

Symposium

Evaluation of Imaging Techniques Comparint with Scintigram

Hiroshi YASUKOCHI

Department of Radiology, Koshigaya City Hospital, Koshigaya, Saitama

Morphorogical diagnoses are mainly divided into two methods, that is direct and indirect ones. Direct techniques mean optical information just as histological, endoscopical or dermatological examinations.

The imaging techniques are involved in indirect one which includes X-ray, ultrasound, thermography and scintigram.

In this symposium, several typical imaging techniques are demonstrated comparing with scintigrams by experts.

For the diagnoses of patients, some physicians are tend to try them with a certain special technique which they are specialized and refuse to use other more comfortable and accurate techniques, and as a result, patients receive unreasonable and uncomfortable procedures physically and economically.

To reduce such nonsense uncomfortableness to patients, techniques should be selected or combined according to the reasonable diagnostic procedures on each patients.

Comparison Between Chest X-P and Lung Perfusion Scan

Yuko MURAKAMI

Department of Radiology, Koshigaya City Hospital

In 156 cases of lung perfusion scan, 56 cases showed abnormal scan findings for example perfusion defect, fissure sign, with normal chest X-P findings.

4 cases showed normal scan findings with abnormal chest X-P findings.

These perfusion defect and fissure sign were relative to CTR and diaphragm level.

As CTR decreased, as diaphragm level lowered, fissure sign and perfusion defect were increased.

Moreover, in the cases of abnormal large CTR or abnormal high diaphragm level, fissue sign and perfusion defect were increased, too.

If lung disease is suspected, both chest X-P and lung perfusion scan should be together investigated.

Chest X-P	Lung Perfusion scan	Cases*
Normal	Normal	61 (66)
Normal	Abnormal	56 (65)
Abnormal	Abnormal	35 (47)
Abnormal	Normal	4 (5)
Total		156 (183)

* Number of scans

Comparison Between Pancreas Scintigraphy and CT

Junichi NISHIKAWA, Yuji ITAI, Kikuo MACHIDA, Akira TASAKA

Faculty of Medicine, University of Tokyo

In the diagnosis of pancreas lesions, there are many radiological methods. Among them, pan-

creas scintigraphy has proved to be a useful screening test. A normal pancreas scan can be of great

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}Se -methionine 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

Kenji KAWAKAMI

Department of Radiology, Jikei University School of Medicine, Tokyo

Diagnostic value of a multiplane tomographic scanner (PHO/CON) was evaluated on subjects 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 3cm 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-