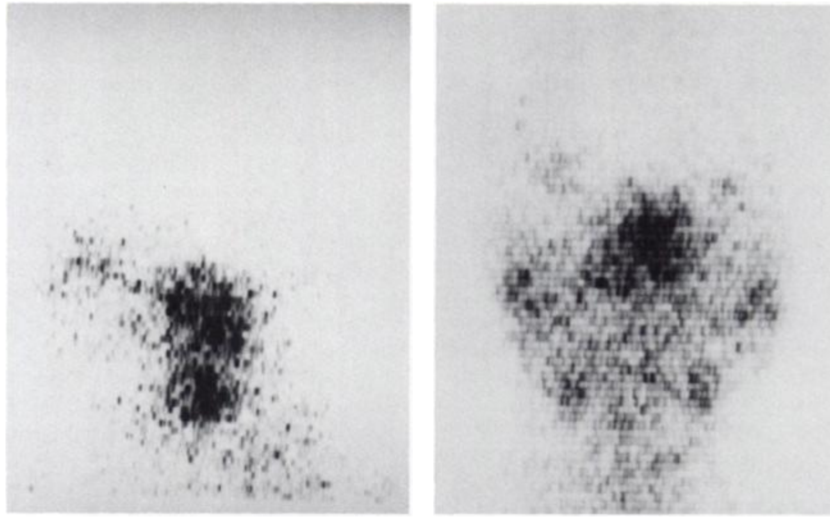

FIG. 1. Anterior (top) and right lateral (bottom) gallium scans of head showing increased activity within salivary glands.

apy and also may be found in patients who have received doses less than 4,000 rads made this case informative.

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Reply

We have read with interest the comments concerning our paper "Salivary gland uptake of ^{67}Ga-citrate following radiation therapy." Although our original series did not include any patients who received less than 4,000 rads, we have subsequently observed salivary gland uptake in patients receiving lower radiation doses to the neck due to interruption of planned treatment and are happy to see the case documented in the preceding letter.

The authors of the letter, however, did misinterpret the section of the original article dealing with the five postradiation scans done during the chronic clinical period (2–5 years). All five scans were positive for salivary gland uptake and, as we originally observed, "The activity in the parotid gland was relatively higher in the scans performed within one year after irradiation . . . No such relative decrease in activity (with time) was noted for the submandibular glands."

We still feel that our report serves to alert physicians to postradiation changes and may thereby avoid false-positive interpretations.

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Scintiangiographic Visualization of an Occipitoparietal, Extradural Hematoma

In November 1976, the *Journal* reported two cases in which cerebral angioscintigrams contributed significantly to the diagnosis of extradural hematoma (*1–3*). These reports and Dr. Ronai's editorial (*4*) have led us to submit the following case report as additional data supporting the utility of radionuclide dynamic images in detecting an extradural hematoma.

A 36-year-old man fell on a wet floor, striking the occipital region of his head on concrete. Because of persistent nausea and vomiting, occipital headaches, and decreased hearing in the left ear, he was referred to the medical center 4 days after the accident.

Blood was found behind the left tympanic membrane, but the neurologic examination was normal. The pulse rate was 46 and regular. X-rays of the skull showed a left basilar skull fracture. An echoencephalogram showed no midline shift. An electroencephalogram was diffusely irregular and slow, with no lateralization or localization.

On the day after admission, a cerebral angioscintigram and head scan were performed with a scintillation camera. The studies were obtained after intravenous injection of 20 mCi of pertechnetate, preceded by an oral dose of 200 mg of potassium perchlorate to block the choroid plexus. The angioscintigrams were taken in the posterior projection because of the history of occipital trauma and subsequent headaches in that area. The perfusion study was recorded on a computerized data-acquisition and processing system. Photographs of the dynamic images presented on the display were made at 2-sec intervals.

Scintiangiography (Fig. 1) showed decreased activity in the left occipitoparietal region throughout the study. Static brain images were performed at 2 hr, but they showed no definite abnormality. Because of the left occipitoparietal abnormality on the cerebral angioscintigram, an extracerebral hematoma was suspected posteriorly on the left. Similar scintiangiographic findings could have resulted from an occlusion of the posterior cerebral artery or from the presence of a hypovascular intracerebral mass, such as an intracerebral hemorrhage or hypovascular neoplasm.

Cranial computed tomography (Fig. 2) showed a lens-

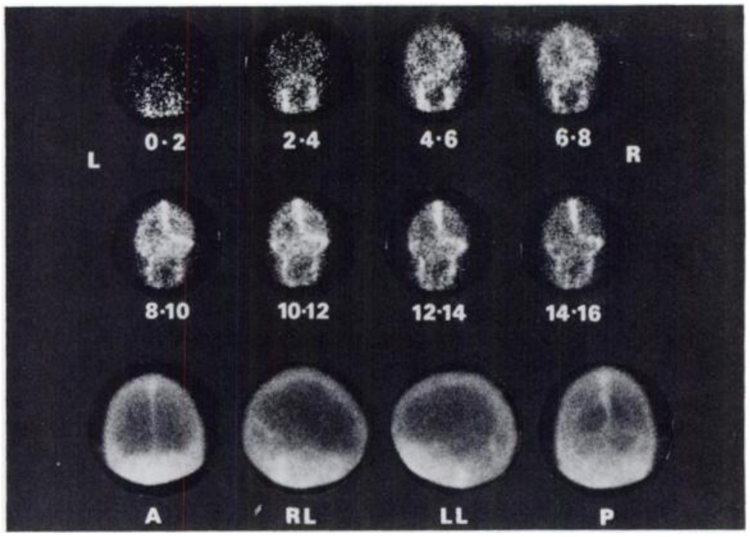

FIG. 1. Upper two rows show posterior dynamic perfusion studies. Left parieto-occipital region shows region of decreased perfusion throughout arterial, capillary, and venous phases. Numbers denote time ranges in seconds. Bottom row shows static brain images in anterior (A), right lateral (RL), left lateral (LL), and posterior (P) projections. These 2-hr postinjection scintigrams were interpreted as normal.

FIG. 2. Cranial computed tomography depicting left occipitoparietal extradural hematoma.

shaped area of increased density consistent with acutely extravasated blood in the left occipitoparietal region. The appearance was typical of an extradural hematoma. Retrograde right brachial, direct left carotid, and direct left brachial arteriograms were normal. A craniotomy performed the following day revealed a 40-cc left occipitoparietal subacute extradural hematoma. A review of the literature failed to uncover any previous report of extradural hemorrhage that produced a focal defect on the nuclear angiogram (*4–12*).

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Anger Scintillation Camera as Whole-Body Counter for Quantitation and Visualization of Radionuclide Retention

We have noted with interest reports by Hofeldt and Verdon (*1,2*) published in this journal. Both reports dealt with the use of the Anger scintillation camera with an uncollimated crystal and "Chair" geometry as a whole-body counter. Currently these authors are evaluating the usefulness of this method to determine the extent of residual postoperative thyroid tissue in patients undergoing surgery for cancer of the thyroid.

With regard to these studies we would like to mention that as early as 1968 we reported our experience (*3*) with the Anger camera as a whole-body counter in followup studies of thyroid cancer patients. This work was also published later in detail (*4*). Our camera* used pinhole collimation. Simultaneous quantitation and visualization of the retained