

## SMOKING ASSOCIATED NODULAR GLOMERULOSCLEROSIS

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We describe a case of Smoking associated Nodular Glomerulosclerosis (NG) in a non-Diabetic Caucasian male who presented with nephrotic range proteinuria.

A 66-year-old white male presented with history of foamy urine of several months. He denied any lower extremity swelling or early morning periorbital edema, hematuria or difficulty voiding urine. His past medical history included HTN, peripheral vascular disease COPD, CAD, but no history of Diabetes. He had a 50-pack year history of smoking. On evaluation, his vitals were stable and examination of systems was unremarkable. His initial labs were essentially normal except for a BUN 34 and Serum creatinine 1.7. Urine analysis showed 3+ proteinuria with no casts. His renal ultrasound showed no hydronephrosis. A 24-hour protein collection of 2500ml contained 1.6gm/24h of Creatinine and 3.9 gm of protein.

The serological panel included ANA, RF, ANCA, Anti-GBM antibody, and cryoglobulins which were normal. A workup for myeloma was negative. Subsequent to this work up the patient underwent a renal biopsy which revealed NG with focal sclerosis

Discussion: Smoking associated NG is a rare cause of nodular sclerosis (0.4% of renal biopsies performed). It typically affects elderly caucasian males with long standing hypertension (HTN) and tobacco use. Majority of the patients have nephrotic range proteinuria (70%) and chronic kidney disease on presentation (82%). About 50% of the patients have a history of peripheral vascular disease. The median time from biopsy to ESRD has been described to be 26 months. Formation of advanced glycation end products (AGE), induction of oxidative stress, angiogenesis and altered intrarenal hemodynamics has been implicated. Smoking cessation, Renin angiotensin system (RAS) blockade for HTN has been associated with slow progression. Degree of tubular atrophy and interstitial fibrosis also determine progression.

Conclusions: Although a rare entity Smoking related GS must be considered in a patient with long standing hypertension and smoking with nephrotic range proteinuria.