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

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

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 [99mTc]hexamibi studies on the same day was explored in 34 asymptomatic volunteers using first-pass radionuclide angiography, planar tomography, and SPECT.

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

Serum samples from 27 colorectal carcinoma patients injected with 111In-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.

Editorial: In Vivo Fate of Monoclonal Antibody B72.3

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.

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.

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

In 13 of 14 patients, 99mTc-TBI demonstrated the contralateral 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 simulation test.

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

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

The authors suggest that their
The 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 1291

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 1299

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 anteroposterior 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 99mTc-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-nitropropionaldehyde is presented. Page 1247