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Clinicopathological spectrum of patients with renal lesions associated with lymphoma from a single Chinese center

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Objectives : The renal involvement in lymphoma is a rare disorder, which revealed heterogenous clinical and pathological manifestation, leading to diagnostic challenges. Hence,we attempted to describe the clinicopathological characteristics and outcome of this entity.
Methods : Between January 1, 2008 and September 30 ,2023, 47,093 renal biopsies were performed at Peking University First Hospital. 36 (36/47093,0.076%) patients with interstitial infiltration of lymphoma were enrolled, including 26 patients with low-intermediate grade B cell lymphoma (chronic lymphocytic leukemia/ small lymphocytic lymphoma, low-grade B-cell lymphoma, marginal zone lymphoma, mantle cell lymphoma and Wadenström macroglobulinemia), 7 patients with high grade B-cell lymphoma (diffuse large B-cell lymphoma, B lymphoblastic lymphoma) and 3 patients with T-cell lymphoma (T-cell large granular lymphocytic leukemia, angioimmunoblastic T-cell lymphoma).Clinical and pathological data were collected at the time of renal biopsy.
Results : In low-intermediate grade B-cell lymphoma, the extent of infiltrating neoplastic cells in renal interstitium was diverse, from 10 to 90% and vaguely nodular pattern can be seen. Coexisting glomerular diseases were identified in 23 cases, including 7 monoclonal immunoglobulin-associated diseases and 16 non-monoclonal immunoglobulin-associated diseases. In 5 patients, tubular basement membranes deposits were found by electron microscopy, and these patients had worsen renal survival than those without ($p = .02$). In high grade B-cell lymphoma, diffuse interstitial infiltration of neoplastic cells was prominent, resulting in acute kidney injury (AKI, 100%), and there were no significant glomerular abnormalities. In T -cell lymphoma, one (1/3) showed coexistent glomerular capillary infiltration. Univariate analysis showed that low-intermediate grade B-cell lymphoma had better renal survival than the other two types of lymphoma ($p < .001$).
Conclusions : Renal lesions associated with lymphoma included both of lymphomatous interstitial infiltration and paraneoplastic glomerulopathy, which manifested a diverse spectrum that depended on the pathological patterns of lymphoma. Renal biopsy is the best way to confirm this entity and required for early diagnosis to improve patient prognosis.

Figure1.png

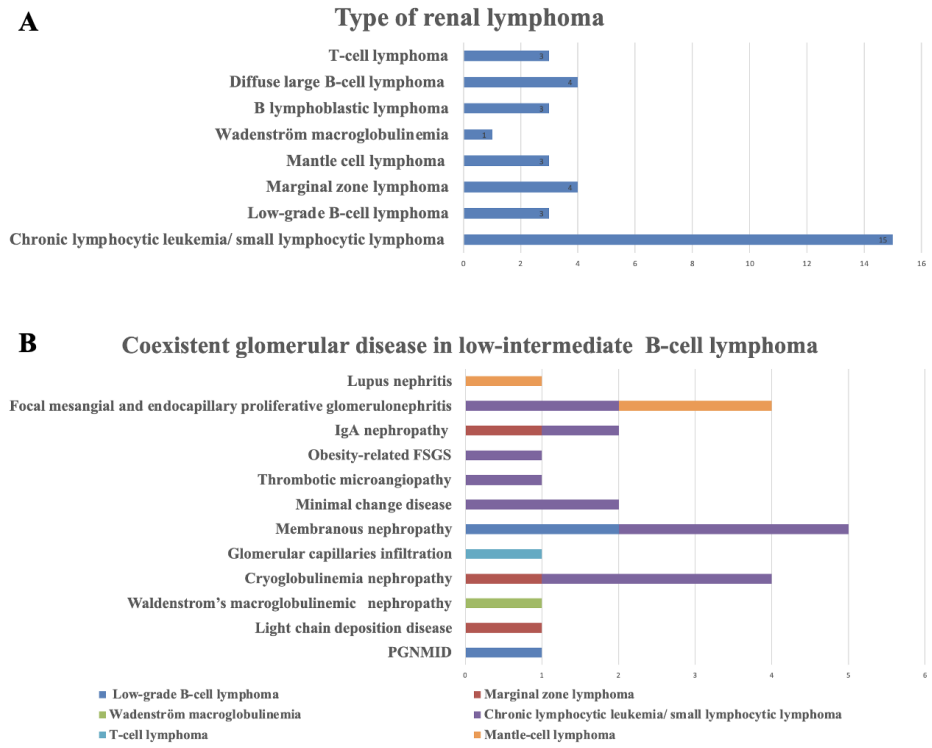
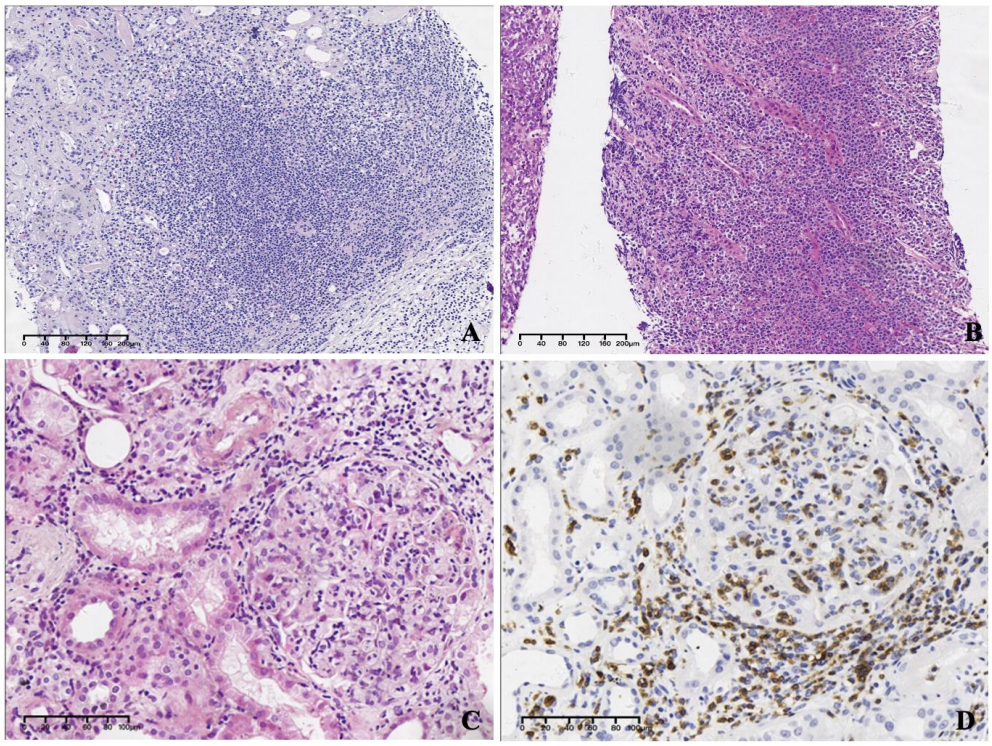

A
Type of renal lymphoma
T-cell lymphoma
Diffuse large B-cell lymphoma
B lymphoblastic lymphoma
Wadenström macroglobulinemia
Mantle cell lymphoma
Marginal zone lymphoma
Low-grade B-cell lymphoma
Chronic lymphocytic leukemia/ small lymphocytic lymphoma
0 2 4 6 8 10 12 14 16
B
Coexistent glomerular disease in low-intermediate B-cell lymphoma
Lupus nephritis
Focal mesangial and endocapillary proliferative glomerulonephritis
IgA nephropathy
Obesity-related FSGS
Thrombotic microangiopathy
Minimal change disease
Membranous nephropathy
Glomerular capillaries infiltration
Cryoglobulinemia nephropathy
Waldenstrom's macroglobulinemic nephropathy
Light chain deposition disease
PGNMID
0 1 2 3 4 5 6
Low-grade B-cell lymphoma
Marginal zone lymphoma
Wadenström macroglobulinemia
Chronic lymphocytic leukemia/ small lymphocytic lymphoma
T-cell lymphoma
Mantle-cell lymphoma

Figure1.png


A
B
C
D