rate, mild diffuse lung accumulation, and some uptake at the site of the dialysis catheter (Fig. 1). The peritoneal cavity showed no excess radiogallium uptake. Recovery of Ga-67 from the dialysate was 0.57% of the dose in the first 12 hr after administration and 0.66% during the second 12-hr period. Plasma activity was 1.4% of the dose per liter at 16 hr and 0.9% at 40 hr. Gallium-67 activity in the dialysate is plotted against time in Fig. 2. Plasma clearance of Ga-67 by peritoneal dialysis was 0.7 ml/min, so a negligible quantity of radiogallium is cleared by peritoneal dialysis. A likely explanation is that radiogallium is protein-bound; as shown by Marlette et al. (*6*) in a group of hemodialysis patients, only small quantities of radiogallium remain free to be dialyzed from the plasma. In their study, 0.5-8% of the injected dose of radiogallium was removed by hemodialysis. They emphasized, however, that the most reliable quantitation in their study was the one performed with ultrafiltration, in which 0.5% of the injected dose was dialyzed. This agrees with our results of 0.57 and 0.66% removal in two successive 12-hr periods of peritoneal dialysis.

These data demonstrate the feasibility of Ga-67 scanning in patients on peritoneal dialysis.

While this investigation was going on the patient became afebrile. No definite cause for her fever has been found.

MOZAFAR K. KARIMEDDINI
University of Connecticut Health Center
Farmington, Connecticut

ACKNOWLEDGMENT

This work was supported in part by USPHS Grant No. CA 17802.

REFERENCES

1. SILVA J, JR, HARVEY WC: Detection of infections with gallium-67 and scintigraphic imaging. *J Infect Dis* 130:125-131, 1974
2. THADEPALLI H, RAMBHATLA K, MISHKIN F, et al: Correlation of microbiologic findings and ^{67}gallium scans in patients with pulmonary infections. *Chest* 72:442-448, 1977
3. ROXE DM, ARGY WP, FROST B, et al: Complications of peritoneal dialysis. *South Med J* 69:584-587, 1976
4. KOLMOS HJ, ANDERSEN KEH: Peritonitis with *Pseudomonas aeruginosa* in hospital patients treated with peritoneal dialysis. *Scan J Infect Dis* 11:207-210, 1979
5. KUMAR B, COLEMAN RE, ALDERSON PO: Gallium citrate (Ga-67) imaging in patients with suspected inflammatory processes. *Arch Surg* 110:1237-1242, 1975
6. MARLETTE JM, WAI MA K, SHAFER RB: Effect of hemodialysis on gallium-67 citrate scanning. *Clin Nucl Med* 5: 401-403, 1980

In-111 DTPA Detection of Cerebrospinal Fluid Leakage from the Thoracic Spine

Scinticisternography is of value for the location of a leak of cerebrospinal fluid in rhinorrhea or otorrhea (*1*,*2*). In addition, there are reports of contrast myelography demonstrating posttraumatic dural diverticula, cysts, and fistulae from the spinal canal (*3*,*4*). In our literature search we were unable to find a reported diagnosis of a cerebrospinal fluid leak involving the spinal canal by the intrathecal administration of a radiopharmaceutical.

Our case was a 24-year-old woman who was involved in an automobile accident a few weeks previously. At that time she presented with blunt injuries to the head and abdomen and a flail chest. She was referred for a cisternogram after a neurosurgical consultation for symptoms of orthostatic headaches, dizziness, and nausea, which were relieved by recumbency.

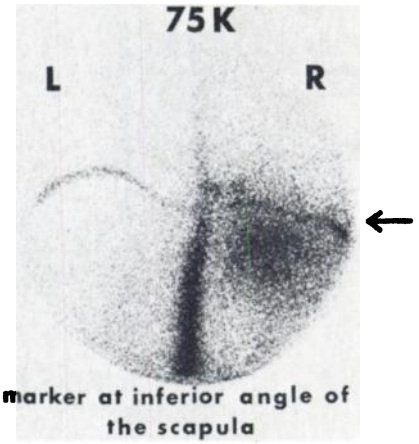

FIG. 1. Escape of radiopharmaceutical is noted from lower thoracic spine. No significant activity was seen in intracranial cisterns.

In the routine views the In-111 DTPA study showed no significant activity reaching the intracranial cisterns. A scan over the spinal canal demonstrated tracer loss from the lower thoracic spine (Fig. 1).

Following the cisternogram, tomograms of the thoracic spine were performed and revealed a previously unsuspected fracture involving the posterior elements, with subluxation ("chance fracture," Fig. 2).

A contrast myelogram also showed escape of the contrast material into the right posterior hemithorax (Fig. 3).

This case demonstrates the location of a transdural escape of radiopharmaceutical in a patient with a history compatible with a cerebrospinal fluid leak through tears in the arachnoid space and dura. It also shows that the use of scinticisternography need not be limited only to cases of cerebrospinal fluid rhinorrhea or otorrhea.

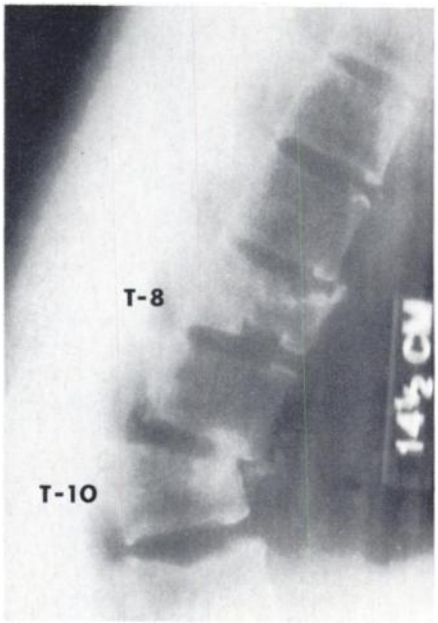

FIG. 2. There is compression of T-8, T-10, and T-11, and anterior subluxation of T-9 on T-10.

FIG. 3. There is escape of contrast media at level of T-9. There is also some extrinsic compression of column of contrast at the same level.

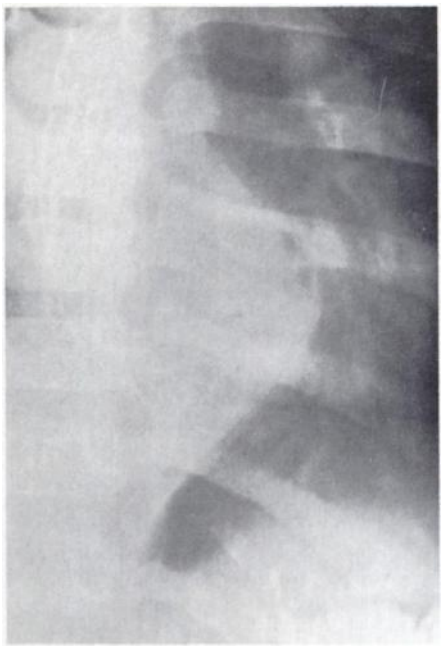

FIG. 1. Anteroposterior spot film of lower mediastinum from esophagram demonstrating left paraspinal mass corresponding to location of abnormal activity on bone image.

B. DEAN
A. CHACKO
Tripler Army Medical Center
Honolulu, Hawaii

REFERENCES

1. ASHBURN WL, HARBERT JC, BRINER WH, et al: Cerebrospinal fluid rhinorrhea studied with the gamma scintillation camera. *J Nucl Med* 9:523-529, 1968
2. OMMAYA AK, DI CHIRO G, BALDWIN M, et al: Non-traumatic cerebrospinal fluid rhinorrhea. *J Neurol Neurosurg Psychiat* 31:214-225, 1968
3. WILSON C, JUMER M: Traumatic spinal-pleural fistula. *JAMA* 179:812-813, 1962
4. ZILKHA A, REISS J, SHULMAN K, et al: Traumatic subarachnoid-mediastinal fistula, case report. *J Neurosurg* 32: 473-475, 1970

Paraspinal Metastasis of Wilms' Tumor Visualized on Bone Imaging

Extraosseous localization of bone imaging agents has been found to occur in various soft tissue neoplasms (*1-3*), for example, Tc-99m phosphate compounds in neuroblastomas (*4-6*). It has even been suggested that uptake of Tc-99m phosphate compounds by a soft tissue tumor in a pediatric patient is almost pathognomonic of a neural crest tumor (*5*). We present an isolated, thoracic paraspinal metastasis of Wilms' tumor that demonstrated uptake on a Tc-99m methylene diphosphonate (MDP) bone image and thus mimicked the scintigraphic appearance of a thoracic neuroblastoma.

A 2-year-old boy had a left nephrectomy for Wilms' tumor with no evidence of local tumor spread. Chest radiographs and radionuclide liver-spleen and bone images were normal. Following surgery, the child received chemotherapy with vincristine and actinomycin-D. Approximately 2 mo later, a left posterior mediastinal mass (Fig. 1) was discovered on a routine examination. Diagnostic considerations were a paraspinal abscess, neurenteric cyst, neuroblastoma (primary or metastatic), or an unusual, isolated metastasis of Wilms' tumor. A CT scan of the chest and abdomen confirmed that the mass was paraspinal and entirely intrathoracic in location, with no calcification, and showed no

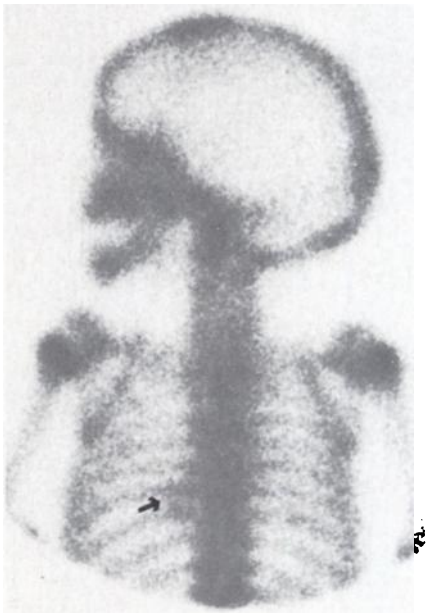

FIG. 2. Posterior bone scintigram demonstrating abnormal soft-tissue activity in left paraspinal region (arrow), with normal uptake by adjacent bony structures.