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Nuclear Exercise Testing and the Management of Coronary Artery Disease

Patients (378) were referred for nuclear exercise testing and were classified using demographics and symptoms into three categories: low, intermediate, and high coronary disease likelihoods. Page 753

Reproducibility of Quantitative Planar Thallium-201 Scintigraphy: Quantitative Criteria for Reversibility of Myocardial Perfusion Defects

Fifty-two paired stress/delay planar ²⁰¹Tl studies were processed twice by seven technologists to assess inter- and intraobserver variability. Reproducibility was inversely related to the size of ²⁰¹Tl perfusion abnormalities. Intraobserver variability was not different between exercise and dipyridamole studies for lesions of similar sizes. Page 759

Renal Function and Technetium-99m-Dimersuccinic Acid Uptake in Single Kidneys: The Value of In Vivo SPECT Quantitation

Twenty patients with a single kidney and varying degrees of renal disease underwent SPECT imaging to determine the relationship between DMSA uptake in the kidney and creatinine clearance. Page 766

Radioimmunodetection of Neuroblastoma with Iodine-131-3F8: Correlation with Biopsy, Iodine-131-Metaiodobenzylguanidine, and Standard Diagnostic Modalities

Iodine-131-3F8 was evaluated in 42 patients with neuroblastoma by radioimmunoscintigraphy and then compared with [¹³¹I]MIBG, ^{99m}Tc-MDP bone scans, CT, and MRI. . . . Page 769

Left Ventricular Regional Wall Motion Assessment by Radionuclide Ventriculography: A Comparison of Cine Display with Static and Dynamic Fourier First Harmonic Imaging

Radionuclide and contrast ventriculography were performed in two comparative projections on 50

patients with suspected coronary artery disease. The efficacy of conventional cine display and Fourier image analysis was compared using contrast ventriculography as the gold standard. Page 777

Editorial: Radionuclide Ventriculography: Should Fourier Analysis Replace Cine Display?

. Page 782

Evaluation of Indium-111-Labeled Antifibrin Monoclonal Antibody for the Diagnosis of Venous Thrombotic Disease

Forty-four patients with suspected DVT were studied with contrast venography and ¹¹¹In-antifibrin injection within a 24-hr period. Serial antifibrin scintigrams enhanced the sensitivity of thrombus detection. Page 785

Editorial: Do We Finally Have a Radiopharmaceutical for Rapid, Specific Imaging of Venous Thrombosis?

. Page 791

Accuracy and Reproducibility of Left Ventricular Ejection Fraction Measurements Using an Ambulatory Radionuclide Left Ventricular Function Monitor

Thirty-six subjects underwent repetitive bicycle exercise using sequences of both VEST monitoring and gamma camera imaging. A high intraclass correlation was noted for both absolute ejection fraction and ejection fraction. Page 796

Indium-111-Leukocyte Imaging in Acute Cholecystitis

Eleven patients with suspected acute cholecystitis underwent sequential ^{99m}Tc-iminodiacetic derivative ¹¹¹In-WBC imaging to determine if ¹¹¹In-WBCs accumulate within an acutely

inflamed hemorrhagic gallbladder wall. Page 803

Changes in Quantitative SPECT Thallium-201 Results Associated with the Use of Energy-Weighted Acquisition

The effect of utilizing energy-weighted acquisition on quantitative analysis of SPECT ²⁰¹Tl images was evaluated by comparing energy-weighted and windowed projection images acquired simultaneously in ten patients. Page 805

Radiation Dosimetry for Iodine Administration to Hyperthyroid Patients

Utilizing a study of the iodine kinetics in 127 patients, the authors developed radiation dose-to-organ estimates to the bladder, gonads, marrow, thyroid, uterus, whole body—and the fetus—in patients with varying degrees of hyperthyroidism. Page 808

Radionuclide Angiography with Technetium-99m In Vivo Labeled Erythrocytes Does Not Lead To Induction of Mutations in the HPRT Gene of Human T-Lymphocytes

Mutant frequencies were measured in T-lymphocytes of 13 patients undergoing radionuclide angiography with erythrocytes labeled in vivo with ^{99m}Tc. Page 814

A Strategy for the Study of Cerebral Amino Acid Transport Using Iodine-123-Labeled Amino Acid Radiopharmaceutical: 3-Iodo-alpha-methyl-L-tyrosine

In mice and rat brains, studies indicated the affinity of ¹²³I-L-AMT for carrier-mediated and stereoselective active transport systems; both operating across the blood-brain barrier and cell membranes of the brain. Page 819

An Approach for Immunoradiometric Assay with a Metallic Radionuclide: Gallium-67-DF-Dialdehyde Starch-IgG

Two tactics were used to achieve a high specific radioactivity of metal-labeled IgG: the use of a radionuclide

with a high disintegration rate, and an increase in the number of radionuclide atoms bound to each IgG molecule. Page 825

Absorbed Dose Calculations to Blood and Blood Vessels for Internally Deposited Radionuclides

To determine absorbed doses to the blood and the surface of the blood vessel wall, EGS4 Monte Carlo calculations were performed. Absorbed doses were calculated for the blood and the blood vessel wall (lumen) for different blood vessel sizes. Page 830

Estimates of Absorbed Fractions in Small Volumes for Selected Radionuclides

Absorbed fractions calculated using actual beta spectral energies were compared with those obtained using the mean beta energy for several radionuclides commonly used in nuclear medicine. Page 835

Radiation Absorbed Dose Calculations for Samarium-153 Localized in Bone

Established bone structure parameters were employed to partition the energy absorbed in the bone matrix between red bone marrow, yellow marrow, and various types of mineral bone. Both uniform surface and volume distribution of the radioactivity were considered Page 840

The Chemical Identity of Pentavalent Technetium-99m-Dimersuccinic Acid

Pentavalent ^{99m}Tc-DMSA was studied to elucidate its structure and behavior. The isomers arise from differing orientations of the carboxylate groups in the DMSA ligands and may be designated *syn-endo*, *syn-exo*, and *anti*. All three isomers are significant components of the radiopharmaceutical, raising the question as to which are tumor-specific. Page 845

Editorial: Small Coordination Complexes in Tumor Imaging Page 849

Cardiac Blood-Pool Scintigraphy in Rats and Hamsters: Comparison of Five Radiopharmaceuticals and Three Pinhole Collimator Apertures

Gated blood-pool scans were recorded with five blood-pool radiopharmaceuticals in rats and with three pinhole apertures in hamsters. The quality of the radiopharmaceuticals was evaluated by comparing count density ratios and ejection fractions recorded with each agent. . . . Page 851

Clinicopathologic Conferences: The Role of Scintigraphy in the Management of Inflammatory Bowel Disease. Page 856

Detection of Mediastinitis After Heart Transplantation by Gallium-67 Scintigraphy

A ⁶⁷Ga scan showed intense abnormal uptake behind the sternum of a 47-yr-old patient who had recently undergone heart transplantation. Page 860

Reversal of Intrapulmonary Shunting in Cirrhosis After Liver Transplantation Demonstrated by Perfusion Lung Scan

A young girl with biliary atresia leading to cirrhosis developed respiratory complications with hypoxemia. Intrapulmonary shunting was diagnosed with ^{99m}Tc-MAA perfusion lung scans. Page 862

Myocardial Distribution of Indium-111-Antimyosin Fab in Acute Inferior and Right Ventricular Infarction: Comparison with Technetium-99m-Pyrophosphate Imaging and Histologic Examination

Comparisons were made in a post-mortem study of a 69-yr-old female

who had sustained a left ventricular inferior and right ventricular infarction 7 days prior to death. The myocardial distribution of ¹¹¹In-antimyosin Fab corresponded well with ^{99m}Tc-pyrophosphate scintigrams and histologic examination. Page 865

Editorial: Of Antimyosin Imaging and the Histopathology of Myocardial Infarction: When, Where, and Why?. Page 867

Orbit-Related Variation in Spatial Resolution as a Source of Artfactual Defects in Thallium-201 SPECT

Simulated SPECT data, acquired with circular and elliptical orbits, were reconstructed in order to study the effect of spatial resolution on the resulting tomograms. Page 871

Editorial: SPECT and Artifacts—In Search of the Imaginary Lesion Page 875

Use of Technetium-99m(V)Thiocyanate To Measure Gastric Emptying of Fat

Six volunteers consumed a low nutrient soup labeled with ^{113m}In-DTPA and mixed with ^{99m}Tc(V) thiocyanate labeled olive oil. The aqueous component emptied faster than the oil. Page 878

Editorial: Considerations for Accurately Measuring Gastric Emptying. Page 881

Commentary: An Abbreviated Complaint. Page 885

Continuing Education: Parathyroid Imaging. Page 887

Editorial: The Infiltrated Radiopharmaceutical Injection: Risk Considerations. Page 890