항생제 치료

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### Successful Antibiotic Treatment of Emphysematous Pyelonephritis in a Diabetic Patient with Autosomal Dominant Polycystic Kidney Disease

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**Introduction:** Emphysematous pyelonephritis (EPN) is a severe form of pyelonephritis with a high mortality rate and is characterized by the presence of gas within the renal parenchyma and/or collecting system. EPN associated with autosomal dominant polycystic kidney disease (ADPKD) is extremely rare. *E. coli* is the most common facultative organism. Herein, we present a case of EPN caused by, extended spectrum beta-lactamase (ESBL)-producing *E. coli* in a diabetic ADPKD patient that was treated with conservative methods.

**Case Report:** A 77-year-old female known to have ADPKD and diabetes presented with fever and left flank pain. Nine months previous, she had developed a renal cyst infection with abscess formation. Cultures of urine and pus grew ESBL-non-producing *E. coli*, the patient was treated with intravenous ciprofloxacin and percutaneous drainage. On admission, her body temperature was 37.7°C. Laboratory data identified a white blood cell count of 8,400/mm<sup>3</sup> (segment neutrophils: 80%); serum creatinine, 1.34 mg/dL; C-reactive protein, 24.3 mg/dL; blood glucose, 346 mg/dL; and HbA1c, 10.0%. Computed tomography (CT) of the abdomen demonstrated polycystic kidneys and air fluid leveled cyst, suggesting a cystic infection with abscess formation at the upper lateral portion of the left kidney. Intravenous ciprofloxacin administration was performed. On day three of hospitalization, ESBL-producing *E. coli* was detected in blood and urine cultures. A follow-up CT scan showed further aggravation of the cystic infection and new development of renal parenchymal air, consistent with EPN. Clinical manifestations deteriorated under ciprofloxacin treatment, so we switched from ciprofloxacin to meropenem. Because the amount of renal parenchymal air was small, and the patient's clinical state was stable, we decided to continue antibiotic treatment without surgical or radiologic intervention. No organisms were isolated on subsequent blood or urine cultures. Meropenem was administered for 28 days, and then the patient was discharged without any antibiotics. A CT scan two weeks after discharge showed resolution of the cystic infection.

**Conclusion:** To our knowledge, this is the first case of EPN caused by ESBL-producing *E. coli* in a diabetic ADPKD patient that was successfully treated with medical therapy only. The successful outcome was possibly due to the mild severity of the disease, the presence of no risk factors, and appropriate and prompt antibiotic therapy.

**Key Words:** 다낭성 신우신염, 상염색체 우성 다낭신, ESBL  
Emphysematous pyelonephritis, ADPKD, ESBL