

Membranous nephropathy is one of the common primary glomerular diseases among Koreans and comprises 10.5% of the biopsy cases. It has been our experience that hepatitis B virus infection plays an important role for its high incidence and earlier development of glomerulopathy than in other countries, and illustrates often unusual morphological changes in comparison with idiopathic form of membranous nephropathy.

Furthermore, the morphologic lesions of the membranous nephropathy are an analogue of subepithelial deposits and membranous reaction, being affected by a diffuse thickening of capillary walls according to the various stage of development, but it has been given little attention on its focal and segmental form of involvement and even on its implication to diagnostic pathology.

We present a case from 5-year old boy with nephrotic syndrome showing focal and segmental involvement of membranous nephropathy.

Light microscopic examination of needle biopsy specimen revealed 24 glomeruli, which was evenly approximated and normocellular. Capillary walls seemed generally thin and delicate, but half of the glomeruli are affected with spike formation or fuchsinophilic deposits in segmental fashion. Immunofluorescent stainings demonstrate scanty IgG and C₃ in fine granular nature along the peripheral walls mostly in segmental form. Electron microscopy reveals evenly thin lamina densa with diffuse effacement of foot process, and focal involvement of homogenous electron dense deposits situated on the epithelial side of basement membrane.

The possible pathogenesis and diagnostic implication of this peculiar glomerular lesion were discussed.

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Dense deposit disease (DDD) or membranoproliferative glomerulonephritis type II is a rare form of primary glomerulopathy which has been recognized as a specific clinico-pathologic entity with unique characteristics and peculiar relationship to alternating complement activation pathway. Although it may resemble, by light microscopy, membranoproliferative glomerulonephritis with subendothelial deposits (type I) because of mesangial hypercellularity and increase in mesangial matrix, DDD can be clearly distinguished from the former by intramembranous deposits of osmiophilic substance in ribbon-like manner along the peripheral glomerular basement membrane.

We present a case from a 12-year old girl who presented nephrotic syndrome and persistent hypocomplementemia following cellulitis and Streptococcal pneumoniae septicemia. The light microscopic examination showed diffusely enlarged and hypercellular glomeruli with thickened homogenously refractile capillary walls together with tram-track appearance in silver impregnation. Mesangial expansion and abundant fuchsinophilic deposits were also seen. The direct immunofluorescent study demonstrated intense nodular mesangial deposits of C₃ surrounded by faint pseudolinear deposits along the peripheral capillary walls. The electron microscopic study clarified the sharply defined electron dense deposits along the widened lamina densa in irregular discontinuous and ribbon-like pattern. Similar deposits were also seen in a portion of Bowman's capsule.

It is assumed that this variant of membranoproliferative glomerulonephritis is an extremely rare condition and is the first proven case in Korean literature.