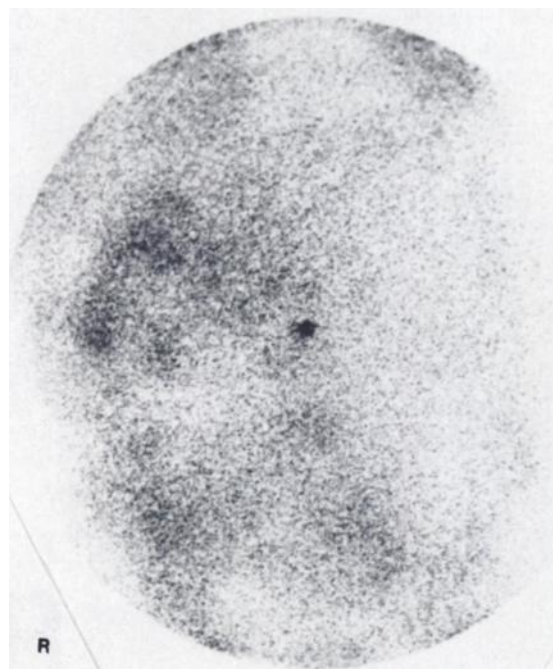


# Indium-111 White Blood Cell Scan for Infectious Complications of Polycystic Renal Disease

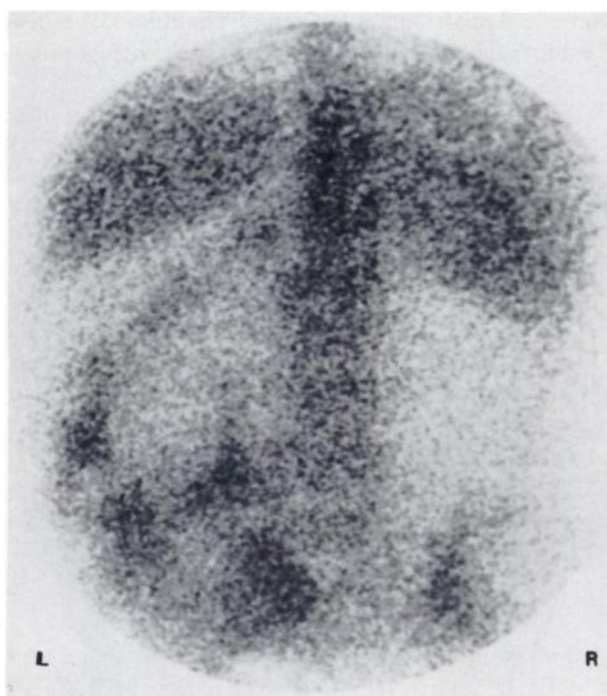
**TO THE EDITOR:** We were interested to read the article by Gilbert et al. (*J Nucl Med* 26: 1283-1286, 1985) in which they reported their use of indium-111 white blood cell scan to localize unilateral renal abscess in a febrile patient with polycystic renal disease, where a gallium-67 ( $^{67}\text{Ga}$ ) scan failed to identify the source of infection.

In contrast, we have found that the  $^{67}\text{Ga}$  scan has been helpful in detecting infected polycystic kidney disease in a series of renal transplant patients. The following case report illustrates the value of this technique.

A 52-yr-old male with polycystic kidney disease diagnosed in 1977 had his first cadaveric renal transplant in 1982 which failed after 1 mo due to vascular rejection. In March 1983 he had his second cadaveric renal transplant which functioned satisfactorily. Postoperatively, he developed recurrent fever and urinary tract infections with positive urine cultures (*Pseudomonas*, *Klebsiella*, and *E. Coli*). He denied any loin tenderness. A  $^{67}\text{Ga}$  scan was carried out in order to identify the source of infection. This demonstrated abnormal uptake localized to the region of the right kidney (Fig. 1). A right nephrectomy was also performed. Histologically, the renal parenchyma had been completely replaced by multiple pus-filled cysts. Four months later his fever and urinary tract infections returned. A second  $^{67}\text{Ga}$  scan demonstrated an abnormal accumulation of  $^{67}\text{Ga}$  in the remaining left kidney (Fig. 2). Surgical exploration revealed multiple infected cysts, and a left nephrectomy was carried out. A follow-up  $^{67}\text{Ga}$  scan at 2 mo showed no activity in either renal area, indicating the clearance of the suppurative process. The correlation of local-



**FIGURE 1**  
Anterior  $^{67}\text{Ga}$  image of abdomen with marker on umbilicus showing uptake in right side of abdomen



**FIGURE 2**  
Posterior  $^{67}\text{Ga}$  image of abdomen showing uptake in left renal bed

ized  $^{67}\text{Ga}$  uptake to the infective changes was proven at both operations in this patient.

We are currently studying the diagnostic accuracy of the  $^{67}\text{Ga}$  scan in the detection of foci of infection in renal transplant patients with underlying polycystic kidney disease, who have suffered from recurrent urinary tract infections.

Victor Tsang  
Andrew Hilson  
Paul Sweny  
The Royal Free Hospital  
Hampstead, London

**REPLY:** The case report by Tsang et al. is very interesting and we look forward to seeing the results of their ongoing study. We have no definite explanation for the lack of gallium uptake by the infected kidney in our case report and have not had the opportunity to assess this phenomenon in other such patients.

Despite the preparation time involved in the separation and labeling of leukocytes for reinjection, we do feel that this technique offers certain advantages over gallium scanning, namely, absence of colon activity, earlier imaging time, and lack of urinary excretion.

It would be interesting to prospectively compare the diagnostic accuracy of indium-labeled leukocytes with gallium in the setting of polycystic kidney disease to see if one of these techniques truly has greater sensitivity and specificity.

Bruce Gilbert  
Manuel Cerqueira  
Veterans Administration Medical Center  
Seattle, Washington