Membranous Nephropathy and Granuloma

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Dear Sir,

The association between neoplasms and the nephrotic syndrome is by now well recognized, with most investigators regarding the relationship as being more than coincidental [1]. One of the commonest associations is that of membranous nephropathy and carcinoma. Membranous nephropathy associated with benign tumor have also been reported by several authors [2-4], but up to now, we have not found an association between membranous nephropathy and granuloma.

A 57-year-old man was admitted in October 1992 because of fever, cough and bloodstained sputum. CT examination in a local hospital revealed a mass in the upper lobe of his left lung. Six months previously, he was treated elsewhere for nephrotic syndrome, but he did not improve. On examination, edema was present in lower extremities. Laboratory findings were as follows: Hb 110 g/l, RBC $3.6 \times 10^{12}/l$, WBC $7.4 \times 10^9/l$, BUN 14.2 mmol/l, serum creatinine 108.1 $\mu\text{mol/l}$, serum total protein 46 g/l, albumin 20 g/l. Urinalysis revealed 3+ proteinuria and hyaline casts; 24-hour urine protein loss was 1.94 g/l. X-ray and CT examination showed a solid growth in his left lung. The mass was irregular in shape and margin. Based on clinical materials, cancer was diagnosed. Surgery in November 1992 confirmed the presence of a tumor in the upper lobe. The tumor was excised and measured $4 \times 3 \times 3.5$ cm. Histology showed inflammation granuloma with foam cell invasion. Two weeks later, the lesion was healed, but the nephrotic syndrome persisted. A renal biopsy was performed.

The glomeruli exhibited slight diffuse membranous thickening of capillary walls.

Immunofluorescence revealed granular deposits of IgG(++) diffusely spread on the basement membrane of all glomerular capillary loops. Ultrastructurally, electron-dense deposits were seen on the subepithelial side of the basal capillary membrane. There was reactive spike-type proliferation of the lamina densa. Epithelial cell foot processes were extensively fused (fig. 1).

In 1966, Lee et al. [5] first reported an association between idiopathic nephrotic syndrome and cancer, subsequently, numerous reports have confirmed this association. Investigators speculated that neoplasms may act as antigens in such cases, with the glomerular lesions resulting from the deposition of immune complexes containing tumor antigen and specific

antibody. Many authors believe that a definite etiological association between a renal lesion and a neoplasm, which is not fortuitous, exists [2]. Membranous nephropathy is the commonest glomerular lesion observed in association with neo-plasia, especially with carcinoma [4]. The present case showed typical membranous nephropathy; after the extirpation of the granuloma, together with the steroid therapy, the patient's condition changed, but mild proteinuria persisted. In our patient, the relationship between granuloma and nephropathy is difficult to determine, it may represent a coincidental concurrence of granuloma and membranous nephropathy, but we think a causal relationship between the two cannot be excluded.

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Fig. 1. Electron micrograph showing thickened basement membrane with electron-dense subepithelial deposits. $\times 12,000$.

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