

Case of the Quarter

Lorri D. Shuck

Fairview Hospitals, Minneapolis, Minnesota

Case History

A 63-year-old male underwent an exploratory left thoracotomy and postoperative cobalt therapy for a nonresectable left bronchogenic carcinoma in June 1974. Preoperative brain scanning was negative and no cerebral symptoms were present. The patient was rehospitalized in January 1975 for progressively increasing right hemiparesis and seizures. A brain scan performed on January 17, 1975, showed a large focus of markedly increased activity in the right high parietal parasagittal region (Fig. 1). On January 18 a Mallinckrodt Technescan PYP bone scan showed no osseous metastases. Repeat brain scanning on January 19 showed essential "disappearance" of the large right parietal focus of "cerebral metastases" seen 2 days earlier as well as an abnormal pattern of increased activity in the superior sagittal sinus, transverse sinus, and the region of the choroid plexi (Fig. 2).

The decreased activity in the area of the lesion on the repeat brain scan as well as the increased activity in the superior sagittal sinus, transverse sinus, and the region of the choroid plexi are most likely due to:

1. Cerebrovascular accident
2. Lack of "blocking" with potassium perchlorate

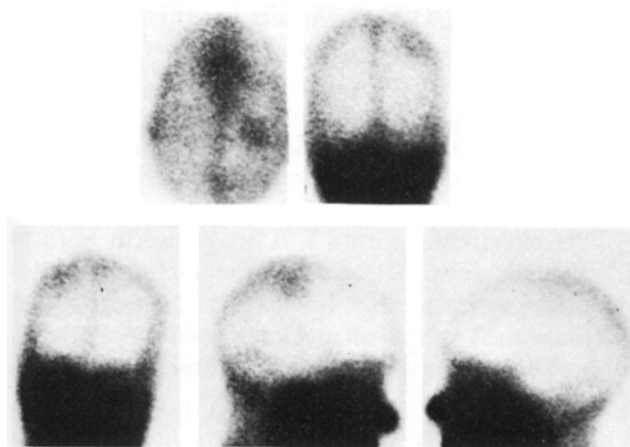


FIG. 1.

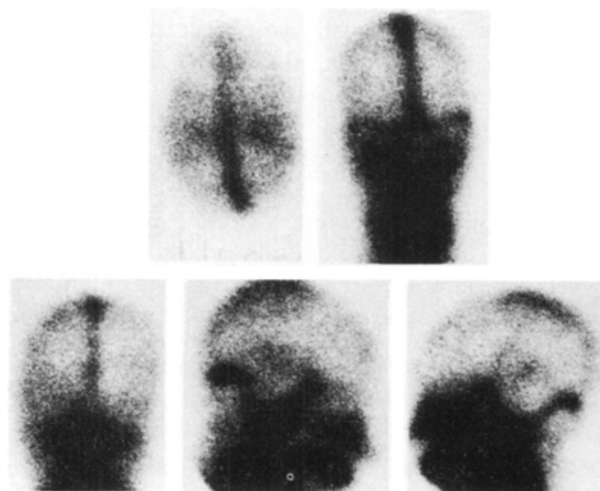


FIG. 2.

3. Cerebral trauma with intracerebral hemorrhage
4. In vivo tagging of the red cells
5. None of the above

Solution and Discussion

The abnormal pattern demonstrated on the brain scan following bone imaging has been observed consistently when this imaging sequence has been followed. In vitro testing indicated a marked increase of activity in the erythrocytes during pertechnetate imaging which followed bone imaging. Analysis suggests the Technescan tin content labels the erythrocytes during bone imaging and pertechnetate may undergo intracellular reduction and labeling of the red cells during pertechnetate brain imaging subsequent to bone imaging. Therefore, the correct answer is 4: in vivo tagging of the red cells.

For reprints contact: Lorri D. Shuck, Dept. of Nuclear Medicine, Fairview Hospitals, 6401 France Ave. S., Minneapolis, Minn. 55435.