

min. after the injection of selenomethionine of 250 μ Ci.

Result:

- (1) Normal pancreatic configuration in 86 cases was pistol shape (32.5%), horseshoe shape (31.3%), high transverse shape (17.4%), sigmoid shape (10.4%), and dumbbell shape (8.0%).
- (2) Scintigraphically, pancreas image was overlapped with the hepatic image in 66 of 86

cases (76.8%).

- (3) Diagnostic category of pancreas scintigram was divided into 4 types by generalized reductions in uptake throughout the gland: Type I (severe), Type II (moderate), Type III (mild), Type IV (normal).
- (4) Ninety Percent (9 of 10 cases) of pancreas carcinoma was diagnosed as Type I, II, and 24% (3 of 12 cases) of chronic pancreatitis was also the same type.

The Scintigraphy of the Carcinoma of the Pancreas in the Radically Removed Cases

Y. KUNIASU, G. UCHIYAMA, H. KAKEHI and Y. MATSUURA

Department of Radiology

Y. TSUCHIYA, M. OHTO and K. OKUDA

*First Department of Internal Medicine,
Chiba University, School of Medicine, Chiba*

Several approaches are now available for detecting the pancreas tumors, such as the hypotonic duodenography, intravenous cholangiography, endoscopic pancreaticholangiography, angiography, and scintigraphy. But it usually happens to find far advanced and non-removable carcinomas of the pancreas even with these artful approaches.

The purpose of this report is to specify the scintigraphic features of the carcinoma of the pancreas which had been radically removed, and to evaluate the pancreas scintigraphy for detecting such early carcinomas.

Seven cases with the carcinomas of the pancreas which had been radically removed were reviewed. They consist of 3 carcinomas of the head of the pancreas, 2 carcinomas of the body and tail of the pancreas, and 2 carcinomas of the periampullary area of the pancreas. All of

these carcinomas were less than 5 cm in diameter. They were histologically adenocarcinomas except one case of the embryonal carcinoma. Their final diagnoses were principally obtained by the cholangiography. The scintigraphic findings of those cases were the limited defects in the pancreas, loss of sharpness of the pancreas outline, irregularly narrowing of the pancreas, and the complete loss of pancreas image. Among these findings, the limited defects in the pancreas and the complete loss of the pancreas images strongly suggest the presence of the carcinoma in the pancreas. The other findings, however, do not specifically suggest the carcinoma. They also suggest the chronic pancreatitis. In order to detect the carcinoma of the pancreas in early stage, therefore, one must suspect of presence of the carcinoma and go further investigation even though the scintigraphic findings indicate the

chronic pancreatitis.

The study suggests the usefulness of the pancreas scintigraphy as screening procedure in

detecting the carcinoma of the pancreas of removable stage.

Kinetic Studies of the Pancreas by Digital Computer Processing

M. MATSUO, T. MAEDA, Y. NAKANISHI and T. KATSURA

Department of Radiology, Kobe University School of Medicine, Kobe

Evaluation of the pancreatic function is important for the diagnosis and was performed in this study.

The Uptake curve of ^{75}Se -Selenomethionine for the pancreas is studied through 75 patients, including 10 cases with normal pancreases, 9 with histologically confirmed pancreas carcinoma, 40 with pancreatitis and 4 with gall stone in the common bile duct.

Cases with pancreatitis were divided into three groups for convenience. Group 1 is consisted of the chronic pancreatitis, based on the criteria by the Committee of the pancreatic diseases. Group 2 includes acute, relapsing or chronic pancreatitis which marked high level of serum or urine amylase and was diagnosed from signs and symptoms clinically. Group 3 is the clinically diagnosed pancreatitis.

50 μCi of ^{198}Au -colloid was injected intravenously without premedication. More than 30 minutes after the Au-colloid injection, 250 μCi of ^{75}Se -Selenomethionine was injected intravenously.

Information from the γ -camera, with the detector inclined at 15 degrees and fitted with a 1000 holes collimator, was recorded on the

videotape as digitalized memory.

The Uptake curve in the Region of Interest on the pancreas head, body and tail was represented as the histogram with the accumulation coefficient (Kc).

In case of group 1 and group 2 pancreatitis and also in case of gall stone in the common bile duct, the Kc value showed an apparent low level compared with normal cases, and that was approved statistically.

In case of pancreas carcinoma, low level of the Kc values was noticed on the region where carcinomatous change directly invaded, and however a moderately low number of Kc values were noted in other portions.

Computer processing was performed for each Uptake curve by digital computer, that is, each Uptake curve was processed by Low Pass Filters with various transfer functions.

The following was concluded;

- 1) The Kc value was proved to be a useful indicator of pancreatic function.
- 2) Calculating the Kc values or other indicators from the outputs of the Low Pass Filter is more objective and is the one step to the computer diagnosis.