M. Digestive Tracts
GI Tract and Pancreas

Usefulness of Subtraction Scintigraphy of the Pancreas

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It is common to use $^{75}$Se-selenomethionine in scintigraphy of the pancreas; however, the scintigram of the pancreas superimposed over that of the liver makes the morphologic diagnosis of the pancreas infeasible in some cases. In such cases, we have performed subtraction scintigraphy with the Nuclear Chicago models PHO-GAMMA III 6403, CDS-4096 and Data Store/Playback accessory 3122, by injecting 200 $\mu$Ci of $^{75}$Se-selenomethionine and 3 mCi of $^{99m}$Tc-phytate.

Of the 259 cases where we have performed scintigraphy of the pancreas, it was in 36 (accounting for 13.9% of cases) that the scintigram of the pancreas superimposed over that of the liver made the morphologic observation of the pancreas infeasible, and it was in 15 (5.8%) that the scintigram of the pancreas could not be demonstrated even by the use of the aforementioned two nuclides.

Subtraction scintigraphy was performed in the 36 cases where the scintigram of the pancreas was superimposed over that of the liver, and in 31 of them (accounting for 87% of the 36 cases), the morphologic observation of the pancreas became feasible, which disclosed the presence of morphologic abnormalities of the pancreas in five of them. It was further observed that in one of the five cases there were cold areas in the body and tail of the pancreas, which were intraoperatively defined as attributable to the presence of tumors.

In the $5 \times 5$ mm matrices, the image-constituting elements become sparse, but subtraction scintigraphy of the pancreas proved useful for morphologic diagnosis.

It appears, however, that if the matrices are further diminished, it will prove more useful.

Clinical Evaluation of Pancreas Scintigraphy in Diagnosis of Pancreatic Diseases

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The cases studied are 538 cases of non-pancreatic diseases, and 276 cases of pancreatic diseases.

The imaging rate of normal pancreas is about 90.0%. Twenty-five cases of 64 chronic pancreatitis are normally imaged the entire pancreas, but 25 cases are not imaged entirely. Most cases with calcification in the pancreas are not imaged entirely. Thirteen cases of pancreatic cyst demonstrate the defect in the corresponding region. Thirty-seven cases of 45 pancreas head cancer demonstrate the defect in the corresponding region and 8 cases are not imaged entirely. Twenty-seven cases of 32 pancreas body and tail cancer demonstrate the defect in the corresponding region and 6 cases are not visualized entirely. Five cases of 7 papilla Vateri cancer demonstrate the normal pancreas. The rate of correct diagnosis are 82.2% in the head, 84.4% in the body and tail, and 71.4% in the papilla Vateri.

The diagnostic reliability of the pancreas scintigraphy in cancer of pancreas is compared to that of pancreas angiography. In the pancreas head cancer, the diagnostic reliability of angiography is 70.0% and that of scintigraphy is 80.0%. In the pancreas body and tail cancer, the diagnostic reliability of angiography is 86.7% and is equal.