

An Analysis of 2,862 Percutaneous Renal Biopsies in Adult : A 28-Year Experience

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Objectives and Methods : Percutaneous renal biopsy has become the keystone of diagnosis and management of renal disease. This study was conducted to elucidate the distribution of clinical and pathological features of renal disease on 2,862 adult patients who had undergone percutaneous renal biopsy at Keimyung University Dongsan Medical Center (DSMC) over a 28-year period between 1978 and 2005.

Results : The average age at the time of biopsy was 34.4 years and the male to female ratio was 1.44 : 1. There were 2,257 (79%) cases of native kidney biopsy and 605 (21%) of allograft. The common indications for native kidney biopsy were nephrotic syndrome (46.1%) and asymptomatic urinary abnormalities (27.8%). In the primary glomerulonephritis (GN), most common pathologic diagnosis was IgA nephropathy (25.7%), followed by minimal change disease (21.9%), membranous nephropathy (8.9%) and focal segmental glomerulosclerosis (7.9%). Major causes of secondary GN were lupus nephritis (6.7%) and hepatitis associated GN (5.0%). The most common cause of primary nephrotic syndrome was minimal change disease (47.3%), but in ages of fifty and older, membranous nephropathy was most common lesion (36.9%). In the cases of asymptomatic urinary abnormality, IgA nephropathy was certainly most common (58.3%). When the primary GN cases were analyzed at 5-year intervals, the prevalence of IgA nephropathy increased markedly. In allograft kidney biopsies, acute rejection (36.8%), chronic rejection (21.5%) and these combined (10.9%) were common pathologic diagnoses. Documented complication of percutaneous renal biopsies included perirenal hematoma (23.6%), AVF fistular (7.9%), gross hematuria (6.0%), but rate of serious complications that required surgical intervention or embolization was very low (0.5%). After using real-time ultrasound guided automated gun biopsy device since 2003, much more glomeruli (26.0 ± 13.37) obtained and the rate of biopsies yielding more than 10 glomeruli increased (91.1%).

Conclusion : In Korea, IgA nephropathy was most common GN and hepatitis associated GN was major cause of secondary GN. In the adult patients with nephrotic syndrome, minimal change disease was most common pathologic diagnosis, but membranous nephropathy was most common cause in ages of fifty and older. The percutaneous renal biopsy is relatively safe and useful for diagnosis and management of renal disease. The automated real-time ultrasound guided procedure is a feasible and reliable technique, which gives a greater yield of diagnostic tissue without increasing the rate of complications.