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Ipsilateral Focal Segmental Glomerulosclerosis after Renal Angioplasty on the Single Functioning Kidney in a Patient with Both Renal Artery Stenosis

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Case Study : Renal artery stenosis (RAS) is defined as a narrowing of one or both renal arteries or their branches. Several reports have described association of the nephrotic syndrome (NS) with RAS. The etiology of proteinuria has been related to activation of renin-angiotensin system and proteinuria was dramatically reduced following medical therapy or revascularization. But, the development of NS after revascularization of RAS is rare. We report ipsilateral focal segmental glomerulosclerosis (FSGS) developing after renal angioplasty on the single functioning kidney in a patient with both RAS.
A 48-year-old man was referred to our hospital for evaluation of azotemia and uncontrolled hypertension. His blood pressure was 160/90 mmHg, serum creatinine was 1.42 mg/dL. His spot urine protein-to-Cr ratio (PCR) was 0.4 g/g. Kidney Doppler sonography and the DTPA renogram showed that left renal artery was stenotic and right kidney was non-functional state. We performed renal angioplasty with stenting on left renal artery successfully. Two weeks after the procedure, the patient had developed marked generalized pitting edema associated with nephrotic syndrome (uPCR, 11.6 g/g). Left kidney biopsy was done and histological diagnosis was FSGS. The patient was started angiotensin receptor blocker (candesartan 16mg) daily and uPCR was decreasing to 2.2 g/g after six weeks.
Timely reestablishment of blood flow is essential to salvage the ischemic renal injury. However, reperfusion state after renal angioplasty can paradoxically cause further damage to the ischemic tissue. Serial monitoring proteinuria is needed in patients before and after renal angioplasty and we suggest managing angiotensin receptor blocker for proteinuria increasing.

Keywords : renal artery stenosis, single functioning kidney, renal angioplasty, focal segmental glomerulosclerosis