A REVIEW OF 1508 PERCUTANEOUS RENAL BIOPSIES

Pages with reference to book, From 272 To 275

Qamar Jamal, Naeem A. Jafarey (Departments of Pathology, Jinnah Postgraduate Medical Centre, Karachi.)
Ali Jaffar Naqvi (Nephro-urology, Jinnah Postgraduate Medical Centre, Karachi.)

Since the introduction of percutaneous renal biopsies about 30 years ago, numerous clinicopathological studies have been reported from different parts of the world.[1-6] Several small series have also been reported from Pakistan.[7-9] This paper is a review of 1,508 percutaneous renal biopsies from March 1975 to March 1987.

MATERIAL, METHODS AND RESULTS

One thousand five hundred and eight renal biopsies (1294 in adults and 214 in children 0-14 years) were done in 1200 patients using the method of Kark et al.[10] Of these 1,162 (77%) were adequate for diagnosis. The sections were routinely stained with haematoxylin. and eosin (H&E). Periodic Acid Schiff (PAS) and Improved Jones Methanamine Silver (JMS) stains were used to demonstrate any increase in the thickness of basement membrane of the glomeruli and congo red when amyloidosis was suspected. The lesions were classified according to the criteria described by Hepinstail.[11]
The ages of patients ranged from 6 months to 74 years and male to female ratio was 1.6: 1.

TABLE I. Histological Diagnosis in 948 Percutaneous Renal Biopsies in Adults in the present Series.

I.	Primary Glomerular Diseases	Numbers	Percentage
	Minimal Change Disease	274	29.0
	Proliferative Glomerulonephritis	241	25.0
	Membranous Glomerulonephritis	71	7.5
	Chronic Glomerulonephritis	114	12.0
	Focal Sclerosing Glomerular Lesion	10	
	Subtotal – I	710	75.0
II.	Secondary Glomerular Diseases		
	Chronic Pyelonephritis	84	9.0
	Diabetic Nephropathy	27	3.0
	Glomerulosclerosis	14	1.5
	Amyloidosis	48	5.0
	Systemic Lupus Erythematosus	12	1.0
	Poly Arteritis Nodosa	3	0.3
	Hypertensive Nephropathy	5	0.5
	Interstitial Nephropathy	12	1.0
	Renal Vein Thrombosis	1	0.1
	Miscellaneous (Necrosis, Infarct & Haemorrhage)	12	1.0
	Nephrosis	5	0.5
	Subtotal –II	220	23.0
	End Stage	18	2.0
	Grand Total	948	100.0

TABLE-II. Renal Biopsies in Children Histological Diagnosis and comparative Study.

Diseases	Present Series		Churg 1970	
	Number	Percentage	Number	Percentage
Minimal Change Disease	97	45.0	98	77.0
Proliferative Glomerulonephritis	66	30.0	14	11.0
Chronic Glomerulonephritis	24	11.0	1	1.0
Chronic Pyelonephritis	14	6.5	--	None
Membranous Glomerulonephritis	8	4.0	2	1.5
Focal Sclerosing Glomerular Lesion	2	1.0	12	9.5
Amyloidosis	2	1.0	None	--
Glomerulosclerosis	2	1.0	None	--
Systemic Lupus Erythematosus	1	0.5	None	--
TOTAL	214	100.0	127	100.0

Tables-I and II show frequency of histological lesions in adults and children, respectively.
Of 948 biopsies in adults, 710 (7 5%) had primary and 220(23%) secondary glomerular lesions. In 18 (2%), lesions were advanced and could not be classified.
The most common lesions in both groups, viz., adults and children, were minimal change and proliferative glomerulonephritis. Their frequency in adults was 29% and 25% and in children 45% and 30%, respectively.
The next in frequency were chronic glomerulonephritis. (12% and 11% respectively) and chronic pyelonephritis (9% and 6.5% respectively).

COMMENTS

The lesions most frequently encountered in the present series were minimal change disorders and proliferative glomerulonephritis followed by chronic glomerulonephritis and chronic pyelonephritis. Nevertheless, frequency of amyloidosis and glomeruloscierosis were also noteworthy particularly in children (Table-I and II).
A higher frequency of minimal change disorder in adults and a lower frequency in children was observed in the present series as compared to the published data ($P< 0.05$) [1,2,5-6,8-9] (Tables-II and III). The contrary was true for proliferative glomerulonephritis, viz., its frequency was less in adults and high in children as compared to the reported series ($P <0.05$)[1-2,5-6,8-9] (Table II and III). Moreover chronic glomerulonephritis, quite prevalent in our series (both in adults and children), was reported only by Churg whereas chronic pyelonephritis was reported by none of them (Tables-Il and III).

TABLE III. A Comparison of various Glomerular Diseases in different Series in Adults.

Diseases	Present Series 948 biopsies %	Blainey 425 biopsies %	Nagi 459 biopsies %	Kark 98 biopsies %
1. Primary Glomerular Diseases				
Minimal Change	29.0	18.4	11.0	11.0
Proliferative Glomerulonephritis	25.0	67.6	61.0	18.5
Chronic Glomerulonephritis	12.0	--	--	--
Membranous Glomerulonephritis	7.5	14.0	9.0	29.0
Focal Sclerosing Glomerular Lesion	1.0	--	7.0	--
Subtotal – I	75.0	100.0	88.0	58.5
II. Secondary Glomerular Diseases				
Chronic Pyelonephritis	9.0	--	--	--
Amyloidosis	5.0	--	--	3.0
Diabetic Nephropathy	3.0	--	--	15.0
Glomerulosclerosis	1.5	--	--	--
Interstitial Nephropathy	1.0	--	--	--
Splenic Lupus Erythematosus	1.0	--	--	18.5
Hypertensive Nephropathy	0.5	--	--	1.0
Nephrosis	0.5	--	--	--
Polyarteritis Nodosa	0.3	--	--	--
Renal Vein Thrombosis	0.1	--	--	2.0
Miscellaneous (Necrosis, Infarct, Haemorrhage etc)	1.0	--	--	2.0
Subtotal – II	23.0	--	--	41.5
End Stage	2.0	--	--	--
Grand Total	100.0	100.0	100.0	100.0

Higher frequency of chronic, primary and secondary glomerular lesions in the present series could partly be due to the patients reporting late for. treatment and partly due to difference in the criteria for selection of biopsy cases. In the present series patients were randomly selected for biopsy. Thus the frequency of chronic pyelonephritis and glomerulonephritis in our series were similar to those of Huland and Busch[12] who studied the biopsy findings of 161 paTtients of various glomerular diseases undergoing renal dialysis (44% and 31% vs 35% and 26%).

The purpose of this study was to establish the pattern of glomerular disease in Pakistan. Being based upon light microscopic findings and special staining techniques only, the pattern is liable to change with the use of more sophisticated diagnostic tools like immunohistochemical methods, immunofluorescence and electron microscopy. We, however, assume that it would provide a baseline

for future research work.

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