as an alternative explanation for "hot emboli," the possible association with hypercoagulability of blood, as seen in critically ill cancer patients and in postoperative patients.

In the present case, the latter two explanations are not applicable; rather, the radioactive microemboli appear to have arisen from tagged deep venous thromboses following low-pressure, low-volume injections soon after a contrast venogram had been performed. It appears, therefore, that radioactive microembolization arising from a tagged thrombus may occur as a complication of radionuclide venography in a patient with an abnormal peripheral venous system.

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Diethyl-IDA: A Promising Hepatobiliary Radiopharmaceutical

The recent editorial on hepatobiliary radiopharmaceuticals has come to our attention (*1*). Indeed, diethyl-IDA, used for several months for hepatobiliary studies in our department, appears to be the best tracer available, especially in disorders of the gallbladder. With diethyl-IDA, neither false negative nor false positive results were ever observed, while this was certainly not the case with 99m-Tc-PyG or 99m-Tc-DHTA.

We recently reviewed a series of 30 patients investigated with diethyl-IDA, comprising 20 normal subjects and 10 patients suffering from various gallbladder disorders (8 cholecystitis and 2 cholelithiasis). Eight of 20 normals were not fasting at the moment of the investigation. In 18 cases out of the 20 normal subjects, the gallbladder was visualized from 9 to 34 min after injection of the tracer. In two other normals, the gallbladder was not seen, but none of these was fasting. Failure to visualize the gallbladder was systematically observed in all the pathologic cases, even when late views were obtained.

Thus, provided that the investigation was performed in the fasting state, a normal gallbladder was always visualized; but any acute or subacute disorder of the gallbladder was characterized by the absence of visualization of the gallbladder.

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Pericardial Accumulation of Tc-99m Methylene Diphosphonate in a Case of Pericarditis

Technetium-99m phosphate tracers are currently being employed for the detection of acute myocardial infarcts (*1–3*). While imaging for myocardial infarct, we observed an unusual case of accumulation of Tc-99m methylene diphosphonate (MDP) in the pericardium of a patient with pericarditis and a small pericardial effusion following acute myocardial infarction.

A 32-year-old white male was admitted to the hospital with acute onset of crushing retrosternal chest pain accompanied by nausea and diaphoresis. An electrocardiogram revealed typical changes of an acute infero-lateral wall infarction. This was further confirmed by the characteristic rise in cardiac enzymes, with a peak CPK of 350 (normal, less than 12), peak SGOT of 561 (normal, less than 40), and a peak LDH of 1230 (normal, less than 250). Serial electrocardiograms revealed typical evolution of an infero-lateral infarction with development of Q waves in I, II, III, AVL, AVF, V5, and V6.

Twenty-four hours after admission the patient complained of precordial pain suggestive of pericarditis—worse on inspiration and on lying on the left side, and relieved slightly by leaning forward. A triphasic friction rub was audible at this time. Chest x-ray showed mild venous congestion and interstitial edema. Heart size was normal. On the third day of infarction, myocardial scintigraphy was performed using 15 mCi Tc-99m MDP, accumulating 500,000 counts per image. The images demonstrated uptake compatible with an infero-lateral myocardial infarction, but there was also unusual accumulation of the tracer in the pericardial silhouette (Fig. 1). An echocardiogram done immediately following the scan revealed a small (5-mm) pericardial effusion. Coronary arteriography revealed single-vessel disease involving the left circumflex artery at the origin of the first marginal branch. An 80% stenosis was estimated, with good distal runoff. Left ventriculography revealed marked hypokinesis of the anterior, inferior and apical surfaces. Hemodynamic values were normal. BUN, creatinine, serum calcium and phosphorus were normal. Repeat chest x-ray did not show any calcification within the pericardial silhouette.

The mechanism of the phenomenon of soft-tissue uptake is not well understood. Both benign and malignant soft-tissue lesions may concentrate phosphate tracers (*4*). Recently, intense myocardial uptake of Tc-99m diphosphonate has been reported in a uremic patient with secondary hyperparathyroidism and pericarditis (*5*). Concentration of these tracers in inflammatory conditions (*6,7*) and pleural effusions (*8*) have also been described. Accumulation of Tc-99m MDP in our case is a very rare condition. Since the pericardial effusion in our patient was quite small, it is likely that the increased uptake was due to the inflammatory component of the pericarditis rather than to the effusion, although direct proof of this is lacking.

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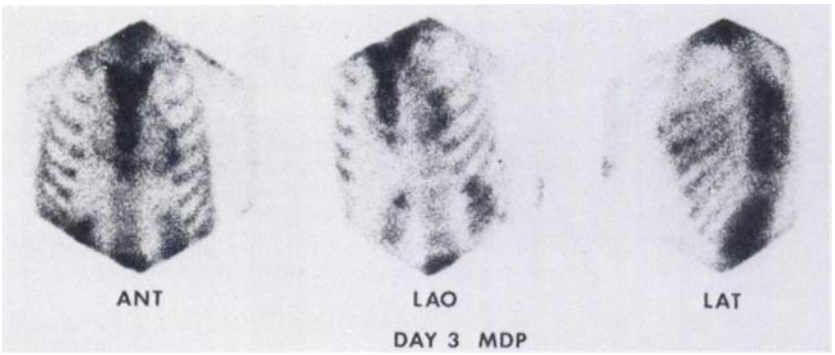

FIG. 1. Technetium-99m MDP scan showing uptake compatible with inferolateral myocardial infarction and accumulation of tracer in pericardial silhouette.

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False-Positive Fluorescence Thyroid Scan for Ectopic Thyroid Tissue

The first imaging system for clinical studies devised for thyroid iodine mapping by fluorescent techniques was reported by Hoffer et al. in 1968 (*1*). In a comparative study on patients having both fluorescent and conventional radionuclide scans, these investigators found that the fluorescent thyroid scan was technically comparable to the conventional thyroid scan and that the iodine content of the thyroid gland could be assessed by this method (*2–4*).

Recently, Patton et al. (*5*) have proposed that fluorescent thyroid scanning might be a useful predictor of malignancy in solitary nodules cold to conventional radionuclide scanning, and thus they have renewed interest in this method of thyroid imaging.

We wish to report a case in which a structure not contiguous with the thyroid—a left supraclavicular lymph node —contained iodine from a previous lymphangiogram and gave rise to a false-positive fluorescence thyroid scan as long as 2 yr later. The possibility of false-positive thyroid scans with respect to the location of ectopic thyroid tissue does not need to be considered in the conventional scan using pertechnetate or iodide, because functional thyroid tissue is required. We wish, therefore, to bring this observation to the attention of those using fluorescence scanning for thyroid diagnosis.

A 21-year-old woman had a history of syncopal episodes. On examination, there was tachycardia but no thyroid enlargement, bruit, or tenderness. Total thyroxine was 16.7 μg/dl (normal 4–11), and triiodothyronine uptake was 40% (normal 25–35%). An electrocardiogram showed paroxysmal atrial tachycardia. A diagnosis of hyperthyroidism was made, and the patient was given propranolol (Inderal), 30 mg four times a day.

Total thyroxine, assayed several times during the following weeks, ranged from 12.4 to 15.9 μg/dl, and triiodothyronine uptake, from 52.3 to 52.9%. Twenty-four hour I-131 uptake was 1%, and this increased to 6% after 3 days of administration of thyroid-stimulating hormone. A technetium thyroid scan after thyroid-stimulating hormone revealed a normal-sized thyroid gland.

Two months later, the patient was evaluated at this institution, and she related no significant history for that interval. Examination of the thyroid was normal and pulse rate was normal. Total serum thyroxine was 7.2 μg/dl, and triiodothyronine was 135 ng/dl (normal 120–312). Iodine-131 uptake was 5% at both 6 and 24 hours. A thyroid scan with 200 μCi of I-131 showed low and somewhat irregular uptake in a normal-sized thyroid gland; there was no evidence

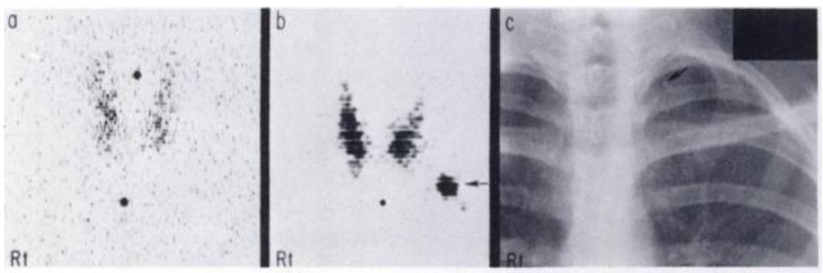

FIG. 1. (a) Thyroid scan performed with 200 μCi of I-131. (b) Fluorescent thyroid scan performed 1 day before that in (a), showing an area of high iodine content in left supraclavicular region (arrow). (c) Anterior chest roentgenogram showing iodide in supraclavicular lymph node (arrow) from previous lymphangiogram.