

Pathology Page

Diffuse lupus nephritis

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A 33-year-old woman had foamy urine and severe edema of the foot for 1 month. Urinalysis showed proteinuria (3+), occult blood (2+), and total protein level of 4 g/day. A laboratory examination showed normocytic anemia (Hb, 8.5 g/dL; mean corpuscular volume, 89.3), thrombocytopenia (platelets count, 94,000), antinuclear antibodies 1:80 (+), anti-nDN, 24 IU/mL. A histopathological analysis of a kidney biopsy specimen showed lupus proliferative glomerulonephritis with wire-loop formation (Fig. 1). An immunofluorescence stain showed diffuse granular immunoglobulin G (IgG), IgA, IgM, C3, and C1q deposition in the capillary wall and mesangium (Fig. 1, inset). Diffuse lupus nephritis was diagnosed. The patient received pulse methylprednisolone and endoxan therapy, which improved hematuria and proteinuria. Diffuse lupus nephritis (Class IV) is the most serious form of renal lesions in systemic lupus erythematosus and is also the most commonly encountered case in renal biopsies, occurring in 35–60% of patients. Most of the glomeruli show endothelial and mesangial proliferation. When extensive, subendothelial immune complexes create a circumferential thickening of the capillary wall, resembling formation of rigid “wire loops”, such as the case in our patient. Immunofluorescence stains show full-blown immunoglobulin and complement deposition in the capillary wall and mesangial areas.

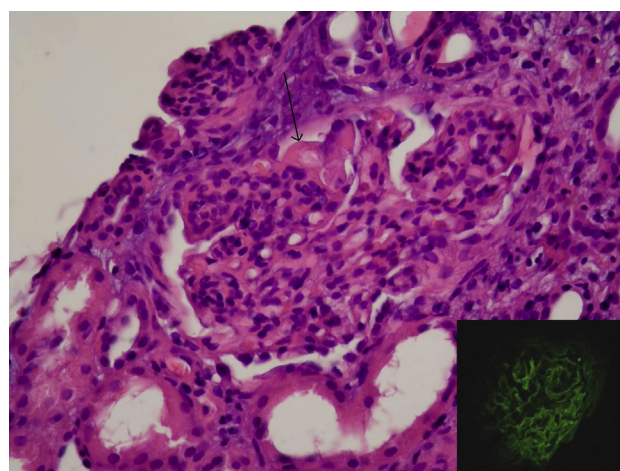


Fig. 1. Histopathology shows diffuse endothelial and mesangial cell proliferation with wire-loop formation (arrow) (hematoxylin and eosin: 400 $\times$). Immunofluorescence staining shows diffuse granular immunoglobulin G deposition in the capillary wall and mesangial area (inset: fluorescein isothiocyanate, 400 $\times$).

In due course, glomerular injury may give rise to scarring (glomerulosclerosis). Most affected patients have hematuria with moderate to severe proteinuria, hypertension, and renal insufficiency.

Further reading

- [1] Giannakakis K, Faraggiana T. Histopathology of lupus nephritis. *Clin Rev Allergy Immunol* 2011;40:170–80.
- [2] Schwartz MM. The pathology of lupus nephritis. *Semin Nephrol* 2007;27:22–34.
- [3] Appel GB, Valeri A. The course and treatment of lupus nephritis. *Annu Rev Med* 1994;45:525–37.

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