Subcutaneous Cavernous Hemangioma Visualized on an Indium-111-Octreotide Scan

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Indium-111-octreotide, a somatostatin analog, is the first commercially available receptor-based agent. It shares the binding site of naturally occurring somatostatin and is suitable for imaging somatostatin receptor-bearing tumors. An ^{111}In-octreotide scan performed on a 6-wk old girl showed increased uptake in a subcutaneous cavernous hemangioma, which should be added to the list of lesions that can be visualized on an octreotide scan.

Key Words: somatostatin receptors; octreotide scan; hemangioma
J Nucl Med 1996; 37:1516–1517

CASE REPORT

A 6-wk-old infant girl with Beckwith-Wiedemann syndrome was hospitalized because of failure to thrive, upper airway obstruction due to macroglossia, anemia (Hgb = 6.4 g/dl), jaundice (total bilirubin = 9 mg/dl; unconjugated bilirubin = 7.8 mg/dl), abnormal liver enzymes (SGOT = 61 U/liter; GGTP = 309 IU) and episodic hypoglycemia, which became more and more difficult to control with diazoxide.

On physical examination, the patient had the classic features of Beckwith-Wiedemann syndrome, including large tongue, liver and kidneys as well as ear lobe creases. She also had two cutaneous hemangiomas, one on the left scalp and one on the left upper leg, each measuring 5 mm in diameter and 2 mm in elevation. A third soft-tissue mass was palpated under the skin of the left chest wall just lateral to the nipple, measuring 2 × 1 cm. The overlying skin was normal.

Because of failure to thrive, deteriorating liver function, anemia and episodic hypoglycemia, a pancreatic tumor was considered a possibility, in particular in view of the known high rate of malignancy of 7.5%–12% found in Beckwith-Wiedemann syndrome.

The patient underwent ^{111}In-octreotide imaging to search for an insulin-secreting tumor. After intravenous injection of 0.8 mCi ^{111}In-octreotide, anterior, posterior and lateral images of the torso were obtained at 6 and 24 hr. Both sets of images showed intense uptake in the left anterolateral chest wall (Fig. 1), corresponding to the palpable soft-tissue mass noted on the physical examination. A subsequent CT showed a soft-tissue lesion compatible with a hemangioma in this area (Fig. 2). The cutaneous hemangiomas did not show any increased uptake and no areas of increased uptake were found within the thoracic or abdominal cavity.

The soft-tissue mass showing the increased uptake was removed surgically and found to be a cavernous hemangioma. After removal of the hemangioma, the patient's hyperinsulinism remained unchanged. She subsequently underwent a 95% pancreatectomy. At surgery, the pancreas was grossly enlarged. No tumor mass was noted at laparotomy and no tumor was detected in the resected specimen.

Received Mar. 18, 1996; revision accepted Apr. 17, 1996.
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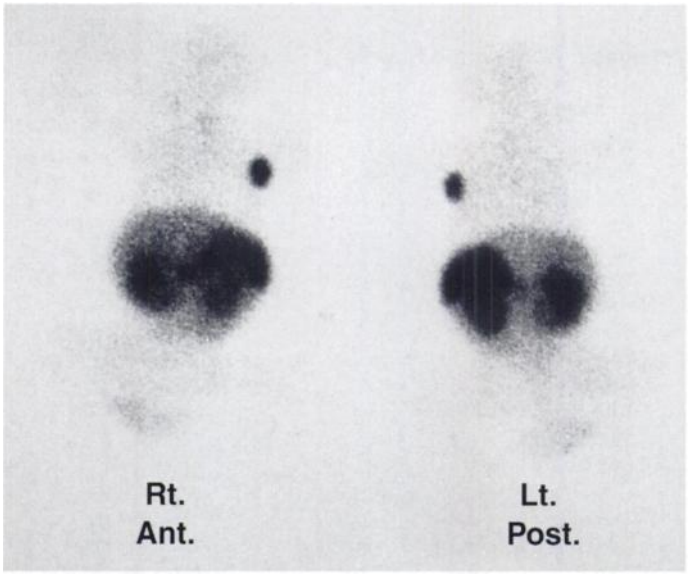

FIGURE 1. The 24-hr ^{111}In-octreotide scan shows an intense focus of increased uptake in the left anterolateral chest wall.

The patient began to improve after discharge. Her remaining episodic hypoglycemia was mild, easily controlled with bolus feedings every 4 hr with a standard formula, and no longer required diazoxide. Her liver dysfunction and anemia have resolved after discontinuation of diazoxide therapy.

DISCUSSION

Somatostatin receptors are expressed in a high proportion of neuroendocrine tumors, including pituitary adenomas, islet cell tumors, carcinoids, pheochromocytomas, paragangliomas, neuroblastomas, and Merkel cell tumors, but are also found in

FIGURE 2. Representative section of chest CT scan shows a soft-tissue mass in the left anterolateral chest wall, which corresponds to the palpable mass and site of intense uptake seen on the ^{111}In-octreotide scan.

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

J Nucl Med 1996; 37:1517–1518

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.

Received Jul. 5, 1995; revision accepted Mar. 20, 1996.

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