

APPARENT DIFFUSION COEFFICIENT EVALUATE THE RECOVERABILITY OF RENAL FUNCTION IN PATIENT WITH UNILATERAL HYDRONEPHROSIS AFTER PERCUTANEOUS NEPHROLITHOTOMY baojun xie, xiaobin zhang, wuhan, P.R China. To evaluate recoverability of renal function in patient with severe hydronephrosis caused by impacted unilateral upper ureteric calculi after Minimally Invasive Percutaneous Nephrolithotomy(MIPN). 35 consecutive adult patients had a cause of impacted upper ureteric calculi obstruction that was relieved after MIPN. The patients with a diagnosis of unilateral hydronephrosis and a normal contralateral kidney were conducted on a 1.5T scanner with Diffusion-weighted EPI B value 500 along the transverse plane before and 6 months after MIPN. The volume of the each kidney parenchyma was then calculated. Simultaneously, SPECT was performed. Preoperative apparent diffusion coefficient(apparent diffusion coefficient, ADC) in the hydronephrotic kidney of 35 cases was $0.00204\pm0.00021\text{mm}^2/\text{s}$. Postoperative ADC of ipsilateral kidney was $0.00267\pm0.00031\text{mm}^2/\text{s}$. The increase of ADC of affected kidney was $0.00067\pm0.00008\text{mm}^2/\text{s}$ ($P=0.0003$). Preoperative ADC was positively correlated with GFR Difference between preoperation and post-operation($r=0.58$, $P=0.0007$). The increase of ADC was positively correlated with that of GFR($r=0.62$, $P=0.0006$). Renal parenchymal volume was positively correlated with preoperative GFR($r=0.462$, $P=0.0009$). However, renal parenchymal volume was not significantly correlated with GFR difference between preoperative and postoperative. Renal parenchymal volume does not evaluate recovery of post-operation renal function but kidney function of that time. ADC can evaluate recovery of renal function after MIPN. Recovery of renal function was more obvious in hydronephrosis with higher ADC.