L. Endocrinology

^{131}I-19-Iodocholesterol Adrenal Scanning in Primary Aldosteronism

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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-iodocholesterol 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-iodocholesterol was determined.

The result were as follows,

1) Innormal 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 wth a $0.9 \times 1.2 \times 1.2$ cm cortical adenoma demonstrated by adrenal scan, voenography 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

images.

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 accumulationin 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.

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 subjests 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 m Ci of 1-131 cholesterol, the patient's adrenal glands