

We have recently observed a patient in whom fluids were restricted inadvertently before pyelography, and in whom acute oliguric renal failure of three days' duration developed.

"A 52-year-old normotensive diabetic man was known to have had proteinuria and diabetic retinopathy for several years. Elevation of blood urea nitrogen was first recorded some 12 months earlier, and further deterioration in renal function occasioned admission to the hospital (with a blood urea nitrogen of 63 mg and serum creatinine of 4.5 mg per 100 ml). His general condition was good. The urine volume was about 2000 ml, and protein excretion 1.3 gm per 24 hours.

"Shortly after admission drip-infusion pyelography was done with the use of 150 ml of meglumine diatrizoate³ in 150 ml of 3 per cent sodium chloride, the infusion being completed in 10 minutes. There were no immediate adverse reactions, but severe oliguria (excretion of less than 400 ml per day) developed within several hours after the procedure was completed. An attempt to induce diuresis with annitol failed. Oliguria persisted for three days, after which a spontaneous diuresis ensued. Subsequent progress has been uneventful."

DISCUSSION

Acute oliguric renal failure after infusion-drip pyelography has not previously been reported. Since fluids were inadvertently withheld in our patient, the situation seemed akin to the renal failure in multiple myeloma that may follow standard intravenous pyelography. This has been attributed to dehydration causing precipitation of proteinaceous material in the renal tubules.^{4,5} A similar mechanism may have been responsible in our patient. However, since thousands of diabetic patients must have been subjected to standard intravenous pyelography, with its necessary preliminary dehydration, one would have expected many cases of acute renal failure to have been reported. It is tempting to conjecture that the increased dosage of contrast material employed in conjunction with dehydration helped precipitate renal shutdown.

APPENDIX II

[From the New England Journal of Medicine, vol. 279, No. 23, Dec. 5, 1968]

CHRONIC NITROFURANTOIN PULMONARY REACTION*—Report of Five Cases

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Abstract in five cases diffuse interstitial pneumonitis or fibrosis, or both (as proved by lung biopsy), was seen after long-term therapy with nitrofurantoin. The acute form of nitrofurantoin pneumonitis is characterized by the sudden onset of cough, dyspnea and fever, and the rapid disappearance of the symptoms and findings when the use of the drug is discontinued. The chronic form is insidious in onset, is not associated with a febrile reaction, produces a nonspecific histologic and radiologic picture of diffuse interstitial pneumonitis or fibrosis, or both, and may be at least partially reversible when the drug therapy is discontinued and steroids are employed.

Pulmonary reaction caused by systemically administered drugs has been well described in the literature, and the association has been seen with antituberculosis chemotherapy, (1) with hexamethonium therapy, (2, 3) after mecamlamine therapy (4) and with busulfan, (5) hydrochlorothiazide, (6) methysergide (7) and sulfonamides. (8) Since 1962 pulmonary infiltrations considered due to nitrofurantoin have been reported with increasing frequency, and most of the reported cases have dealt with acute nitrofurantoin pneumonia. (9, 19) The term "nitrofurantoin pulmonary reaction" was proposed by Nicklaus and Snyder (19) for

* In the form of Renografin 60, E. R. Squibb & Son, New York, N.Y.

⁴ Brown, M., and Battie, J. D. Jr., Effect of urography on renal function in patients with multiple myeloma. *Canad. M.A.J.* 91: 786-790, 1964.

⁵ Morgan, C., Jr., and Hammack, W. J. Intravenous urography in multiple myeloma. *New Eng. J. Med.* 275:77-79, 1966.

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NOTE.—Numbered references at end of article.