value in excluding pancreas diseases, but an abnormal scan is not pathognomonic of pancreas diseases. While, X ray computed tomography (CT) is relatively new development in radiological diagnosis, and its value about intracranial diseases is now firmly established on diagnosis and postoperative follow up examinations. But the role of CT about abdominal diseases, especially pancreas diseases is still in dispute. Then, we considered that comparison between CT and pancreas scintigraphy might be quite meaningful and useful.

In this study 50 patients were included who had both CT scan and pancreas scintigraphy within one month of each other. They were consisted of 10 normal pancreas, 18 pancreatitis, 14 pancreas tumor and 8 others.

CT scans were performed using the CTT whole body scanner (GE) and ACTA 200FS. The radioisotope examinations were performed using HITACHI whole body scanner and using ^{75}Selenomethionine in the dose of 250–300 μCi without premedication.

In normal pancreas, both procedures were equal in the determinations of the pancreas. In pancreatitis, both methods showed several findings, but CT was superior to pancreas scintigraphy in the determination of the pancreas. In addition, CT was the most accurate way to diagnose the exact locations of calcification, to distinguish pancreas stone from extrapancreas stone.

For the detections of pancreatic neoplasms, CT was more accurate than pancreas scintigraphy and besides, pseudocyst was correctly diagnosed as being cystic on the CT scan.

To detect extrapancreas tumor, CT was superior to pancreas scintigraphy. But, CT sometimes misdiagnosed extrapancreas tumor as pancreas tumor. In such cases, if the pancreas was normally delineated by pancreas scan, one could diagnose it as extrapancreatic mass.

CT and pancreas scintigraphy are two noninvasive procedures and they have both merits and demerits. However, radiation doses of two procedures are not insignificant and examination fee is quite high, so not every patient is allowed to have both examinations at a time.

From these comparisons, we came to conclusion that generally speaking, CT should be performed first, and in some selected cases pancreas scintigraphy should be added.

Radionuclide Tomographic Scan of the Liver

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Diagnostic value of a multiplane tomographic scanner (PHO/CON) was evaluated on subcjets with space-occupying lesions (S.O.L.) in the liver and intrahepatic bile ducts dilatation. (I.H.D.D.)

A total of 1,500 tomoscan of the liver has been performed throughout October 1977 since April 1976.

1. Diagnostic value of the tomoscan.

The ability of the tomographic scan to detect the S.O.L. was examined on 66 cases in whom S.O.L. was confirmed by autopsy, angiography, operation and laparoscopy. These materials consisted of 24 patients of hepatoma, 36 of metastasis, 2 abscesses and 4 cysts.

The tomoscan detected the S.O.L. in 59 (89%) of 66 patients. The size of S.O.L. in the 7 false negatives was less than 3 cm in diameter in all cases.

2. Correlation of the radionuclide tomoscan and the computed tomography.

Duplicate examinations by the radionuclide tomoscan and the computed tomography (CT, ACTA 0100) were performed on 71 patients; 31 patients were considered to have normal livers. Of leaving 40 patients, 13 had hepatoma, 18 metastasis, 6 cyst and 4 abscess. For comparing the ability of two modalities to detect the S.O.L., following numerical rating scales were employed; 0: negative, 1: equivocal, 2: definite SOL poorly demonstrated, 3: definite SOL well visualized, 4: definite SOL excellently resolved.

On the numerical scale overall rating was higher in the tomoscan than CT. In cases of hepatoma, metastasis and abscess, the tomoscan scored 3.5, 3.0 and 3.3, whilst CT scored 1.7, 1.5 and 1.0 res-

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 dilatation.

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 usefull 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-6β-iodomethyl-19-nor-5(10)-cholesten-3β-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 17α-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 truely 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,