468

A COMPARATIVE STUDY OF I-131 MIBG AND CT SCAN FOR THE DETECTION OF PHEOCHROMOCYTOMA
M.Koizumi,K.Endo,H.Sakahara,T.Nakashima,H-.Ohta,R.Okumura,Y.Kawamura,Y.Nakano,K.Nakao* and K.Torizuka. Department of Nuclear Medicine and Internal Medicine*, Kyoto University, Kyoto.

To evaluate the usefulness of I-131 MIBG scintigraphy for the detection of pheochromocytoma, a comparative study of CT scan, which was a very useful tool for the localization of pheochromocytoma, and I-131 MIBG scintigraphy was performed. Thirty-three patients who were referred to confirm of having pheochromocytoma were studied by both I-131 MIBG scintigraphy and CT scan. Eighteen cases were confirmed to have pheochromocytoma by surgery or autopsy, and the remaining 15 patients were judged to be free of the disease at surgery for a non- pheochromocytoma mass or by failure to corroborate the biochemical abnormality.

The sensitivity together with adrenal and ectopic pheochromocytoma was 83% for CT scan and 78% for I-131 MIBG scintigram, respectively. When pheochromocytoma located in the adrenal gland, sensitivity of CT scan(90%) was superior to that of I-131 MIBG(75%). But I-131 MIBG had the superior sensitivity (100%) than CT scan(33%) in case of ectopic ones.

In conclusion, CT scan and I-131 MIBG scintigraphy were both useful tools for the localization of pheochromocytoma, and played a complementary role to each other.

469

SCINTIGRAPHIC DETECTION OF ADRENOCORTICAL CARCINOMA WITH I-131 ADOSTEROL.
S. Maruoka, M. Nakamura. Department of Radiology, Tohoku University, Sendai.

There are very few literatures on satisfactory imaging of adrenocortical carcinoma by means of I-131 Adosterol scintigraphy, although many reports have referred to utility of I-131 Adosterol scintigraphy for adrenal disorders. Since 1976, we have experienced 4 cases of adrenocortical carcinoma which were delineated by I-131 Adosterol. Three of 4 cases were adrenocortical carcinoma with Cushing syndrome, and one was adrenocortical carcinoma with adrenogenital syndrome. All of cortisol secreting adrenocortical carcinoma were female, age distribution of the patients ranged from 42 to 58 years, 80x68x62—130x105x90mm in size and 220—800g in weight by surgery. The patient of androgen secreting carcinoma was 2 years old female, the tumor was measured 53x42x30mm and weighed 33g. Scintiscans were performed mainly at 8 days after 400—500μCi(150μCi to 2 years old female) of radiopharmaceutical agent was injected. In three cases of cortisol secreting adrenocortical carcinoma, uptake in the carcinoma and lack of uptake in the contralateral adrenal gland were seen. Faint to moderate uptakes were recognized in the two cases, but another one showed as high uptake as seen in adenoma. Patient with androgen secreting adrenocortical carcinoma had increased uptake in the tumor and showed faint uptake in the contralateral adrenal gland.

470

STUDIES ON MEASUREMENT OF ADRENAL I-131-ADOSTEROL UPTAKE USING SPECT WITH REGRESSION LINE AND STANDARD METHODS.
J.Ishimura, M.Suehiro, K.Tachibana, K.Onoue, K.Hamada, and M.Fukuchi, Division of Nuclear Medicine, RI Center, Hyogo College of Medicine Nishinomiya, Hyogo.

The measurement of the %uptake using SPECT with regression line and standard methods was described for clinical evaluation of the adrenal status. 22 patients with normal functioning adrenal glands(N), 7 patients with hyperfunctioning adrenal glands(HP), including 4 primary aldosteronism and 3 Cushing's syndrome and 6 patients with hypofunctioning adrenal glands(HO) were studied. I-131-Adosterol was given i.v. and SPECT images were aquired for 360°. The %uptake was calculated from SPECT counts with the methods. The %uptake values obtained with regression line method in N was 0.72±0.55% in right glands and 0.61±0.48% in left glands, in HP was 1.61±0.78% in abnormal glands. However, the %uptake values obtained with regression line method could not clearly distinguish between N and HP in some glands. The %uptake values obtained with standard method in N was 0.60±0.27% in right glands and was 0.53 ±0.22% in left glands, in HP was 2.03±1.35% in abnormal glands. The data obtained with standard method show no overlap between N and HP in all glands. The findings suggested that the measurement of adrenal I-131-Adosterol uptake using SPECT with standard method was useful for clinical evaluation of adrenocortical status.

471

PSEUDO-FUNCTIONING ADRENOCORTICAL ADENOMA ON ADRENAL SCINTIGRAM.
H.Mine,S.Matsumoto, K.Kaneta,M.Washizuka,I.Umehara,T.Okuyama and Y.Higashi.Cancer Institute Hospital and Tokyo Medical and Dental University,Tokyo.

Two cases of adrenocortical adenoma in which accumulation of radioactivity in the adrenal gland was evident but showed no hormonal abnormality clinically are presented.

In either case, adrenal tumor was demonstrated on CT unexpectedly, and was pathohistologically proved to be an adrenocortical adenoma. Adrenal scintigraphy was performed using Se-75-Scintadren.

Some steroids and steroid-metabolizing enzymes were measured about the resected adrenal adenoma and its adjacent adrenal tissue.

It is considered that because of some disturbance on the way of steroid biosynthesis, some intermediate products were increased in concentration in the tumors, and so they looked like hyperfunctioning adrenocortical tumors scintigraphically.

Presented by Medical*Online