Diabetic Nephropathy and Concomitant Renal Diseases: The Role of Electron Microscopy in the Diagnosis of Dual Glomerulopathies

D.N. Howell[1]

[1] Department of Pathology, Duke University Medical Center, Durham, NC. USA.

Abstract

With the explosive growth of metabolic syndrome, diabetes mellitus and associated renal disease are reaching epidemic proportions, particularly in highly resourced countries with abundant and sometimes unhealthy food options. Patients with renal disease in the setting of diabetes are often assumed to have diabetic nephropathy (DN)(1), but a renal biopsy may be obtained in clinical situations that arouse suspicion for an alternative diagnosis, including rapid increase in serum creatinine or proteinuria, hematuria, absence of other forms of diabetic end-organ damage (e.g., retinopathy, neuropathy), renal dysfunction in the setting of relatively good glycemic control, or unexpected serological abnormalities (e.g., hypocomplementemia, anti-nuclear or anti-neutrophil cytoplasmic antibodies). Such biopsies sometimes confirm the presence of DN; occasionally, they may establish an entirely different diagnosis. A third situation is the presence of DN as well as a second pathological process (2). An unwary pathologist confronted with such a biopsy may recognize the diabetic component and miss the second abnormality. This presentation will provide several examples of this potential diagnostic pitfall and illustrate the importance of electron microscopy in avoiding it.

References

1. Tervaert et al., Pathologic Classification of Diabetic Nephropathy. J Am Soc Nephrol. 2010;21:566-563.
2. Howell, DN. Pitfalls in the Pathological Diagnosis of Glomerular Diseases: Why Stop at One? Glomerular Dis. 2025;5:250-260.