

Case of the Quarter

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Case History

The patient was a 50-year-old man who complained of occasional dizziness for four months. He was seen by a neurologist, who was unable to find any abnormal neurological signs. In November 1974, a brain scintigraph was performed on a Searle Radiographics Pho/Gamma III HP scintillation camera. The anterior perfusion study with 15 mCi of ^{99m}Tc -pertechnetate was within normal limits. Static scintiphotos were performed with a 350,000 preset count at 1½ hr after injection and using a 15,000 parallel-hole collimator. The views were obtained in the following sequence: anterior, right lateral, left lateral, and posterior.

Figure 1 shows the brain scintiphotos obtained at this time. The localized area of increased radioactivity observed in the left lateral and posterior views is most likely due to:

1. Cerebrovascular accident
2. Brain tumor
3. Arteriovenous malformation
4. Contamination of the collimator
5. Increased photomultiplier tube sensitivity.

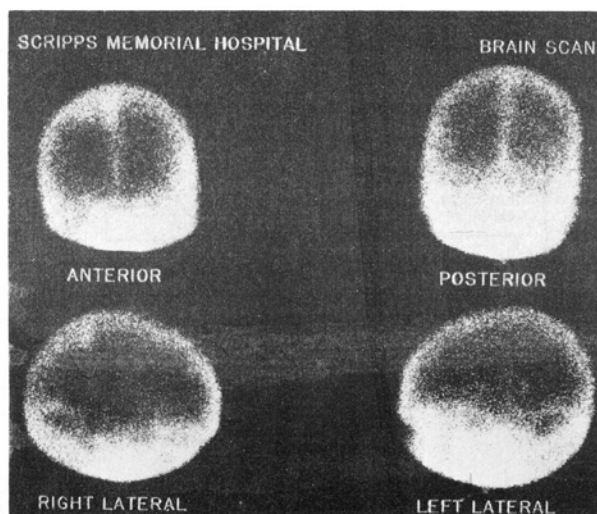


FIG. 1. Note discrepancy in suspected lesion on posterior left and anterior left lateral.

Solution and Discussion

The correct answer is contamination of the collimator. The hint for the above answer comes from the discrepancy of the location of the suspected lesion be-

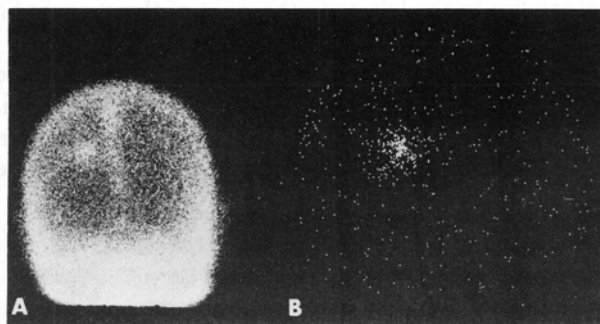


FIG. 2. (A) Anterior view showing lesion in right hemisphere. (B) Image obtained after patient was removed from detector.

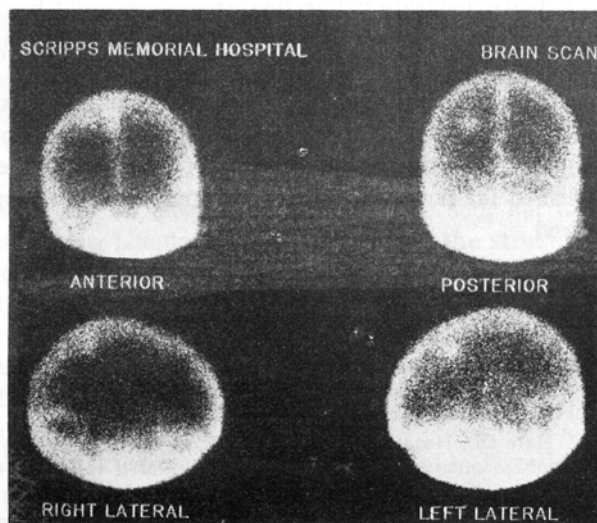


FIG. 3. Repeat brain scan with 4,000 hole collimator.

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tween different scintigraphic views. Since the suspected lesion is seen in the posterior projection but not in the anterior view, it should be located in the posterior half of the left cerebral hemisphere; yet the left lateral scintiphoto shows the suspected lesion in the frontoparietal region of the anterior half of the cerebral hemisphere.

A repeat anterior scintiphoto (Fig. 2A) was obtained

which showed shifting of the suspected lesion to the right hemisphere. Following this, a quick scintiphoto was performed after removing the patient from the camera and at this time the collimator artifact was quite obvious (Fig. 2B). The brain scintiphotos obtained after changing to a 4,000 parallel-hole collimator showed no evidence of any brain lesion (Fig. 3).