A Case of Recurrent IgA Nephropathy and Acute Interstitial Nephritis with Acute Pyelonephritis

연세대학교 의과대학 내과학교실[1], 신촌세브란스병원 신장내과[2]

김유현[1], **양재석**[1,2]

Background: Recurrent IgA nephropathy (IgAN) and acute pyelonephritis (APN) can occur in kidney transplant patients. COVID-19 may cause recurrent glomerulonephritis or acute interstitial nephritis (AIN) in kidney transplant patients. Here, we present a case of recurrent IgAN and AIN with APN in a kidney transplant patient after COVID-19 infection.

Case: A 40-year-old woman received a living-related donor kidney transplantation from her mother in April 2016. Her post-transplant course was good with stable renal functions except asymptomatic hematuria, which was attributed to biopsy proven recurrent IgAN in March 2020. She suffered COVID-19 and recovered without a significant renal complication in mid-March 2022. In late April 2022, the patient had visited an outside hospital for a 6-day history of high fever, chilling, myalgia, general weakness and a 2-day history of dark-brownish colored urine. In emergency room, she was diagnosed as uroseptic shock with a dialysis-dependent acute kidney injury (AKI). She received hemodialysis and ertapenem for ESBL-positive E. coli sepsis. When she was referred to Severance hospital, her WBC, CRP and procalcitonin levels were 15370 /μL, 129.5 mg/L, and 17.90 ng/mL, respectively. Serum creatinine and urine protein/creatinine ratio were 4.06 mg/dL and 9.83 g/gCr. In situations where glomerulonephritis, AIN, acute rejection triggered by sepsis or COVID-19 was suspected, the patient underwent renal allograft biopsy. Pathology examination revealed mixed features of IgAN with fibrinoid necrosis and cellular crescent formation, AIN, and APN. As she recovered from urosepsis, high-dose steroid treatment was added to antibiotics treatment and cyclophosphamide treatment was introduced after antibiotic treatment. Her AKI and heavy proteinuria were gradually improved. The current serum creatinine level and urine protein/creatinine ratio were 1.41 mg/dL and 1.46.

Conclusion: This rare case shows recurrent crescentic IgAN, and AIN combined with APN can occur after viral infection, such as COVID-19 infection. Active suspicion, early biopsy, and targeted intervention can rescue this severe complication in kidney transplant patients.