an immunologic reaction, although the identity of the presumed triggering antigen is not known. A hypersensitivity reaction to therapeutic agents such as penicillin, sulfonamide, and phenytoin has been postulated as a possible mechanism in the development of AIL. Anticonvulsive therapy with phenytoin has been found in association with histologic changes in lymph nodes similar to those in AIL, as well as development of Hodgkin's disease and malignant lymphoma (*3*). The rapid downhill course of most reported cases of angioimmunoblastic lymphadenopathy has been due to development of fulminating infection, renal disease, or cardiovascular disease. The radiographic findings in AIL are similar to those of lymphoma (*5*). However, the rapid development of hilar or mediastinal lymphadenopathy seen in our two cases are very useful clues in the diagnosis of AIL. The lack of anterior mediastinal involvement is another feature that helps to distinguish this condition from Hodgkin's disease (*5*). The importance of differentiating AIL from Hodgkin's disease and other lymphomas has been emphasized (*6*), since therapy with cytotoxic drugs is not only ineffective in AIL but is potentially harmful, increasing the patient's susceptibility to infection. Scintigraphic findings are nonspecific. However, both of our patients had rapid onset of lymphadenopathy and markedly abnormal gallium scans. We feel these scintigraphic findings, and the radiographic findings of the lung in patients who have had rapid onset of adenopathy are strongly suggestive of AIL. Lymphoma or sarcoidosis has much slower clinical manifestation. Moreover, radionuclide imaging is useful in assessing the course of AIL under different therapeutic regimens, and permits early detection of metastatic involvement when the malignant course of this disease ensues.

CHAN H. PARK
GABRIEL CERON
Thomas Jefferson University Hospital
Philadelphia, Pennsylvania

REFERENCES

1. LUKES RJ, TINDLE BH: *Immunoblastic Lymphadenopathy: A New Hyperimmune Entity Resembling Hodgkin's Disease. Workshop on Classification of Non-Hodgkin's Lymphomas.* Chicago, University of Chicago, June 25-29, 1973
2. FRIZZERA G, MORAN EM, RAPPAPORT H: Angio-immunoblastic lymphadenopathy. Diagnosis and clinical course. *Am J Med* 59: 803-818, 1975
3. HYMAN GA, SOMMERS SC: The development of Hodgkin's Disease and lymphoma during anticonvulsant therapy. *Blood* 28: 416-427, 1966
4. NEIMAN RS, DERVAN P, HAUDENSCHILD C, et al: Angioimmunoblastic lymphadenopathy: An ultrastructural and immunoblastic study with review of the literature. *Cancer* 41: 507-518, 1978
5. LIBSHITZ HI, CLOUSER M, ZORNOZ AJ, et al: Radiographic findings of immunoblastic lymphadenopathy and related immunoblastic proliferations. *Am J Roentgenol* 129: 875-878, 1977
6. HUSSEY HH: Immunoblastic lymphadenopathy. *JAMA* 236: 2098, 1976

Unusual Spread of Juxtacortical Osteosarcoma

A 51-year-old housewife complained of a gradual onset of stiffness and discomfort in the right knee. This began 15 mo before presentation and occurred only when she flexed her right knee fully. Over the last 3 mo, she found the knee becoming stiffer and more uncomfortable when walking. She had no other complaints and her general health has always been good.

On examination, she was found to have a firm swelling in the posterior aspect of the thigh just above the knee. There was limitation of flexion of the knee to 90°. No other abnormal findings were noted on admission.

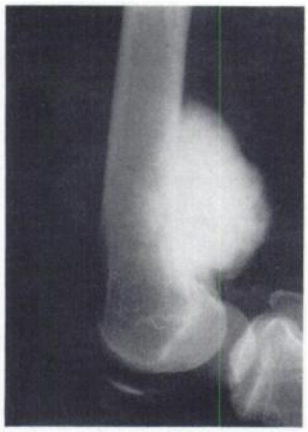

FIG. 1. Typical radiographic appearance of paraosteal sarcoma.

Except for an alkaline phosphatase of 185 IU, all biochemical investigations, were normal. Full blood count and ESR were normal. A radiograph of the femur showed a very typical appearance of a juxtacortical osteosarcoma with a well-defined cauliflower-shaped mass of bone on the posterior aspect of the distal femur (Fig. 1). Biopsy of the tumor showed that the bone was very dense, with no soft component of the tumor. Once again, the appearances were those of a juxtacortical osteosarcoma. In response to a surprisingly positive finding in a staging whole-body bone scan with Tc-99m methylene diphosphonate (Figs. 2 and 3), the left temple was carefully examined. A 2.3-mm nodule was excised from the scalp and sent for microscopy.

Two weeks later, the distal 160 mm of the right femur was excised and replaced with a Stanmore femoral replacement including

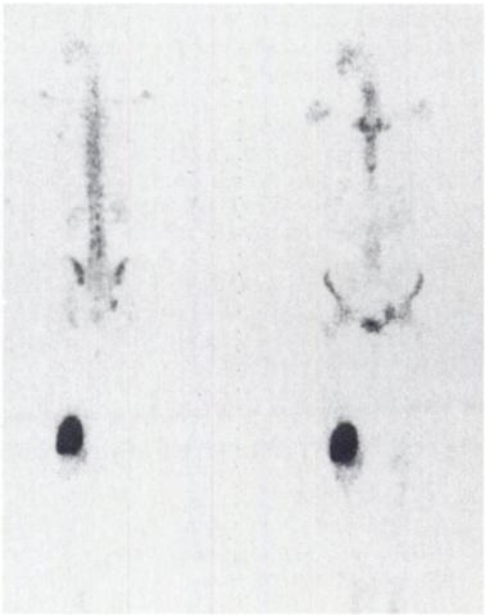

FIG. 2. Whole-body bone scan. Note intense uptake over primary tumor and questionable very small focal area of uptake in the skull.

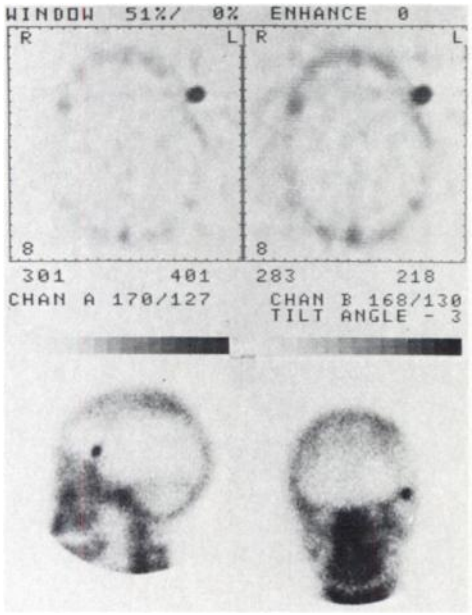

FIG. 3. Top: Emission tomograms of skull prove lesion to be within soft tissue. Bottom: Conventional gamma camera scans of skull.

the knee joint. She made a satisfactory postoperative recovery and was discharged 3 wk later, walking satisfactorily and attending the Physiotherapy Department for knee mobilization.

The original biopsy was reported as showing features of osteosarcoma. This diagnosis was reviewed in the light of the radiological and operative findings, and in the review report it was suggested that the neoplasm could be regarded as falling within the spectrum of juxtacortical osteosarcoma but that recurrence might occur. The scalp nodule was reported as showing regular bone and osteoblasts similar to that in the previous biopsy in the more differentiated areas. Study of the surgical femur specimen showed the features of the tumor to be essentially similar to those reported before. However, there were frankly sarcomatous elements seen at the base of the biopsy and there was evidence of extension, both into the medullary cavity and into the surrounding soft tissue. The impression was that the behavior of this lesion is likely to be worse than that of a typical paraosteal osteosarcoma.

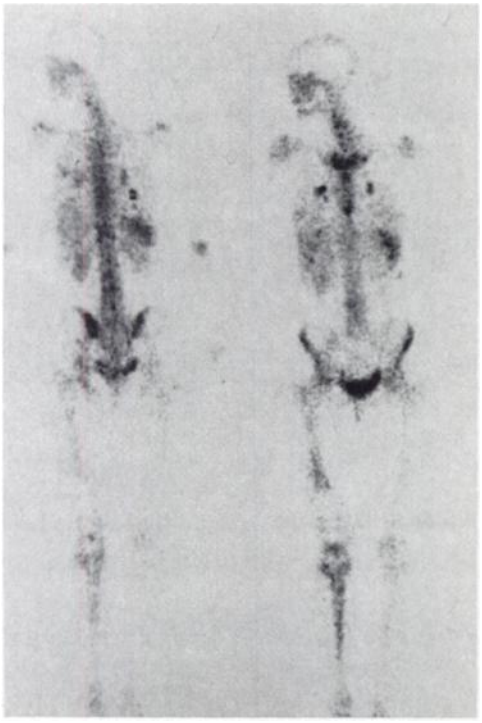

FIG. 4. Soft-tissue lung deposits demonstrated on whole-body bone scan at a time when chest radiograph was negative.

She was seen again in the combined bone-tumor clinic 3 wk later, walking well. A chest radiograph performed at this time showed no abnormality, but a bone scan (Fig. 4) was positive. She was readmitted 2 wk later and tomograms of the lung fields showed metastases in both mid zones. On this occasion, a repeat whole-body scan showed rapid progression in several lung deposits previously detected.

Juxtacortical "paraosteal" sarcomas are rare, constituting less than 5% of all osteosarcomas. These tumors arise from periosteum and tend to grow slowly. The malignancy is usually of low grade—a cure and a survival of up to 9 yr have been reported (*1*). Eventually, however, soft-tissue lung deposits tend to occur.

Usually these tumors occur between the ages of 20 and 40 yrs, but in this particular case, it was diagnosed at age 51. At the time of presentation, the whole-body bone scan revealed metastatic spread to the "skull" and it was the emission tomogram that revealed the deposit to be within soft tissue of the left temple and not in bone. The follow-up whole-body bone scan was again the first investigation to demonstrate soft-tissue lung secondaries, later confirmed by chest radiograph and tomography. The particularly rapid spread of this tumor was proved again on the repeat whole-body bone scan.

The dramatic appearance of a 2.3-mm lesion in the emission tomogram points once again to the importance of the signal-to-noise ratio and contrast resolution, rather than spatial resolution—in this case FWHM-9 mm (*2*)—within nuclear medicine imaging techniques. The improvement in lesion demonstration in depth with an emission tomographic scanner is once again documented.

A rare case of a paraosteal sarcoma is presented. The unusual pattern of spread was diagnosed first by means of whole-body bone and emission tomography techniques.

P. J. ELL
J. H. DIXON
A. Z. ABDULLAH
Middlesex Hospital Medical School
London, England

REFERENCES

1. MURRAY RO, JACOBSON HG. *The Radiology of Skeletal Disorders.* Churchill Livingstone, 1977
2. JARRITT PH, ELL PJ, MYERS MJ, et al: A new transverse-section brain imager for single-gamma emitters. *J Nucl Med* 20: 319-327, 1979

[^{75}Se]Selenomethionine Uptake by the Pancreas

The interesting paper by Atkins and Som (*1*) on the effects of growth hormone and somatostatin on the uptake of [^{75}Se]selenomethionine by the pancreas raises the broader issue of the factors that influence the uptake of radiopharmaceuticals by the pancreas. Several years ago we made a study of the influence of pretreatment with a variety of agents on the uptake of selenomethionine by the rat pancreas. The substances selected were those