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Indium-111-Granulocyte Scintigraphy in Brain Abscess Diagnosis: Limitations and Pitfalls

Scintigrams and records of 28 patients referred for ¹¹¹In-granulocyte scintigraphy for suspected brain abscesses were studied retrospectively. The results suggest that intense focal cerebral uptake is seen in patients' abscesses unless they are treated with medium- or high-dose steroid therapy *Page 1121*

Perfusion and Function At Rest and Treadmill Exercise Using Technetium-99m-Sestamibi: Comparison of One- and Two-Day Protocols in Normal Volunteers

The feasibility of performing rest and exercise [^{99m}Tc]hexamibi studies on the same day was explored in 34 asymptomatic volunteers using first-pass radionuclide angiography, planar tomography, and SPECT. *Page 1128*

In Vivo Fate of Monoclonal Antibody B72.3 in Patients with Colorectal Cancer

Serum samples from 27 colorectal carcinoma patients injected with ¹³¹I-B72.3 were analyzed for TAG-72 levels, the integrity and immunoreactivity of injectate MAb, and the formation of immune complexes. Elevated TAG-72 in the patients' preinoculum serum was shown to correlate with the detection of lesions by gamma scanning *Page 1133*

Editorial: In Vivo Fate of Monoclonal Antibody B72.3

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Iodine-123-Metaiodobenzylguanidine Scintigraphy in Patients with Chemodectomas of the Head and Neck Region

Studying the uptake of iodine in chemodectomas, the authors

detected catecholamine-secreting tumors in 5 of their 14 patients. After studying the phenomenon, they conclude that such tumors are more common in patients with chemodectomas than previously believed, and warrant the use of urinary catecholamine screening for all patients with chemodectomas. *Page 1147*

Dual-Energy X-ray Absorptiometry: A Precise Method of Measuring Bone Mineral Density in the Lumbar Spine

Conventional dual-photon absorptiometry (DPA) was compared with dual-energy x-ray absorptiometry (DEXA) for measuring spinal bone mineral content (BMC), and the clinical utility of both was compared with measurement of BMC in the forearm. DEXA's long-term in vivo precision of 1% was significantly better than that of DPA. Variability in response to estrogen and placebo treatment was much lower with DEXA. *Page 1156*

Visualization of Suppressed Thyroid Tissue by Technetium-99m-Tertiary Butyl Isonitrile: An Alternative to Post-TSH Stimulation Scanning

In 13 of 14 patients, ^{99m}Tc-TBI demonstrated the contrauterine lobe. Although it is not possible to demonstrate the autonomous nature of the hyper-functioning thyroid nodule with TBI, it is feasible to visualize the lobe without utilizing the cumbersome TSH stimulation test *Page 1163*

Editorial: Noncardiac Applications of Hexakis (Alkylisonitrile) Technetium-99m Complexes

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Quantitative Analysis of Tomographic Stress Thallium-201 Myocardial Scintigrams: A Multicenter Trial

Gender-matched normal limits developed from 35 patients with < 5% likelihood of CAD were initially tested in 15 patients using three different software systems. Subsequently, the same program was employed at ten sites where a total of 318 patients were studied. *Page 1168*

The Therapeutic Efficacy of Oral Cholecystographic Agent (Iopanoic Acid) in the Management of Hyperthyroidism

Five thyrotoxicosis patients, chosen at random, received 1 g of the iodinated oral cholecystographic agent, iopanoic acid, daily for 21 days. T3 levels fell to 75% of the pre-therapy value by 96 hr, and remained normal over the 21 days. T4 values fell significantly by the seventh day and were also sustained over the course of the study. FT3 and FT4I showed corresponding decrease *Page 1180*

Myocardial Clearance Kinetics of Technetium-99m-SQ30217: A Marker of Regional Myocardial Blood Flow

As determined by dynamic image acquisition using single-photon ring tomography, the first-pass myocardial retention of SQ30217 following intravenous injection averaged 90%; the clearance half-time time averaged 21±4 min in normally perfused areas, decreasing to 13±4 following dipyridamole. The authors conclude that both initial uptake and clearance are useful markers of myocardial perfusion *Page 1183*

A Modeling Analysis of Monoclonal Antibody Percolation through Tumors: A Binding-Site Barrier

The authors suggest that their

method of analysis demonstrates that antigen-antibody binding in tumors may retard antibody percolation and that high affinity in fact decreases percolation because of the lack of free antibody molecules. Increasing the dose of the antibody leads to better percolation and more uniform distribution. *Page 1191*

Localization of Fc and Fab Fragments of Nonspecific Polyclonal IgG at Focal Sites of Inflammation

Biodistribution studies in healthy animals performed 1, 6, 24, and 48 hr after injection of labeled intact IgG, Fc, Fab, and 1/2 Fc and localization at sites of inflammation as determined by scintillation camera imaging suggest that the Fc portion of IgG is necessary for localization at sites of inflammation. *Page 1199*

Clinical Pathologic Conferences: Intraperitoneal Urinary Leak Following Renal Transplant: The Role of Radionuclide Imaging *Page 1206*

Methods for Measuring GFR with Technetium-99m-DTPA: An Analysis of Several Common Methods

Forty-three adult patients were

studied with several commonly used methods of GFR measurement. The Russell two-point and Jackson urinary GFRs are recommended as complementary techniques and as primary methods of scintigraphic GFR determination. *Page 1211*

Correlation Methods for the Centering, Rotation, and Alignment of Functional Brain Images

The authors present a description of methods needed to rotate functional brain images to a standard vertical orientation, identify the antero-posterior centerline, and align multiple images from the same brain level *Page 1220*

Editorial: Registration of Nuclear Medicine Images *Page 1227*

Wiener Filtering Improves Quantification of Regional Myocardial Perfusion with Thallium-201 SPECT

Quantitation of relative myocardial thallium distribution was improved by reconstructing SPECT images after pre-filtering with a Wiener filter *Page 1230*

Lacrimal Gland Dosimetry for the Brain Imaging Agent Technetium-99m-HMPAO

One-hundred thirty-eight patients were studied using a dedicated brain imaging device. Only 11% of the patients showed lacrimal gland uptake. For a 740-MBq (20 mCi) injected dose of ^{99m}Tc-HMPAO, the radiation exposure to the lacrimal glands is 10.2 mGy (1.02 rad) or 0.0138 mGy/MBq (0.051 rad/mCi). *Page 1237*

Reversibility Bull's-eye: A New Polar Bull's-eye Map to Quantify Reversibility of Stress-Induced SPECT Thallium-201 Myocardial Perfusion Defects

A method for quantifying and displaying the three-dimensional distribution of reversible segments is demonstrated *Page 1240*

No-Carrier-Added Regioselective Preparation of 6-[¹⁸F]Fluoro-L-Dopa

A description of the preparation of 6-[¹⁸F]fluoro-L-dopa by a no-carrier-added method based on the nucleophilic displacement of nitro groups from two commercially available substrates, 3, 4-dimethoxy-2-nitrobenzaldehyde and 6-nitropiperonal is presented *Page 1247*