

I) Digestive Organ (GI Tract and Pancreas)

The Differentiation of Carcinoma of the Pancreas from Chronic Pancreatitis in Scintigraphy

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The specific patterns of the carcinoma of the pancreas were extracted in the previous report from analytical reviews of more than 100 pancreatic scintigrams. The localized defects in the pancreas images, faint or no visualizations of the pancreas were the signs of the carcinoma of the pancreas in X-rays, or by the pancreozymin secretin tests, were analyzed recently, and the variations from normal images of pancreas to faint or non-visualized pancreas were specified.

The pancreas images of 30 cases with carcinoma and 20 cases with chronic pancreatitis were schematized and compared in detail in this report. 1) apparent defect with normal shape and density in the rest part of the pancreas mostly suggests the carcinoma. This sign is frequently seen in the carcinoma of the body and/or tail of the pancreas. 2) Round spot of radioisotope accumulation in the region of head of the pan-

creas with no visualization of whole pancreas frequently suggests the carcinoma. This sign is common to the carcinoma of the head of the pancreas and is uncommon to the chronic pancreatitis. 3) Partial, faint, or no visualization of the whole pancreas suggests both carcinoma and chronic pancreatitis. This sign is common to the carcinoma in the head of the pancreas or in the whole pancreas, and the well established chronic pancreatitis accompanied by the calcification in the pancreas tissue and/or by the secondary induced diabetes mellitus. No differentiation between carcinoma and pancreatitis could be possible in such a case. 4) Faint but well outlined pancreas may suggest the chronic pancreatitis.

Not only for the screening test, the pancreatic scintigraphy could also be useful for the differentiation of the carcinoma with other pancreatic diseases.

The Clinical Significance of Pancreas Scintigraphy in Diagnosis of Pancreas disease

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Pancreas scintigraphy was performed in 659 cases during a period of 1966 to 1972. The cases subjected to study were 138 cases of pancreatic

diseases—pancreas cancer 65, chronic pancreatitis 64, pancreas cyst 7, benign pancreas tumour 4 and others— and 521 cases of non-

pancreatic diseases such as chronic hepatitis, liver cirrhosis, liver tumour, chronic gastritis, gastric cancer, cholecystopathy, retro-peritoneal tumour and others.

The visualization of pancreas in non-pancreatic diseases is 96.6%. The types of the pancreas is classified into 4 categories following observing 376 normal pancreas scintigrams: i) classic type 33.5% ii) club-shaped type 40.9% iii) reversed S type 13.9% iv) horseshoe type 11.9%.

64 cases of chronic pancreatitis show normal scintigram in 25 cases, non-visualization in 25

cases, defect in head in 9 cases, defect in body in one case and defect in tail in 4 cases.

28 cases of pancreas head cancer show defect in head in 25 and non-visualization in 3. 29 cases of pancreas body and tail cancer show defect in body and tail in 24 and non-visualization in 5.

The diagnostic reliability of scintigraphy compared to angiography is 80% by the former and 70% by the latter in pancreas head cancer. On the other hand, that of pancreas body and tail cancer is 86.7% in both.

Clinical Application of Scinticamera **Report IV. Comparison of Scintiphotography and Angiography** **for Pancreatic Carcinoma and Cyst**

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The comparison of scintiphotogram and angiogram was studied on 33 cases of pancreatic carcinoma and 4 cases of pancreatic cyst.

1. The scintiphotogram of pancreatic carcinoma was classified into six patterns regarding to the locus of the lesion.

Abnormal patterns were obtained in 31 of 33 cases of pancreatic carcinoma and in 3 of 4 cases of pancreatic cysts.

2 cases of false negative were found to have the region in the pancreatic head.

2. 17 cases of pancreatic carcinoma and 4 cases of pancreatic cysts underwent selective celiac

and superior mesenteric angiography.

The abnormal findings in angiogram were classified into 4 types, and their incidence was studied according to the locus of the lesion. Abnormal patterns were obtained in 15 of 17 cases of pancreatic carcinoma.

In 2 of 17 cases, false negative diagnosis were made.

In one case, the pancreatic body was involved and in another case, whole pancreatic tissue, respectively.

3. Three interesting cases were also represented.

Experimental Dynamic Study of the Accumulation Curves of **⁷²Se-Methionine in the Pancreas**

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Object: The aim of this study is to see the possibility of functional diagnosis by the aid of time-lapse accumulation curve of ⁷²Se-methionine

in the pancreas with computer processing data.

Methods: Immediately after intravenous injection of ⁷²Se-methionine, data are stored on