Bone Scan Abnormalities and Skeletal Metastases ................. 387
Indium-111-IGg in Bone and Joint Infections ....................... 403
Metabolic Inhibition of $^{99m}\text{Tc}$MIBI Cellular Uptake ....... 464
Xenon-127m Applications in Nuclear Medicine ...................... 489

A Full Table of Contents Begins on Page 3A, Annotations on Pages 7A–8A
Association Between Number and Sites of New Bone Scan Abnormalities and Presence of Skeletal Metastases in Patients with Breast Cancer

The results of this review of 1,441 bone scans performed on 242 breast cancer patients without known skeletal metastases indicate that the number, site, and radiologic appearance of new bone scan abnormalities can be helpful in predicting the likelihood that skeletal metastases are present. ....... Page 387

Comparison of Technetium-99m and Iodine-123 for Imaging Thyroid

Three hundred and sixteen patients with solitary or dominant thyroid nodules were imaged both with [99mTc]pertechnetate and 123I, and the images were independently interpreted by five readers. In 27%-58% of the cases, there was no difference in quality. The slightly better overall quality of 123I scans is probably not of diagnostic significance and does not justify routine use of 123I. Routine re-imaging of 99mTc hot nodules does not appear necessary. ....... Page 393

Editorial: Comparison of Technetium-99m and Iodine-123 Imaging of Thyroid Nodules: Correlation with Pathologic Findings ....... Page 400

Scintigraphic Detection of Bone and Joint Infections with Indium-111-Labeled Nonspecific Polyclonal Human Immunoglobulin G

Results from a study of the safety and diagnostic accuracy of indium-111-labeled immunoglobin G in 32 patients suggest that the sensitivity of the labeled immunoglobulin G appears to be at least as high as that of labeled leukocytes. ....... Page 403

In This Month's Issue of

JNM

Editorial: What is the Best Method for Imaging Focal Infections? .......... Page 413

Immunoscintigraphy of Inflammatory Processes with a Technetium-99m-Labeled Monoclonal Antigranulocyte Antibody (MAb BW 250/183)

The clinical utility of anti-granulocyte immunoscintigraphy was evaluated in 34 patients. The authors conclude that the easy labeling, optimal gamma energy of 99mTc, and the resulting high quality SPECT images offer considerable advantages compared to the in vitro labeling of leukocytes with 111In-oxide. .......... Page 417

Comparison of Methods for Calculating Glomerular Filtration Rate

True glomerular filtration rates were measured in patients by iothalamate clearance, scintigraphic analysis, and whole-plasma clearance. The results suggest that scintigraphic analysis may be useful in documenting the improvement or deterioration of GFR in some patients. .......... Page 424

Effect of Background Correction on Separate Technetium-99m-DTPA Renal Clearance

A double background correction method, using successively the area ratio method and a linear fit method, is shown to be possibly the most precise method of determining renal clearance and is less dependent on the choice of the background area .......... Page 430

Extrahepatic Uptake of Technetium-99m-Phytate: A Prognostic Index in Patients with Cirrhosis

The hepatic function of 94 patients with biopsy-documented cirrhosis was evaluated using 99mTc-phytate scintigraphy. Extrahepatic uptake was measured and the severity of the liver disease was assessed. The authors conclude that hepatic imaging with 99mTc-phytate gives valuable diagnostic and prognostic information .......... Page 436

Urine Excretion of Inhaled Technetium-99m-DTPA: An Alternative Method to Assess Lung Epithelial Transport

Requiring only inhalation of an aerosol device and a well counter to measure urine radioactivity, this method permits a quantitative assessment of tracer transfer rates at the bedside .......... Page 441

Left Ventricular Volume Calculation Using a Count-Based Ratio Method Applied to Multigated Radionuclide Angiography

The accuracy of a new count-based measurement of left ventricular volume was tested in patients undergoing equilibrium blood-pool imaging .......... Page 450

Simultaneous Assessment of Left Ventricular Wall Motion and Myocardial Perfusion with Technetium-99m-Methoxy Isobutyl Isonitrile at Stress and Rest in Patients with Angina: Comparison with Thallium-201 SPECT

Twenty-eight coronary patients were studied; 25 had a previous infarction. Agreement between [99mTc]MIBI and 201TI SPECT myocardial perfusion was seen in 93% of segments. The authors conclude that [99mTc]MIBI is ideal for
simultaneous evaluation of ventricular function and myocardial perfusion during stress and at rest. .......................... Page 457

Effect of Metabolic Inhibition on Technetium-99m-MIBI Kinetics in Cultured Chick Myocardial Cells

Although [99mTc]MIBI has been shown to be a flow-dependent tracer, myocellular net accumulation and uptake kinetics can be affected by pharmacologic alterations in membrane transport and metabolic status. ........................................ Page 464

Yttrium-90-Labeled Monoclonal Antibody for Therapy: Labeling by a New Macro cyclic Bifunctional Chelating Agent

Plasma stability studies and mouse distribution of the 99Y-labeled Mab Lym-1 using a new chelating agent, demonstrated stability of the yttrium label with no measurable loss of Y(III) over 25 days .......... Page 473

A New Radiochemical Method to Determine the Stability Constants of Metal Chelates Attached to a Protein

The authors developed a method of determining the stability constants of bifunctional chelates of indium coupled to a protein. Their results demonstrate that the indium in both protein-conjugated and free chelates is susceptible to replacement by ferric ions .......................... Page 480

Xenon-127m: A New Radionuclide for Applications in Nuclear Medicine

The authors describe the properties of xenon-127m and offer a convenient method for continuous generation with a cyclotron. The radionuclide was tested in normal volunteers .......................... Page 489

Attenuation Correction in SPECT Based on Transmission Studies and Monte Carlo Simulations of Build-Up Functions

The authors describe a method based on correcting pixel by pixel, using density charts, and buildup functions. Results indicate that measurements of activity within ±10%, in nonhomogeneous areas, can be accomplished for this method. .......................... Page 493

Enalaprilat-Enhanced Renography in a Rat Model of Renovascular Hypertension

The authors outline the potential advantage of enalaprilat over oral converting enzyme inhibitors for the detection of renovascular hypertension .......................... Page 501

Evaluation of a Remote Radiiodination System for Radioimmunotherapy

A remote radiiodination system that is inexpensive, easy to assemble, disposable, and capable of radiiodinating curie levels of activity safely. .......................... Page 508


Lymphoscintigraphy for Cystic Hygroma

The source of the lymph flow in to the hygroma was identified, as were some ectatic lymphatics feeding it. The implications for therapy are discussed .......................... Page 516

Iodine-131 Treatment of Graves' Disease Using Modified Early Iodine-131 Measurements in Therapy Dose Calculations

The authors retrospectively studied a new method for calculating the dose for 131I therapy in 27 patients with untreated thyrotoxic Graves' disease. Using this technique, same day diagnosis and treatment of Graves' is possible .......................... Page 519

Influence of pH Adjustment Agents on the Biologic Behavior of Osmium-191 Impurity in Iridium-191m Generator Eluates

Preliminary calculations of the influence of four buffering agents suggeststhat there is a significant decrease in the estimated patient radiation dose when lysine buffered 191Os/191mIr generator eluates are used for radionuclide angiography. .......................... Page 523

Diagnostic Accuracy and Pitfalls of 131I-6-Beta-Iodomethyl-19-Norcholesterol (NP59) Imaging

Studying 108 consecutive cases from 1982 to 1985 and using clinical, biochemical, radiographic and pathologic data, an assessment of the accuracy and pitfalls of NP-59 scintigraphy was performed. .......................... Page 526