medullary thyroid carcinomas, small-cell carcinomas and meningiomas, as well as in certain lymphomas and a subgroup of breast tumors (*1*). Moreover, somatostatin receptors have been identified in nontumoral processes, such as sarcoidosis and tuberculosis, inflammatory bowel disease, Graves' disease and rheumatoid arthritis (*1*).

Visualization of a benign cavernous hemangioma by ^{111}In-octreotide imaging would indicate a high density of somatostatin receptors within the hemangioma. The exact location of the somatostatin receptors cannot be determined from this study. Activated lymphocytes also possess somatostatin receptors and it is conceivable that activated lymphocytes pooled in the cavernous spaces could account for the positive scan. Since somatostatin has an antiproliferative effect, including inhibition of angiogenesis, it might well be that binding of endogenous somatostatin to somatostatin receptors in the hemangioma's endothelial or stromal cells ultimately leads to its well-known natural course of spontaneous resolution.

Whatever mechanism underlies the localization of ^{111}In-octreotide in this hematoma, this case illustrates that increased uptake in a lesion cannot be equated with a neuroendocrine tumor, as suggested by earlier reports (*2,3*). Any positive finding has to be analyzed in context with the clinical findings and, if applicable, correlated with the findings of other imaging modalities. Ultimately, the diagnosis can only be made by the histologic examination of the lesion in question.

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Technetium-99m-Albumin Colloid Lymphoscintigraphy in Postoperative Lymphocele

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An important use of lymphoscintigraphy is to evaluate extremity edema. Lymphoscintigraphy has many advantages over contrast lymphangiography in these patients. We report an unusual case of lymphocele of the left upper chest wall which was discovered incidentally during lymphoscintigraphic evaluation of left upper arm edema. This lymphocele was due to prior surgery, but in some patients the etiology is previous trauma or idiopathology.

Key Words: lymphoscintigraphy; lymphocele; extremity edema

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Lymphoscintigraphy has been used to evaluate lymphatic involvement with malignancies (*1*), to determine lymphatic drainage pathways in patients with melanoma (*2*) and to evaluate extremity edema (*3–8*). The lymphatic causes of soft-tissue swelling of a limb include congenital or acquired obstruction (such as from trauma, parasitic and nonparasitic infection), increased lymph production and stasis (*9*). Recent radiopharmaceuticals utilized for lymphoscintigraphy include colloid, dextran, hetastarch, human albumin or haemacel (*2,9–13*). Although our patient's examination was ordered to evaluate arm edema, the findings resulted in the diagnosis of the primary problem and subsequent definitive treatment.

CASE REPORT

A 67-yr-old woman with squamous-cell carcinoma of the esophagus underwent subclavian subcutaneous vascular access port placement on October 6, 1994. She returned to the surgeon for follow-up on October 18, 1994, at which time she complained of left arm swelling and swelling in the region of the port. The swelling adjacent to the port measured approximately 7 cm in

FIGURE 1. Swelling of the left upper chest wall at the site of the subcutaneous vascular access port.

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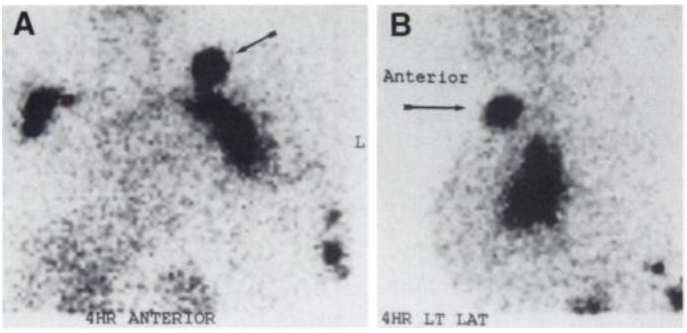

FIGURE 2. Anterior (A) and lateral (B) 6-hr images demonstrate activity in left upper anterior chest wall.

diameter (Fig. 1). Approximately 15 ml of translucent green fluid was aspirated. On October 21, 1994, another 12 ml of straw colored fluid was aspirated. On October 25, 1994, another 20 ml of fluid was withdrawn. On October 26, 1994, bilateral arm lymphoscintigraphy was performed to evaluate the patient for persistent left arm swelling. Approximately 1100 μCi ^{99m}Tc-albumin colloid were divided into three equal doses for each arm. Injections were made intradermally into the web of the thumb and subcutaneously into the interdigital web between the index and long fingers, and also the long and ring fingers. Dynamic scintigraphy was performed, and the above described fluid collection began demonstrating activity at 60 min and increased through time, consistent with a lymphocele. Imaging was performed up to 6 hr (Fig. 2).

Another 28 ml of straw colored fluid was aspirated on October 31, 1994. The patient subsequently underwent removal of the port with replacement in the opposite subclavian vein. The lymphocele and left arm edema resolved, although she did encounter a mild infection of the site after removal of the port.

DISCUSSION

Lymphoscintigraphy can be of benefit in the evaluation of limb edema. Disadvantages of contrast lymphangiography in investigating the cause of limb swelling include its invasive nature, the technical difficulty of the procedure, including a skin incision and the possibility of complications from infection, which can occur in as many as 15% of these patients. Other problems with contrast lymphangiography are its nonquantitative nature, the possibilities of pulmonary oil emboli or contrast hypersensitivity, and that it is not physiologic. The injection pressure might also cause collateral channels to be opened (*9,14*). Lymphoscintigraphy is particularly useful if an associated fluid collection is present. Lymphoceles have been diagnosed by lymphoscintigraphy in the lower extremity (*7,15*), the pelvis (*16–19*), the chest (*20*) and the abdomen (*21*). These have been post-surgical, post-traumatic and idiopathic. This case demonstrates the utility of lymphoscintigraphy in evaluating an unusual postoperative complication. Furthermore, lymphoscintigraphy might be helpful in distinguishing not only between a lymphocele and other fluid collections, but also to possibly help determine if an underlying sarcoma or other malignancy affecting the lymphatics was present.

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