

Minimal Change Disease Associated with Ingestion of Poison Sumac

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Idiopathic nephrotic syndrome is a disease entity with no known cause. The clinical symptoms include severe proteinuria, hypoalbuminemia, dyslipidemia, and edema. Minimal change disease (MCD) is a form of podocytopathy that is one of the most common causes of this nephrotic syndrome. The pathogenic mechanism of MCD is still unclear. So far, circulating factors related to T-cells have been regarded as the main cause of podocyte dysfunction.¹ As a result, clinical conditions that alter the release of immunological substances from T-cells (such as atopy) may be a possible cause of MCD.² Although the direct role of allergy in MCD is still unclear, we might reconsider a causal relationship between atopy and MCD as a result of an interesting MCD case associated with ingestion of the poison sumac.

A 20-year-old male visited our emergency room with facial edema and a whole-body rash that developed suddenly 4 days earlier after eating chicken soup with sumac. His vital signs on arrival were stable. His serum creatinine and albumin were 1.12 mg/dL and 1.8 mg/dL, respectively. His urine protein/creatinine and albumin/creatinine ratios were 5700 mg/g and 3820 mg/g, respectively. Serum immunoglobulin E (IgE) levels were 6958 IU/mL, but there was no eosinophilia on arrival. We firstly prescribed 30 mg

of intravenous methylprednisolone. The facial rash disappeared, however the generalized edema and nephrotic-range proteinuria remained. Computed tomography of the abdomen did not show any specific findings. An angiotensin receptor blocker (ARB) and furosemide were prescribed, however, persistent proteinuria remained. Therefore, the patient underwent a renal biopsy. There was no evidence of immune complexes found using immunofluorescence and light microscopy (Fig. 1A). Ultrastructurally, the glomerular basement membrane showed normal thickness and smooth contours without electron-dense deposits. The foot processes of epithelial cells were prominently effaced (Fig. 1B). We placed the patient on a high-dose steroid regimen, together with diuretics and an ARB. His symptoms and signs improved dramatically.

Poison sumac is a well-known allergen derived from the Chinese lacquer tree. Contact with poison sumac can easily result in an allergic skin reaction; even touching the lacquer tree can be sufficient for this reaction. Chicken soup with sumac is a well-established meal among the South Korean population. People having the chicken soup with sumac may often suffer severe allergic reactions due to systemic spreading of poison sumac. Likewise, allergy associated with the alteration of T-cells may also be a possible

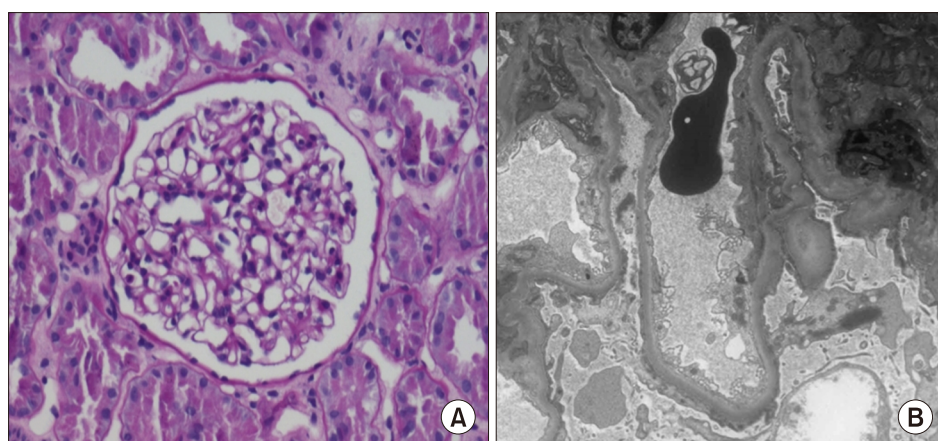


FIG. 1. Light microscopic finding shows normal glomerulus except slightly increased mesangial matrix (Hematoxylin and Eosin stain, ×400) (A). Electron microscopic finding shows glomerular basement membrane with normal thickness and smooth contours without electron-dense deposits. However, the foot processes of epithelial cells were prominently effaced (B).

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cause of MCD. The prominent allergic response through systemic exposure of poison sumac may also induce MCD, a form of podocytopathy that result in nephrotic syndrome. Therefore, if urinary abnormalities persist in atopic patients after their allergic symptoms have improved, clinicians should consider a renal biopsy to definitively diagnose the patient's condition.

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CONFLICT OF INTEREST STATEMENT

None declared.

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