To evaluate the usefulness of I-131 MIBG scintigraphy for the detection of pheochromocytoma, a comparative study of CT scan, which was a 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 fluorescence 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 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.

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 acquired 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 I-131 Adosterol uptake using SPECT with standard method was useful for clinical evaluation of adrenocortical status.