and to better distinguish methodologic differences from biologic ones.

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Diabetic Nephropathy With Normal Glucose Tolerance

I read with interest the article by Dr. Chan and associates[1] in a recent issue of DIABETES CARE in which they describe diabetic nephropathy and proliferative retinopathy in a patient with normal glucose tolerance. The similarity between the micrographs presented in their Figure 1 and our micrograph (Figure 1) was striking to me. During the course of our studies of the consequences of exogenous insulin infusion in nondiabetic animals, we unexpectedly found amyloidosis in kidney, heart, liver, spleen, and elsewhere.

On first review of the histologic sections of renal tissue in these animals, we were struck by the apparent "diabetic nephropathy" that these animals had developed. However, since we were fortunate in having tissue from liver, spleen, and other organs, which in some animals was similarly abnormal, we sought to elucidate more thoroughly the nature of the renal deposits. Our finding of unanticipated amyloidosis in kidneys and other organs of normal animals that were infused with insulin has been reported in detail.[2] Our animals, like Dr. Chan's patient, were nondiabetic with normal fasting plasma glucose concentrations as well as normal glucose tolerance (data not shown).

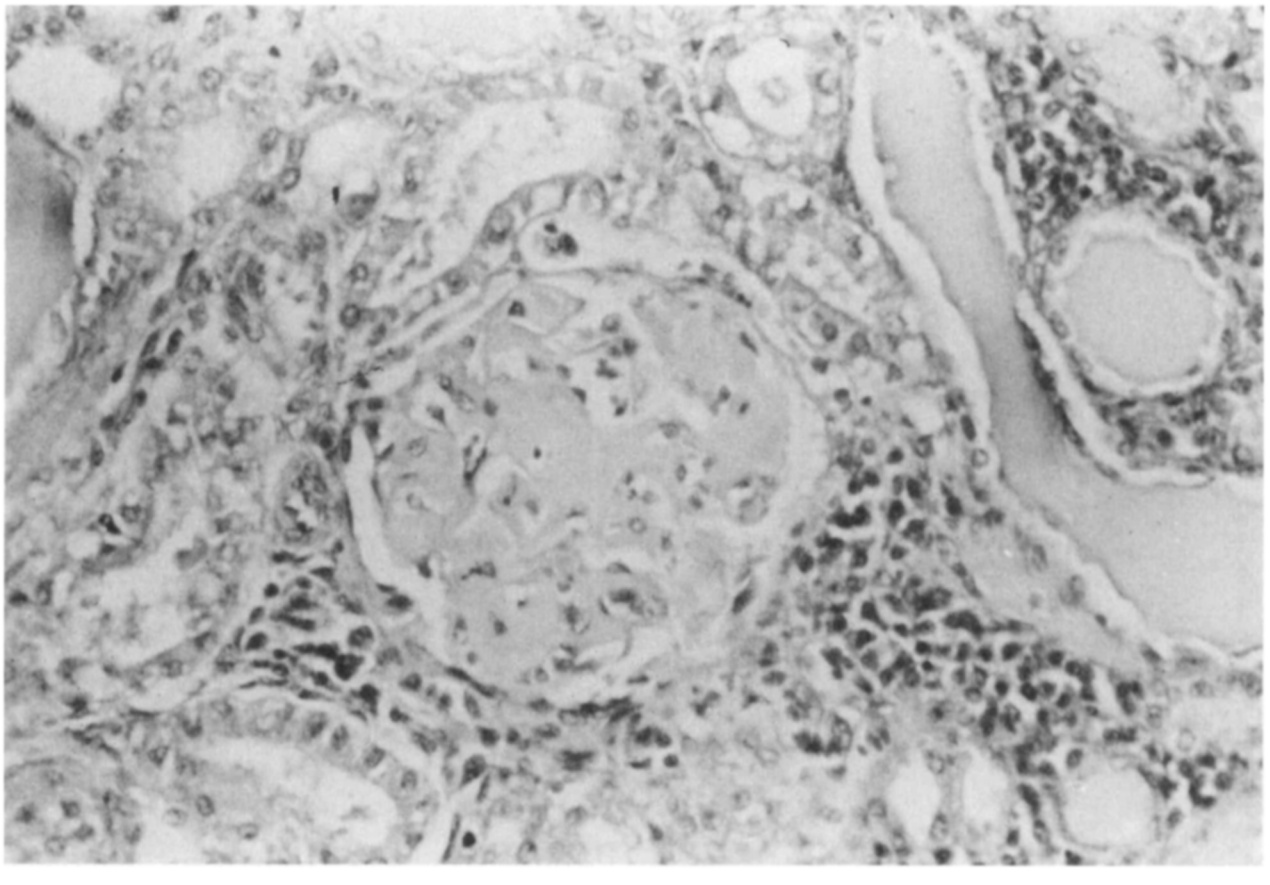

FIG. 1. Classic "diabetic nephropathy" in nondiabetic animal is actually secondary amyloidosis.

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Dr. Chan and colleagues did not report whether they stained their patient's tissue for amyloid and we, as well as others interested in this issue, would be most curious to know whether this possibility had been explored. Furthermore, in our study, elevated levels of alkaline phosphatase correlated with the presence of hepatic amyloid. In the light of our previously reported observations in regard to "diabetic" renal lesions in nondiabetic animals, it would be important to rule out the possibility that this was merely secondary amyloid rather than diabetic nephropathy in nondiabetic patients.

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Diabetic Nephropathy With Normal Glucose Tolerance: A Reply

We would like to thank Dr. Albisser for his interesting letter raising the point of the histopathological similarity between diabetic nephropathy and renal amyloidosis. We are familiar with the interesting work of Dr. Albisser and his colleagues[1] regarding the occurrence of amyloidosis in dogs infused with insulin.

The differential diagnosis of nodular glomerulosclerosis includes diabetes mellitus, amyloidosis, and light-chain disease. Because of these similarities, kidney biopsies that show nodular glomerulosclerosis are routinely tested for amyloidosis by a Congo red test that was negative in our patient. Moreover, the electron-microscopic picture did not show the classic amyloid fibrils. These two findings practically rule out amyloidosis as an underlying cause for the nodular glomerulosclerosis in our patient. We have also excluded light-chain disease by several investigations including serum and urinary immunoelectrophoresis, urinary Bence Jones proteins, staining of the kidney biopsy for K- and λ-light chains. All these tests were negative. Moreover, in the pathological sample of our patient there were other lesions typical of diabetic nephropathy including hyaline caps and capsular drops. In the electron-microscopic examination the mesangial nodules were made of layers of mesangial matrixlike material, which is characteristic for diabetic glomerulosclerosis.

The occurrence of severe proliferative retinopathy in association with nephropathy in this patient further indicates a relationship to diabetes rather than to amyloidosis or light-chain disease.

Although we agree with Dr. Albisser that not all nodular glomerulosclerosis is caused by diabetes, in this particular case report we think it is.

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Hand Warts Associated With SMBG

The importance of self-monitoring of blood glucose (SMBG) in controlling glucose levels and adjusting insulin dosage in children with type I diabetes has been well established. Although many children have SMBG performed by parents, some children prefer more active participation in the management of diabetes and regularly perform capillary glucose measurements on themselves. Recently, a child who has been performing SMBG developed an unusual complication.

A 10-yr-old girl with a 4-yr history of type I diabetes has had episodic, profound hypoglycemia usually associated with changes in activity. In an effort to prevent these, capillary glucose values have been monitored at least twice daily. During the past year, the child has assumed an increasing role in performing these measurements. The accuracy of glucose values as determined by the child has proven to be quite satisfactory. She has not objected to performing the tests but has preferred not to cleanse her fingertip with either an alcohol or water wash before obtaining a blood sample. The child was known to have several common warts on her knees and has had some of these removed in the past. However, some warts remain. Recently, the child developed a number of lesions on her fingertips. On close inspection, these lesions were found to be warts located in the areas where the child had been performing finger punctures for capillary glucose monitoring. The fifth digits and areas of the fingers other than the fingertips, which were never used for blood sampling, were uninvolved. The patient has had the warts chemically removed. She has been carefully following handwashing techniques since this episode and has had no further occurrences.

There can be no doubt that SMBG has provided a means of controlling diabetes that was previously unavailable. Problems associated with accuracy of glucose readings have been

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