

# **nm/ LETTER TO THE EDITOR**

## **COMPARISON OF $^{99m}\text{Tc}$ -PERTECHNETATE AND $^{197}\text{Hg}$ -CHLORMERODRIN FOR BRAIN SCANNING**

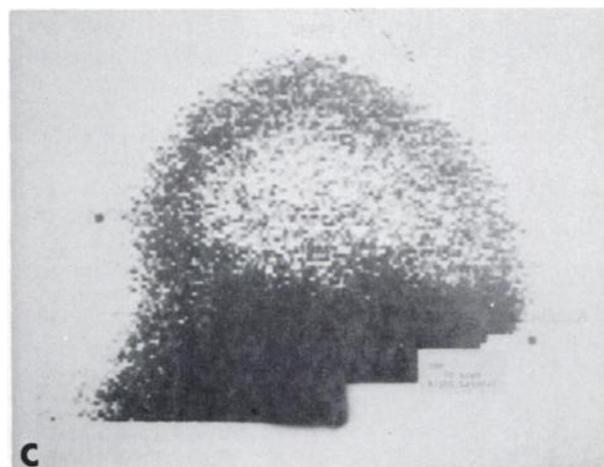
Several reports have compared the gross clinical accuracy of  $^{99m}\text{Tc}$ -pertechnetate with  $^{197}\text{Hg}$ -chlormerodrin for brain scanning. It has been generally assumed that the clinical accuracy of these two radiopharmaceuticals is approximately the same, and most laboratories, including our own, adopted  $^{99m}\text{Tc}$ -pertechnetate as the brain-scanning radiopharmaceutical because of the increased statistics and decreased scanning time with this agent. However, during the last 6 months there have been several reports and many personal communications stating that  $^{99m}\text{Tc}$ -pertechnetate had "missed" vascular lesions—hematomas and some metastatic lesions—which were visualized with  $^{197}\text{Hg}$ -chlormerodrin. Always when such reports are made, the various investigators who read the reports believe that a difference in technique may possibly be involved in the findings. Therefore, we have done a controlled study over the last 6 months following up  $^{99m}\text{Tc}$  brain scans with

$^{197}\text{Hg}$  brain scans and residual scans. Using the best techniques at our command, we have found that the routine brain scans done at the suggested times with  $^{197}\text{Hg}$ -chlormerodrin and 4–6 hr postdose residuals were comparable to the  $^{99m}\text{Tc}$ -pertechnetate scans. If the  $^{99m}\text{Tc}$ -pertechnetate scan was borderline abnormal, so was the routine  $^{197}\text{Hg}$ -chlormerodrin scan and 4–6 hr residual scan.

Because we have found that primary bronchogenic carcinoma can be visualized best 24 hr after  $^{197}\text{Hg}$  is administered, we added a 24-hr residual scan to our brain-scanning series. Much to our surprise, isolated metastatic lesions in the brain were visualized with ease although all the previous scans with mercury or technetium had been either normal or borderline. This finding is probably correlated with the fact that metastatic disease is poorly vascularized; therefore time is important for increased accumulation of mercury and increased clearing of the radiopharmaceutical from the blood.

Because the metastatic disease population is so great and brain scanning is becoming so popular as a screening device, we recommend that  $^{197}\text{Hg}$ -chlormerodrin be used with a suggested 24-hr residual scan on all patients suspected of metastatic disease.

**D. BRUCE SODEE**  
Hillcrest Hospital  
Cleveland, Ohio



**FIG. 1.** Comparison of brain-scan results using  $^{197}\text{Hg}$ -chlormerodrin and  $^{99m}\text{Tc}$ -pertechnetate shows (A) right lateral  $^{197}\text{Hg}$  scan made at 6 hr, (B) right lateral  $^{197}\text{Hg}$  scan made at 24 hr and (C) right lateral  $^{99m}\text{Tc}$  scan.