nomenon of “transient nonvisualisation” of the gallbladder, as defined by Edlund et al. We agree. Moreover, it would have been impossible for us to demonstrate this phenomenon, even if we had wanted to do so, since most patients with nonvisualizing gallbladders (4 of 5) underwent immediate cholecystectomy and thus could not be re-examined for normal gallbladder filling at a later date. It is possible that the two patients in our series whose gallbladders were not visualized until 90 min after injection might have had visualization within 1 hr at a second examination after their acute pancreatitis had subsided, but we did not repeat the studies. Thus we cannot (and did not) rigorously challenge the data of Edlund et al., since our study was quite different from theirs. Rather, we wished to dispute the validity of their conclusion that “scintigraphy may be even less reliable in acute pancreatitis than is oral cholecystography” (1).

Our contention is that cholecintigraphy is reliable in the detection of acute cholecystitis, even in the presence of acute pancreatitis, provided that delayed views are taken when the gallbladder is not visualized within 1 hr, as described by Weissmann et al. (7). (In fact, we suggested in our paper that Edlund et al. might have observed gallbladder filling in one or more of their five patients with nonvisualization had they not limited their examination time to 1 hr.) If they feel we are bold to draw such a conclusion from a series of 21 patients and other data in the literature, they should recall that there were only seven patients in their own series.

We did not include images in our paper since they would have added nothing to the report. Our methods of performing and interpreting the cholecintigrams are widely used, and they were well described and referenced in our paper. Van der Linden et al. call into question our use of subjective interpretations of images by an experienced observer to determine whether tests were positive or negative. That is the usual way in which cholecintigrams (and most other diagnostic images) are interpreted by practitioners the world over. Thus we fail to understand their objection. Furthermore, we fail to understand what relevance oral cholecystography would have had to our conclusions.

We understand the pitfalls of retrospective clinical studies, and we wish Drs. van der Linden et al. well in their “prospective comparative study” of gallbladder function. We hope they will examine their patients for longer than 1 hr in cases in which the gallbladder is not visualized within that time. We also hope they will take notice of the rapidly accumulating evidence that patients who do not eat for a prolonged period (e.g., those on total parenteral nutrition) may exhibit nonvisualisation of the gallbladder on that basis alone and that factor will be controlled in the interpretation of their data (10,11). In any event, pending the outcome of their study or reports of others that might be forthcoming, we must continue to believe, “on the basis of data available to us, that cholecintigraphy is as useful for detecting acute cholecystitis in patients with acute pancreatitis as it is in patients without the latter disease” (2).

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Re: Thyroid Activity on Technetium-99m Macroaggregated Albumin Lung Scans

Perfusion lung scanning using technetium-99m macroaggregated albumin is one of the most common nuclear medicine studies performed. Extrapulmonary activity is rare in these studies unless associated with right-to-left intracardiac or intrapulmonary shunts, or with poor quality control. When seen in the thyroid, extrapulmonary activity suggests thyroid disease as a possible cause, and could lead to an unsuspected diagnosis. We report two cases of thyroid activity seen on perfusion lung scans in patients with Graves’ disease and Hashimoto’s thyroiditis.

Case 1: A 30-yr-old female presented with left lower pleuritic chest pain. The physical examination was unremarkable except for a friction rub heard in the region of the left lower lobe. A chest radiograph was normal. Ventilation/perfusion lung scans were performed because of the possibility of pulmonary embolism. The result was normal, excluding pulmonary embolism, but during the perfusion image, performed 10 min after intravenous injection of 4 mCi of Tc-99m macroaggregated albumin, notable thyroid activity was observed (Fig. 1, top). Uptake in salivary glands, stomach, brain, and kidney was sought, but not found.

Because of the appreciable uptake of activity in the thyroid, the patient was evaluated for thyroid disease. Serum thyroxine was 2.8 μg/dl; thyroid stimulating hormone (TSH) was greater than 40 μU/ml. Thyroid uptake and scan with 200 μCi of iodine-123 revealed elevated uptake: 28% at 4 hr, 41% at 6 hr, and 55% at 24 hr. The thyroid images showed no evidence of anatomic abnormality. Antithyroid antimicrosomal antibodies were positive, with a titre of 1:640. The diagnosis of Hashimoto’s thyroiditis was made, and the patient was appropriately treated.

Case 2: A 72-yr-old woman had weight loss, palpitations, and dyspnea for approximately 3 wk. She had a history of heart disease, for which she was on digoxin and propanolol. Physical examination revealed a pulse of 110/min, a blood pressure of 140/70 mm Hg, and normal temperature and respiratory rate. The examination
shunt, either intracardiac or intrapulmonary, the particles gain access to the systemic circulation and may be seen in brain and kidneys (J). Our patients had no right-to-left shunt, nor activity in brain or kidneys.

The other situation in which activity can be seen in organs other than lung is when there are high levels of free pertechnetate due to poor quality control. In this situation one would find activity in salivary glands and gastrointestinal tract, but this was not seen in our patients. Furthermore, other perfusion lung images performed on different patients during the same period showed no thyroid activity, and the radiopharmaceutical purity of our radiopharmaceutical was greater than 99%.

The thyroid gland is well known to accumulate free pertechnetate in both normal and diseased states (4,5). Despite the small amount of free Tc-99m found in our compound, calculated to be less than 0.05 mCi (<1%), there was intense thyroid uptake due to TSH stimulation secondary to the hypothyroidism resulting from Hashimoto's thyroiditis in the first patient, and to the thyroid-stimulating antibodies of Graves' disease in the second.

These cases show that thyroid activity due to thyroid disease may be seen during perfusion lung images, and should be included in the differential diagnosis of extrapulmonary uptake. Recognition of this could lead to the diagnosis of unsuspected thyroid disease.

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Lung Uptake of Tc-99m-Tin Colloid in a Patient with Lassa Fever

Significant pulmonary uptake of Tc-99m-tagged tin- or sulfur colloid is normally less than 1% of the injected dose, whereas the liver extracts 80%, the spleen 15%, and the bone marrow 5% (1). It is now established, however, that several diseases are associated with increased colloid in the lungs, and that the prevalence of this phenomenon is approximately 1.6% among routine liver scans (2). We wish to report the liver-scan appearances of a patient with Lassa fever (a rare arenovirus infection) in whom significant lung uptake of Tc-99m tin colloid was also observed. The clinical and virological features of this patient’s disease (3), and the ensuing community surveillance problems (4), have been reported in detail elsewhere.

An 18-yr-old Nigerian girl was admitted to our hospital in January 1982, having arrived in London from her native country