

pectively. For demonstration of cystic lesions, CT was given higher score with 3.5 than the tomoscan with 2.9. Of 40 patients, the tomoscan had 1 case of false negative, whilst CT had 7 false negatives.

CT provided better visualization of cystic lesions than the tomoscan, but was much inferior to the tomoscan in demonstrating solid lesions.

3. Correlation of the tomoscan and the conventional camera.

a) Demonstration of S.O.L.

Comparative study of the camera and the tomoscan was done in liver images of 58 patients with the S.O.L. In anterior and posterior views, the tomoscan was superior in 15 of 58 patients (26%), including 2 false negatives on the camera study. In 44 patients noted the S.O.L. in right lateral view, 17 cases (43%) were superior in the tomoscan to the camera, including 3 false negatives on the camera.

b) Demonstration of intrahepatic bile ducts dila-

tation.

Correlative study was done on 16 patients with intrahepatic bile ducts dilatation. Images by two modalities were compared on the following 4 findings.

- 1) A focal defect in the region of porta hepatis.
- 2) Band like or linear defects.
- 3) Stellate appearance of decreased activity.
- 4) Prominent gall bladder fossa.

The tomoscan was superior in 5 of 11 patients (45%) with the first finding, all of 8 patients (100%) with the 2nd, 2 of 4 patients (50%) with the 3rd and 2 of 5 patients (40%) with the 4th finding.

Conclusion.

The ability of the tomoscan to detect S.O.L. in the liver was discussed. All of S.O.L. over 3 cm were identified with the tomoscan. In comparison with CT and the conventional camera, the tomoscan was more useful for the assessment of focal hepatic lesions or intrahepatic bile ducts dilatation.

Adrenal Scintigraphy and Angiography

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Adrenal scintigraphy is very useful for clinical diagnosis of various adrenocortical diseases. The diagnostic accuracy of adrenal scintigraphy was studied compared with adrenal angiography. In these series, after intravenous administration of 0.5–1.0 mCi of ^{131}I -19-iodocholesterol or ^{131}I -6 β -iodomethyl-19-nor-5(10)-cholesten-3 β -ol, adrenal scanning was performed with 5-inch scintiscanner and simultaneously, ^{131}I adrenal uptake and right-to-left adrenal uptake ratio (R/L ratio) were measured with scinticamera at the 8th day. In cases suspected of adrenocortical tumor, selective adrenal venography and arteriography were performed after adrenal scintigraphy.

Adrenal scintigraphy was performed in 134 cases. These consist of 17 cases of primary aldosteronism, 8 of Cushing's syndrome, 1 of DOC producing tumor, 6 of adrenogenital syndrome, 2 of 17 α -hydroxylase deficiency, 2 of pheochromocytoma, 2 of non-functioning tumor, 3 of hypoadrenalism, 55 of miscellaneous hypertension, 12 of simple obesity and 26 of other diseases.

Adrenal scintigraphy was successful in demonstration of 21 adenomas (91%) associated with primary aldosteronism, DOC producing tumor and Cushing's syndrome, while adrenal angiography was successful in demonstration of 19 adenomas (86%). The lesions were correctly lateralized in all patients with a combination of adrenal scintigraphy and angiography. Adrenal scintigraphy was often useful also in diagnosing bilateral hyperplasia of adrenals.

But, when doctors read a borderline scintigram in which one-sided adrenal radioactivity is uncertainly dominant, some doctors may diagnose it as functioning tumor and some as normal. When 5 specialists of nuclear medicine read 100 adrenal scintigrams without any information, the result was 83% of truly positive and 16% of falsely positive on the average. Then, we measured ^{131}I adrenal uptake and R/L ratio to make reading of adrenal scintigram more objective and accurate.

^{131}I adrenal uptake ranged from 0.12 to 1.28% and averaged in $0.50 \pm 0.28\%$ in normal adrenals,

while it ranged from 0.60 to 2.52% ($1.36 \pm 0.51\%$) in 14 patients with primary aldosteronism and from 1.15 to 3.05% ($1.98 \pm 0.61\%$) in 6 patients with Cushing's syndrome. R/L ratio ranged from

0.95 to 1.60 in normal adrenals, while it was above 2.0 or below 0.9 in 18 adenomas of primary aldosteronism and Cushing's syndrome but 2 cases.