Adrenal scanning was done in 23 patients, 6 of primary aldosteronism, one of so-called idiopathic aldosteronism, 12 of essential hypertension and others. A tracer dose of 1 mCi of $^{131}$I-19-idocholesterol was injected intravenously and as a rule, scanning was done at 8 days after the administration. In addition, each adrenal region is isolated as a region of interest by recording the image of the adrenal regions on the oscilloscope of scinticamera, and right-to-left adrenal uptake ratio of $^{131}$I-19-idocholesterol was determined.

The result were as follows,

1) In normal adrenals, right-to-left uptake ratio ranged from 1.05 to 1.60 and averaged in 1.37±0.18 while in primary aldosteronism it ranged from 2.11 to 6.32 and was significantly higher than that of normal adrenals.

2) Adrenal scan accurately localized the tumor in all 6 patients with primary aldosteronism. On the contrary, selective adrenal venography showed the tumor in 3 of the 6 patients. In one patient with a $0.9 \times 1.2 \times 1.2$ cm cortical adenoma demonstrated by adrenal scan, venography did not disclose the lesion.

3) There was no correlation between right-to-left uptake ratio and the size of adenoma in primary aldosteronism.

The reliability, the greater safety and simplicity of adrenal scanning suggests that it should be used as a screening test before venography when primary aldosteronism is strongly suggested by endocrinological examinations.

Diagnostic value of adrenal scintigraphy using $^{131}$I-CHOLESTEROL

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Diagnostic value of adrenal scintigraphy using $^{131}$I-cholesterol was estimated on histologically proven cases. And the radionuclide accumulation in adrenal glands of patients with hypertension due to various causes was quantitatively measured by analysis of digital...
**Materials and methods**

Sixteen cases were studied in the Department of Radiol., Kyushu Univ., from December 1972 to July 1974. Of 16 cases, 7 were proved histologically and 9 were unverified.

Adrenal scintigraphy was performed after the intravenous administration of 400-900μCi of $^{131}$I-cholesterol.

Scintigrams obtained 8 days following the administration were evaluated for adrenal images.

The scintigraphic findings were classified according to grade of radionuclide accumulation as follows; markedly positive (2+), positive (+), slightly positive (±), and negative (−).

Computer analysis of radionuclide accumulation in adrenals was performed by TOSHIBA Gamma Camera GCA-102, equipped with TOSBAC-40, and these results were correlated with the scinti-graphic images.

**Results**

On 7 cases proven histologically, 6 cases including 4 primary aldosteronism due to adenoma and 2 Cushing syndrome due to adenoma, were correctly diagnosed by this method preoperatively. These 6 lesions showed markedly positive images.

Involved / Background-ratio and High / Low-ratio were over 4.0, and 1.6, respectively.

On the other hand, 2 cases with essential hypertension showed positive (+) adrenal images. Adrena / Background and High / Low-ratio were below 2.6 and 1.2, respectively.

As for scintigraphic images of uninvolved side, 2 cases of primary aldosteronism showed positive (+), but the other 2 were negative, and also 2 Cushing syndrome due to adenoma were negative.

**Conclusion**

Adrenal scintigraphy by $^{131}$I-cholesterol is a useful method for a preoperative detection of adrenal lesions.

Computer analysis used in this study adds more accuracy for the diagnosis of adrenal lesions.

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**Clinical Evaluation of Adrenal Scintigraphy Using I-131-19-Iodocholesterol**

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The purpose of this study is to evaluate the diagnostic value of an adrenal scintigraphy using I-131 cholesterol.

**Material and method:** 31 subjects were studied including 5 controls, 11 patients of lung cancer with normal adrenal function, 6 patients with primary aldosteronism, 2 patients with secondary aldosteronism, 3 with Cushing's syndrome, 3 with adrenogenital syndrome and 1 with metastatic adrenal tumor. The patients were examined in a sitting position with the scintillation camera. In 6-8 days after the intravenous administration of a dose of 1 mCi of I-131 cholesterol, the patient's adrenal glands