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Antenatal Diagnosis of Pelvic Hydronephrosis: Assessment of Renal Function and Drainage as a Guide to Management

The efficacy of diuretic renography for diagnosing obstruction in 69 children between the ages of 1 and 14 mo was evaluated. Page 1649

Assessment of Response to Cancer Therapy using Fluorine-18-Fluorodeoxyglucose and Positron Emission Tomography

FDG-PET studies were performed both before and after therapy in 26 patients with miscellaneous malignant tumors. Page 1655

Estimates of Radiation Absorbed Dose for Intraperitoneally Administered Iodine-131 Radiolabeled B72.3 Monoclonal Antibody in Patients with Peritoneal Carcinomatosis

Biodistribution studies were performed and compared to tissue concentration from specimens obtained at laparotomy. Page 1661

Comparison of Oral Iodine-131-Cellulose and Indium-111-DTPA as Tracers for Colon Transit Scintigraphy: Analysis by Colon Activity Profiles

Visual assessment of the images from 11 normals and 11 patients with a clinical diagnosis of constipation revealed no difference between the tracers. Page 1668

Technetium-99m-d,1-Hexamethylpropylamine Oxime (HMPAO) Uptake and Glutathione Content in Brain Tumors

To investigate whether a significant correlation between glutathione concentration and regional tracer deposits can be shown in vivo, HMPAO uptake (SPECT) and glutathione concentration (biopsy specimens) were compared in 23 patients. Page 1675

Editorial: Technetium-99m-HMPAO Retention and the Role of Glutathione: The Debate Continues. Page 1681

An Analysis of Cerebral Blood Flow in Acute Closed-Head Injury Using Technetium-99m-HMPAO SPECT and Computed Tomography

SPECT and x-ray computed tomography were compared in 15 patients with acute closed-head injury. Page 1684

Visual and Quantitative Analysis of Interictal SPECT with Technetium-99m-HMPAO in Temporal Lobe Epilepsy

In 51 patients with intractable temporal lobe epilepsy, interictal SPECT images were compared to ictal EEG localization to determine their usefulness for preoperative seizure focus localization. Page 1688

Cholecystokinin Cholescintigraphy: Detection of Abnormal Gallbladder Motor Function in Patients with Chronic Acalculous Gallbladder Disease

Results from CCK cholescintigrams performed in 374 patients with recurrent post-prandial right upper quadrant pain, biliary colic and a final medical/surgical diagnosis are presented. Page 1695

Muscle Perfusion with Technetium-MIBI in Lower Extremity Peripheral Arterial Diseases

Scanning of the lower extremities was performed successively with injection during rest and after exercise on the same day in six controls and in 18 patients with claudication pain. Page 1700

Estimation of Technetium-99m-MAG₃ Renal Clearance in Children: Two Gamma Camera Techniques Compared with

Multiple Plasma Samples

Two fundamentally different gamma camera techniques, both of which require a single blood sample, were compared with multiple-blood sampling techniques for evaluating renal clearance in 30 children. Page 1704

Technetium-99m-MAG₃ Clearance as a Parameter of Effective Renal Plasma Flow in Patients with Proteinuria and Lowered Serum Albumin Levels

A comparison of clearance rates of ^{99m}Tc-MAG₃ and ¹³¹I-hippurate was undertaken in 14 patients in order to establish whether the presence of proteinuria or changes in liver serum albumin influence the clearance ratio. Page 1709

Utilization of Bone Scans in Conjunction with Prostate-Specific Antigen Levels in the Surveillance for Recurrence of Adenocarcinoma After Radical Prostatectomy

The utility of serial bone scans in combination with PSA levels was studied retrospectively in 118 men treated by radical prostatectomy for clinical Stage A or B disease. Page 1713

Rest-Injected Thallium-201 Imaging for Assessing Viability of Severe Asynergic Regions

Seventeen patients with previously infarcted myocardium were studied with rest-injected ²⁰¹Tl imaging in combination with ^{99m}Tc ventriculography before and after revascularization. Page 1718

Metabolic Asymmetries in Asymptomatic HIV-1 Seropositive Subjects: Relationship to Disease Onset and MRI Findings

Fifteen asymptomatic HIV-positive patients were studied with PET and MRI to evaluate changes in brain metabolism or structure at this stage of the disease. Page 1725

Positron-Labeled Angiotensin-Converting Enzyme (ACE) Inhibitor: Fluorine-18-Fluoro-

captopril. Probing the ACE Activity In Vivo by Positron Emission Tomography

To evaluate the feasibility of probing the distribution of ACE in vivo using PET, 4- ¹⁸FCAAP was prepared by the reaction of the triflate 2 with K¹⁸F/Kryptofix 222 in MeCN followed by hydrolysis. Page 1730

Brief Inhalation Method To Measure Cerebral Oxygen Extraction Fraction with PET: Accuracy Determination Under Pathologic Conditions

Non-human primates were assessed by comparing oxygen extraction fractions (OEF) measured under pathologic conditions of reduced cerebral oxygen metabolism. Page 1738

Gamma Imaging with Negatively Charge-Modified Monoclonal Antibody: Modification with Synthetic Polymers

Negatively charged antimyosin Mabs were tested for specific target localization and visualization in vivo in an experimental canine model of acute myocardial infarction. Page 1742

Editorial: Optimizing Antibodies for Use in Nuclear Medicine

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SPECT Imaging of the Benzodiazepine Receptor: Feasibility of In Vivo Potency Measurements from Stepwise Displacement Curves

Repeated injections of increasing doses of each of five benzodiazepine drugs yielded stepwise displacement curves, which were then analyzed to measure the in vivo potencies of these agents. Page 1754

Editorial: Application of SPECT to the In Vivo Measurement of Benzodiazepine Potency.

Page 1762

Radioiodinated 1-(5-Iodo-5-deoxy-β-D-arabinofuranosyl)-2-nitroimidazole (IAZA): A Novel Marker of Tissue Hypoxia

IAZA was synthesized and then labeled with ¹²⁵I. Whole-body

elimination and biodistribution studies in BALB/c mice bearing implanted, subcutaneous EMT-6 tumors were undertaken. Page 1764

An Investigation of the Magnitude and Causes of Count Loss Artifacts in SPECT Imaging

A quantitative evaluation and an investigation of the mechanism of the count losses that can occur in SPECT imaging are described. Page 1771

Clinicopathologic Conferences: Bile Leak Following an Elective Laparoscopic Cholecystectomy: The Role of Hepatobiliary Imaging in the Diagnosis and Management of Bile Leaks.

Page 1777

Duration of Etidronate Effect Demonstrated by Serial Bone Scintigraphy

The authors report the changes in skeletal uptake of ^{99m}Tc-MDP in a patient who received a single dose of EHDP for hypercalcemia. Page 1782

Pentavalent Technetium-99m-DMSA Uptake in a Patient Having Multiple Myeloma Without Amyloidosis

A 61-yr-old woman presenting with tumors in the clavicular and sternal regions and underwent pentavalent ^{99m}Tc-DMSA imaging. Page 1785

Isotopic Findings in Anomalous Origin of the Left Coronary Artery from the Pulmonary Artery: Report of an Adult Case

A gallium scan of a 17-yr-old patient suffering from anomalous origin of the left coronary artery from the main pulmonary trunk was abnormal. Page 1788

Gallium-SPECT in the Detection of Prosthetic Valve Endocarditis and Aortic Ring Abscess

A 52-yr-old man who had a bioprosthetic aortic valve developed *Staphylococcus aureus* bacteremia. Echocardiography did not demonstrate vegetations on the valve,

but gallium-SPECT identified a focus of activity. Page 1791

Reorientation of the Left Ventricular Long-Axis on Myocardial Transaxial Tomograms by a Linear Fitting Method

The reproducibility of the reorientation with a semi-automatic method was compared with manual selection of the LV long-axis. Page 1794

A Theoretical Comparison of First-Pass and Gated Equilibrium Methods in the Measurement of Systolic Left Ventricular Function

The results of a simple theoretical calculation from first principles that compare first-pass and gated equilibrium radionuclide studies of LV function based on their relative statistical precision are presented. Page 1801

An Improved Method for the Quantification of Left-to-Right Cardiac Shunts

The gamma variate which is fitted to the first-pass portion of the lung curve was used to generate a curve which simulates the response of a normal lung curve with systemic recirculation. Page 1808

Cone-Beam Transmission Computed Tomography for Nonuniform Attenuation Compensation of SPECT Images

Cone-beam transmission CT was implemented on a rotating gamma camera. Attenuation compensation accuracy was tested using basic geometries of line sources and nonuniform density models. Page 1813

Simplified Methods for Renal Clearance in Children: Scaling for Patient Size

Iodine-131-OIH plasma clearance curves were measured in 68 adults and in 30 children weighing 38 pounds or more. Clearance was calculated using two methods: an empirical single-sample formula and a two-sample method based on a two-compartment model. Page 1821