

VISUALIZATION OF PANCREATIC PSEUDOCYST

Adel G. Mattar and Joseph A. Prezio

Mercy Hospital and SUNY/B, Buffalo, New York

In a 44-year-old woman, a pancreatic pseudocyst was demonstrated on delayed images obtained up to 8 days after the intravenous administration of 0.250 mCi ⁷⁵Se-selenomethionine. The initial routine pancreas image study failed to visualize both the pancreas and the pancreatic pseudocyst. The diagnosis was confirmed at surgery and the fluid of the pancreatic pseudocyst contained 0.73% of the injected dose of the radioselenium.

Melmed and associates (1) have observed pancreatic pseudocysts as areas of increased radioactivity overlying the body and tail of the pancreas. Others, however, have reported that the pseudocyst is associated with either a cold area (2) or an almost complete absence of pancreas visualization on the scan (3). This case is presented to show that a pancreatic pseudocyst can be demonstrated on delayed images if there is initial failure of visualization on the routine study.

CASE REPORT

A 44-year-old white woman was admitted to the hospital after the discovery of diabetes mellitus and a large, tender, and ill-defined epigastric mass. For the preceding 3 months following an automobile accident, she had been passing frequent, soft, and bulky stools.

Laboratory tests proved the presence of moderately severe diabetes mellitus. Plain x-ray examination of the abdomen showed no abnormalities. A barium meal revealed the presence of an extrinsic mass pressing on the posterior aspect of the midportion of the stomach and widening of the duodenal sweep as well as inferior displacement of its transverse limb. A barium enema showed depression of the transverse colon.

A pancreas image study was requested. Immediately after the i.v. administration of 0.250 mCi ⁷⁵Se-

selenomethionine, five sequential 10-min anterior images were obtained with the scintillation camera. These images failed to visualize the pancreas and no accumulation of the radioactive material was seen in the region of the epigastric mass (Fig. 1A).

Anticipating that perhaps slow accumulation of the radionuclide into a pancreatic pseudocyst, if present, might be demonstrable, it was decided to obtain delayed images of the upper abdomen utilizing the same injection.

Images were obtained 24 hr (Fig. 1B), 48 hr (Fig. 1C), and 8 days (Fig. 1D) after the initial pancreas image study. These images clearly delineated definite accumulation of radioactivity into a well-circumscribed large area in the subhepatic space. This was best seen on the image obtained at 48 hr (Fig. 1C).

The results of the delayed images were considered to represent slow accumulation of the ⁷⁵Se-selenomethionine into either a pancreatic pseudocyst or an epigastric neoplasm.

At laparotomy, which was carried out 10 days after the initial injection, the presence of a large

Received July 17, 1974; original accepted Nov. 18, 1974.
For reprints contact: Joseph A. Prezio, Dept. of Nuclear Medicine, Mercy Hospital, 565 Abbott Rd., Buffalo, N.Y. 14220.

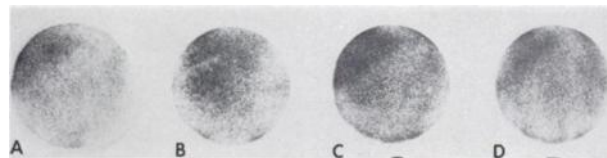


FIG. 1. (A) Scan obtained during routine pancreas image study shows no visualization of pancreas or pancreatic pseudocyst. Scans obtained 24 hr (B), 48 hr (C), and 8 days (D) following injection show accumulation of radioseelenium in pancreatic pseudocyst in subhepatic space. Changes in apparent configuration of cyst were due to variation in positioning of patient since she was on her back in somewhat oblique position, i.e., imaging angle was slightly different each time.

pancreatic pseudocyst in the lesser sac of the peritoneum was confirmed. This contained 1,300 ml of viscid, chocolate-colored fluid. After counting the radioactivity, 0.73% of the injected dose was accounted for in the total volume.

DISCUSSION

It is postulated that perhaps the slow accumulation of the tracer by the pancreas due to the associated pancreatitis and subsequent slow leakage of the labeled pancreatic enzymes into the pancreatic pseudo-

cyst may explain the early failure and delayed success of visualization in this case.

REFERENCES

1. MELMED RN, AGNEW JE, BOUCHER IAD: The normal and abnormal pancreatic scan. *Q J Med* 37: 607-624, 1968
2. HAYNIE TP, SVOBODA AC, ZUIDEMA GD: Diagnosis of pancreatic disease by photoscanning. *J Nucl Med* 5: 90-94, 1964
3. HATCHETTE JB, SHULER SE, MURISON PJ: Scintiphotos of the pancreas, analysis of 134 studies. *J Nucl Med* 13: 51-57, 1972