primary care provider or the nuclear medicine consultant be a prerequisite to the performance of this study.

We would like to mention also that as our experience with this technique has increased we have discovered a subset of patients in whom the VEDRS occasionally may still fail to distinguish between the dilated nonobstructed and the dilated obstructed system. These are the patients with massively dilated systems of bilateral hydronephrosis and megaureters secondary to the posterior urethral valves or the megacystis/megaureter syndrome. In these patients we have a suspicion that tracer washout may still be delayed in the absence of significant obstruction. In this subset of patients a normal washout can be safely interpreted to indicate the absence of obstruction but a delayed washout result must be interpreted with caution. We are further investigating this subset of patients in an attempt to define parameters that can make this distinction accurately.

Finally, we do not recommend routine catheterization for this study; however, we do routinely have the patient void prior to the diuretic phase. We will catheterize individual patients with neurogenic bladders or moderate to gross vesicoureteric reflux as this will alter the diuretic clearance curves.

Reference

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Method for Measurement of Differential Renal Function

TO THE EDITOR: The recent excellent publication by Chachati et al. (*J Nucl Med* 1987; 28:829–836) on a "Rapid Method for the Measurement of Differential Renal Function: Validation" compared the 1–3-min fractional uptake of technetium-99m diethylenetriaminepentaacetic acid ([^{99m}Tc]DTPA) and iodine-131 hippuran to inulin GFR and PAH ERPF measurements, respectively.

1. Like previous investigators (*1–5*), a standardized distance (20 cm in this case) was used between the dose to be injected and the camera collimator to obtain the preinjection syringe count. The rationale for this methodology eludes us; the variation in count rate between the surface of a parallel hole collimator and a small source at different distances is negligible. In fact, Gates produced experimental verification of this in one of his own publications (*5*) yet persisted in using a fixed distance (30 cm). Since renal depth in an adult is usually of the order of 6–10 cm, these arbitrary distances are even more mystifying.

Question: Why not simply do away with the fixed distance device and put the dose on the face of the collimator?

2. The use of a 3-mCi dose of [^{99m}Tc]DTPA represents a compromise between the more reasonable 10–15 mCi necessary for good imaging quality and the constraints imposed by system deadtime in measuring the preinjection syringe on the scintillation camera itself.

Question: Why not put the syringe in a lead-lined container (e.g., 1/16-in. lead that attenuates something over 98% of the incident gamma rays at 140 keV) so that adequate imaging doses may be easily quantitated? This would reduce the count rate from a 15-mCi dose to something less than 100,000 cpm. We have routinely used this methodology for 4 yr (*6*) and find it quite helpful. Simply use a stainless steel syringe carrier ("boat") with a 1/16-in. lead liner placed directly on the collimator. The postinjection syringe is imaged similarly to correct for the 5–10% residual activity left in the needle hub. The experimentally determined transmission thru this thickness of lead was 0.0178 for 140 keV.

3. The legends for Figures 2 and 3 seem to be transposed.

4. The formula relating uptake of DTPA in one kidney to inulin clearance produces a lower estimate of clearance than one-half of the global estimating equation (~9% lower). It is not clear how this formula was derived. Does it assume equal function of left and right kidneys, or does each kidney require a different equation? This might explain some of the discrepancy.

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5. Gates GF. Split renal function testing using Tc-99m DTPA. *Clin Nucl Med* 1983; 8:400–407.
6. McAfee JG, Thomas FD, Subramanian G, et al. Detection of diffuse glomerular lesions in rats: I. Comparison of conventional radioactive agents. *J Nucl Med* 1986; 27:502–512.

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REPLY: We agree that the solution proposed by Dr. Thomas and Dr. McAfee allows the use of a more satisfactory dose for good imaging quality.

3. The legend for Figures 2 and 3 are indeed transposed. We apologize for this oversight.

4. The formulae relating uptake of diethylenetriamine pentaacetic acid to inulin clearance (Table 1) in one or two kidneys are very similar. The number of patients in whom separate renal function could be studied by standard technique is small, but neither the slope nor the intercept of the regression equation appear to differ from those obtained in the two studies. The reason for studying separate renal function was to analyze the adequacy of kidney and background region of interest determinations without the compounding influence from the other kidney. Our limited sample size did not allow us to derive separate equations for the left and right kidneys.

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