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An analysis of glomerular diseases in children with haematuria undergoing biopsy at a paediatric renal referral centre

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Introduction and objectives: The most common cause of childhood haematuria is post-infectious glomerulonephritis (PIGN). Biopsy is performed only when the clinical picture is atypical for PIGN. Children with haematuria undergoing renal biopsies were evaluated to document the disease spectrum and histological complications.

Methodology: A retrospective descriptive study was done on 80 consecutive renal biopsies of children (<14 years) who presented with haematuria with or without other symptoms to the Paediatric Renal Unit, Teaching Hospital Peradeniya from 2021 to 2023. Follow up biopsies, developmental renal anomalies and post-transplant biopsies were excluded. Pathological evaluation was done with haematoxylin and eosin and methenamine silver stains and direct immunofluorescence.

Results: The diagnosis made were as follows: PIGN 34(42.5%), lupus nephritis 11 (13.75%), suspected lupus nephritis 6 (7.5%), suspected pauci-immune small vessel vasculitis 5(6.25%), idiopathic mesangioproliferative glomerulonephritis 5 (6.25%), IgA nephropathy 5 (6.25%), Henoch Schoenlein purpura 3 (3.75%), membranoproliferative glomerulonephritis 3 (3.75%), focal segmental glomerulosclerosis 1 (1.25%) and histologically unremarkable 3 (/3.75%). Four biopsies with necrotizing glomerulonephritis were unclassifiable due to the lack of clinical details and immunofluorescence findings. Of the biopsies with features of PIGN, nine were uncomplicated, 13 had karyorrhexis and 12 had crescents. Of the biopsies with IgA nephropathy, endocapillary proliferation was identified in one and crescents in another. Of the biopsies diagnosed as lupus nephritis, class II, III and IV were observed in two, two and seven respectively.

Discussion and conclusion: In children undergoing biopsies for haematuria the majority were diagnosed as PIGN. However, they had evidence of varying degrees of necrosis from karyorrhexis to crescents. Lupus nephritis and vasculitis were the next most common causes of hematuria in children. Immunofluorescence and clinical correlation are essential for a definitive diagnosis.

Keywords: post infectious glomerulonephritis, haematuria, crescents

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