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Tc-99m-ECD DYNAMIC SPECT IN PATIENTS WITH BRAIN TUMOR - COMPARISON WITH Tl-201 SPECT

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Dynamic ECD SPECT were done in 19 patients with brain tumor. Repeated acquisition of 30 sec/rotation was done by a Toshiba gamma-camera, GCA-9300A/DI for 10 min after ECD injection and images were reconstructed every 1 min. Standard ECD SPECT was then followed. Tl-201 early(10 min) and delayed(3 hr) SPECT were done on a different day. Early ratio (ER), delayed ratio(DR), and washout rate(WR) were calculated.

Out of 19 patients, 4 showed increased uptake to the tumor(2 pituitary tumor, 1 meningioma, 1 chemodectoma) during dynamic phase though 2 of 4 showed disappearance of the uptake in the standard ECD SPECT. Mean WR of the patients with increased uptake was significantly higher than that with negative uptake though the difference of ER or DR between increased and negative uptake cases was insignificant.

In conclusion, dynamic ECD SPECT might reflect vascularity of tumors and retention of the tracer in the tumor.

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GALLIUM-67 UPTAKE IN PLEOMORPHIC ADENOMAS OF THE SALIVARY GLANDS ; ITS PATHOLOGICAL CORRELATION.

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We correlated Ga-67 uptake and pathology in pleomorphic adenomas of the salivary glands. Sixty-two pleomorphic adenomas were graded on Ga-67 uptake as (i)negative, (ii)weakly positive, or (iii)strongly positive. Thirty-six adenomas were classified as grade(i), 8 adenomas were grade(ii), and 18 adenomas were grade(iii). All these adenomas were re-examined pathologically, and classified as epithelial(E), intermediate(I), or mesenchymal(M) in type according to the dominant histological component. About half of the grade(iii) adenomas were of the (E) type and the other half were of the (I) type. Most of the grade(ii) adenomas were of the (I) type. Grade(i) adenomas were largely of the (M) type. These results suggest that Ga-67 uptake may reflect the epithelial cellular components of the adenomas. The presence of marginal invasion or associated sialoadenitis was not a major factor in Ga-67 uptake.

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^{18}FDG UPTAKE IN NORMAL EXTRACRANIAL HEAD AND NECK STRUCTURES: THREE DIMENSIONAL APPROACH WITH HIGH RESOLUTION PET.

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To define normal ^{18}FDG uptake in head and neck regions delineated by high resolution PET, for precise location of neoplastic disease. Ten subjects without head and neck lesions were evaluated. ^{18}FDG PET was performed with high resolution whole body 18 ring scanner (GE Advance). Transaxial, sagittal and coronal images were evaluated in comparison with MRI and CT with the same section. SUVs were used to quantitate FDG uptake. The gingiva, soft palate, hypopharynx and tongue surface showed high SUV, followed by the submandibular glands, parotid glands, nasal mucosa and tongue muscle. No correlation was observed between SUV and the serum glucose level. Using these anatomical landmarks, PET has made it possible precise anatomical localization of the neoplasm in the head and neck regions.

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PREDICTION OF CHEMOTHERAPEUTIC EFFECT FOR LUNG CANCER BY Tc-99m MIBI.

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The aim of the study is to evaluate whether accumulation of Tc-99m MIBI in lung cancer can predict chemotherapeutic effect. Prior to chemotherapy, SPECT imagings of 10 patients with lung cancer were achieved at 15 and 180 min after injection of 740MBq MIBI or 111MBq Tl-201. The ratios of the counts in tumor and contra-lateral normal lung were calculated as early ratio (ER) or delayed ratio (DR). Retention index (RI) was calculated as [100x(DR-ER)/ER]. The patients were classified into Group A (6 cases) which showed response to chemotherapy (PR+MR) and Group B (4 cases) which showed no response (NC+PD). The results are summarized in the table below. We also observed the relationship between the regression of lymph nodes and RI in comparison to those of primary site within the same patient. Seven out of 8 metastatic nodes whose response was worse than primary tumors showed lower RI values than those of primary tumors and 1 out of 2 metastases whose response was better showed higher value. These results indicate that RI of MIBI may predict response to chemotherapy for lung cancer.

Group	MIBI			Tl		
	ER	DR	RI	ER	DR	RI
A	2.22	2.76	24.1	2.85	3.50	20.5
B	2.50	2.05	-13.0	2.31	2.80	22.4