124. PANCREOZYMIN-SECRETIN TEST AND FUNCTION OF BILIARY TRACT

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Although pancreozymin-secretin test is a reliable examination of pancreatic exocrine function, pancreatic juice, bile and intestinal juice, secreted from the intestinal wall, are mixed in duodenal juice taken by this measure, and it is impossible at present to obtain pure pancreatic juice. The authors utilized this disadvantageous phenomenon of bile contamination in this method for differential diagnosis of the diseases in the biliary tract and pancreas, by multifying icterus index of duodenal juice by its volume and observing fluctuation of bile excretion. Bile excretion was the maximum for 10 minutes after injection of pancreozymin in normal men, and bicarbonate salt was most remarkably excreted for 10 to 20 minutes after injection of secretin. In most cases of chronic pancreatitis, decrease in bile excretion could be observed, while in cases of carcinoma in the biliary tract or in the head of the pancreas bile excretion was scarcely observed. Decrease in secretory function of bicarbonate salt was slight in cases of carcinoma in the biliary tract, whereas in cases of carcinoma in the head of the pancreas excretion of bicarbonate salt could not be observed at all. Fluctuation of bile excretion in cases deprived of function of the gall-bladder was characteristic, and bile excretion slightly increased after injection of pancreozymin, which was maintained in that level for long thereafter.

In order to clarify qualitative and quantitative relationship in pancreatic juice, bile and intestinal juice after injection of pancreozymin and secretin, a vinyl tube was inserted into the pancreatic duct and common bile duct in mongrel dog and pancreatic juice and bile was respectively collected. The same procedure was performed in two cases of cholelithiasis. From these experiment, it was assumed that secretion of pancreatic juice is stimulated by injection of pancreozymin to some extent, and intestinal juice is secreted more than 20 cc for 10 minutes after injection of secretin, considerable amount of bicarbonate salt being contained in bile, and it was further concluded that constitution of pancreatic juice, bile and intestinal juice in duodenal juice obtained in this examination is a complicated one.

125. ULTRASONIC DIAGNOSIS OF HEPATOBILIARY DISORDERS (II) ANALYSIS OF THE INFLUENCE OF HEPATIC FIBROSIS ON THE ULTRASONOGRAM OF THE LIVER

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Ultrasonic diagnosis of biliary disorder has been performed by using the A-scope method, directly and/or indirectly, in 241 cases and the result was similar with those previously described ones by the authors[1].

The ultrasonography of the liver, attempted in 203 cases of the liver diseases with histologically confirmed diagnosis, showed a normal pattern in 80.5% of the cases with acute hepatitis; fibrotic echo in 76.7% of those with chronic hepatitis; cirrhotic echo in 74.1% of those with liver cirrhosis, and malignant echo in 46.2% of those with liver cancer. The advantage of the application of the A-scope method was found in those cases with diffuse involvement.

Several factors have influence on the ultrasonogram of the liver. In this study, the factor of fibrosis was observed. Hepatic fibrosis was classified, by the findings of the stained specimen

using Azan method, Van Gieson's method, etc., in 3 groups from regional aspect and in 5 grades from the view point of disease intensity. The grades of hepatic fibrosis of the portal area, the intralobular area, and the perilobular area were investigated respectively.

As a result, it was found that the fibrotic change in the intralobular and/or the perilobular area might be a predominant factor in producing fibrotic echo. However, fibrotic echo could also be developed by the initial fibrotic change in the portal area alone. All cases with the liver cirrhosis of grades 4 and 5 showed cirrhotic echo, whereas the cases with the liver fibrosis of grades 2 and 3 revealed either the cirrhotic echo or the fibrotic echo. The latter phenomenon was examined by the additional staining of acid mucopolysaccharides and the silver impregnation method, and only in significant conclusions were obtained.

The relationship between the laparoscopic finding of the liver surface and the direct ultrasonography by using laparoscopic transducer (5 MC) was studied and a significant difference of the echogram was found among the various types of granular surfaces of the liver.

126. THE DESTRUCTION OF BILIARY CALCULI BY INTENSE ULTRASONIC IRRADIATION

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In the previous paper, we reported on the destruction of removed biliary calculi by intense ultrasonic irradiation using contact method and in this paper we will report the destruction of calculi using immersed irradiation.

Pure pigment, pigment calcium and pure cholesterin calculi were selected and they were immersed into the distilled water or 5% sodium hexametaphosphate and irradiated by intense ultrasound, which frequency was 20 to 1,000 kilocycles per second and electric output was 100 to 200 watts.

The effects were studied on the change of the surface or the decrease of weight of calculi which were irradiated ultrasound and on the other hand the colour or turbidity of the fluid in which calculi were immersed.

Pure pigment calculi could be more easily destroyed than pigment calcium one, however pure cholesterin calculi seemed to be hardly destroyed.

It was investigated by the stereo-microscopy that the destruction degree was due to the structual problem of gallstone.

This experiment is not so capable as yet of practical use in the disruption of biliary calculi that the further studies will be expected.

The results of this experiments seems to show the feature application of ultrasonic method to the clinical treatment of biliary calculi.

127. AN EVALUATED RESULT OF BENIGN BILIARY TRACT SURGERY

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408 cases of non-malignant disease exceeding more than six months following biliary tract surgery have been reviewed by our institution, and 29 cases (7.1%) of various sequelae are found among them. No significant difference of the incidence of post-cholecystectomy syndrome was demonstrated between 154 cases of cholecystolithiasis with functionning gallbladder and 150 cases of cholecystolithiasis with non-functionning gallbladder.

The good result was obtained by cholecystectomy for 8 cases of cystic duct syndrome. Among 366 cases of cholelithiasis, the result of 62 cases of choledocholithiasis was inferior to those cases of cholecystolithiasis, furthermore, the comparative study of chemical composition of