652 Somatostatin Receptor Scintigraphy

691 Head and Neck Cancer and 11C-Methionine

696 rCBF Changes During Brain Maturation in Children and Adolescents

748 Skeletal Nonvisualization in a Bone Scan

771 Imaging Therapeutic Doses of 131I with a Gamma Camera

*A Full Table of Contents Begins on Page 4A, Annotations on Pages 7A-8A*
Evaluation of the Skeletal Kinetics of Fluorine-18-Fluoride Ion with PET

Dynamic image sets were acquired over a 60-min interval in a multiplane PET device, and input functions were measured directly from arterialized blood from 11 healthy male volunteers, and one breast cancer patient.

............................................. Page 633

Gastric Uptake of Gallium-67 in AIDS

Gastric localization of $^{67}$Ga is described in 13 patients with acquired immunodeficiency syndrome from among 148 patients primarily referred to rule out Pneumocystis carinii pneumonia.

............................................. Page 643

Pharmacokinetics of Rhenium-186 After Administration of Rhenium-186-HEDP in Patients with Bone Metastases

The pharmacokinetics of $^{186}$Re were studied in 11 patients with metastatic breast or prostate cancer. ............................................. Page 646

Somatostatin Receptor Scintigraphy with Indium-111-DTPA-D-Phe-1-Octreotide in Man: Metabolism, Dosimetry and Comparison with Iodine-123-Tyr-3-Octreotide

The metabolism of intravenously administered labeled-octreotide and estimates of its radiation dose to principal organs and effective dose equivalent was studied in six patients. In addition, scintigraphic images of various somatostatin receptor-positive tumors were compared using both $^{111}$Tyr-3-octreotide and $^{111}$In-DTPA-D-Phe-1-octreotide in the same patients. ............................................. Page 652

Regional Metabolic Abnormality in Relation to Perfusion and Wall Motion in Patients with Myocardial Infarction: Assessment with Emission Tomography Using Iodinated Branched Fatty Acid Analog

The clinical utility of single-photon tomography using both BMIPP and $^{201}$TI for the assessment of myocardial infarction was studied in 28 patients with infarctions and 4 normal subjects. ............................................. Page 659

Blinded Evaluation of Planar Technetium-99m-Sestamibi Myocardial Perfusion Studies

Myocardial perfusion studies of 28 patients with documented coronary artery disease and 16 normal subjects, blinded as to age, sex and other clinically relevant information, were sent to a second institution for interpretation. The studies were quantitated independently by two operators, and interpreted independently by two other experienced individuals. ............................................. Page 668

The Anatomy of Radioisotope Lung Scanning

The appearance of segmental and lobar ventilation defects of known anatomical location were examined on $^{133}$Xe ventilation scans in normal human subjects. ............................................. Page 676

The Kinetics of Copper-62-PTSM in the Normal Human Heart

In six healthy volunteers, $^{62}$Cu-PTSM was administered at baseline and during a 6-min adenosine infusion. Dynamic PET images were obtained over a 20-min span. ............................................. Page 684

Carbon-11-Methionine and PET Is an Effective Method To Image Head and Neck Cancer

Uptake of $^{11}$C-methionine in head and neck cancer in 23 patients was studied with PET using two methods: the influx constant, and the standardized uptake value. ............................................. Page 691

Changes in Regional Cerebral Blood Flow During Brain Maturation in Children and Adolescents

The reference values of regional cerebral blood flow for the main functional regions of the brain at various ages in childhood were established by SPECT studies of 42 children aged 2 days to 19 yr, considered neurologically normal. ............................................. Page 692

Characteristics of cerebral development changes are described. ............................................. Page 696

Cerebral Perfusion in Progressive Supranuclear Palsy

To assess brain functional activity in patients with PSP, regional cerebral perfusion, as estimated by IMP and SPECT, was measured in 11 patients with a clinical diagnosis of PSP and 10 healthy controls. ............................................. Page 704

Preparation and Preliminary Evaluation of Technetium-99m-Labeled Fragment E$_1$ for Thrombus Imaging

Human Fragment E$_1$ was derivatized with a hydrazino nicotinate function to permit radiolabeling with reduced technetium. The modification reaction was carried out while the fragment E$_1$ was protected in a complex, so that the modification occurred in nonfunctional regions of the fragment E$_1$ molecule. ............................................. Page 710

Evaluation of Metaiodobenzylguanidine Heart and Lung Extraction Fraction by First-Pass Analysis in Pigs

The first-pass extraction fraction of MIBG in pig heart and lungs was measured, and the relationship between cardiac EF and myocardial blood flow before and after injection of dipyridamole, cocaine and imipramine was determined. ............................................. Page 716


The authors describe the synthesis of six fluorine-labeled androgens and their tissue distribution in diethylstilbestrol-treated rats. ............................................. Page 724

Three-Dimensional Tumor Dosimetry for Hepatic Yttrium-90 Microsphere Therapy

Three-dimensional calculations were performed for the VX2 tumor model in rabbits treated with hepatic arterial...
administration of 99mTc glass microspheres. ........................................... Page 735

Renal Functional Response to Captopril During Diuretic Therapy

The effect of antihypertensive agents on the renal effects of angiotensin converting enzyme inhibition (ACEI), relative to the diagnosis of renovascular hypertension, was examined in two rat models with and without diuretic treatment prior to ACEI. ................. Page 739

Course Before and After Treatment of a Patient with Budd-Chiari Syndrome Monitored by Iodine-123-Iodoamphetamine Scintigraphy per Os and per Rectum

A 55-yr-old woman with Budd-Chiari syndrome was treated by percutaneous transluminal angioplasty with a balloon catheter. Before and after treatment, portal scintigraphy was performed by the administration of 123I per os and per rectum ............. Page 744

Skeletal Nonvisualization in a Bone Scan Secondary to Intravenous Etidronate Therapy

The authors discuss bone scan findings from a 65-yr-old female studied after initiation of intravenous etidronate disodium therapy for hypercalcemia associated with malignancy. The scan demonstrated essentially no skeletal uptake ..................... Page 748

Clinicopathologic Conferences:

Gallium-67-Citrate Scanning in the Assessment of Disease Activity in Sarcoidosis

A 35-yr-old white female, diagnosed two years prior to the latest admission as having sarcoidosis, presented with mild dyspnea on exertion and mild discomfort in her legs with occasional swelling .................. Page 751

Indium-111 Whole-Body Retention: A Method for Quantification of Disease Activity in Inflammatory Bowel Disease

Disease activity in 33 patients with inflammatory bowel disease was quantified by the measurement of 111In retention, expressed as a percentage of whole-body activity at 3 hr postinjection ............... Page 756

Four Radionuclide Methods of Left Ventricular Volume Determination: Comparison of Manual and an Automated Technique

The accuracy and reproducibility of three previously described and one new radionuclide method of measuring left ventricular volumes was studied in 19 subjects using contrast ventriculographic volumes as the gold standard ................... Page 763

A Method for Imaging Therapeutic Doses of Iodine-131 with a Clinical Gamma Camera

To image patients undergoing radioimmunotherapy, 1.6–6.4 mm thick lead absorber sheets were attached to the front face of a high-energy parallel-hole collimator ............... Page 771

MIRD Dose Estimate Report Number 15: Radiation Absorbed Dose Estimates for Radioindium-Labeled Autologous Platelets

MIRD Dose Estimate Number 15 provides radiation absorbed dose estimates for radioindium-labeled autologous platelets, along with the data on which the estimates were based, and the assumptions used in calculations. .......................... Page 777

Editorial: The MIRD Approach: Remembering the Limitations .................. Page 781

MIRD Pamphlet No. 14: A Dynamic Urinary Bladder Model for Radiation Dose Calculations

A new, dynamic urinary bladder model for dosimetric calculations, which incorporates physiologically realistic features from several recently developed models, is proposed as a replacement for the standard MIRD phantom. ................................. Page 783

Continuing Education: Radioimmunodetection in Cancer Identification .......... Page 803

Editorial: Thallium-201 and Technetium-99m-Sestamibi for Assessing Viable Myocardium ........................................ Page 815