On the contrary, in group 2, reduction ratio showed 81.4 per cent, as 5.3 ml compared with 28.2 ml. In group 1, the mean 5-hour maximal acid concentration was 75.1 mEq/L postoperatively compared with 112.1 mEq/L preoperatively. In group 2, the mean value was 32.9 mEq/L compared with 113.5 mEq/L. In group 1, the mean 5-hour acid output was 0.91 mEq postoperatively in comparison with 3.23 mEq preoperatively, and was significantly reduced by 71.1 per cent. Similarly, in group 2, the mean 5-hour acid output was reduced by 96.3 per cent, as 0.12 mEq compared with 3.24 mEq.

However, in one out of 3 dogs in group 1, when the retention of gastric contents were observed radiographically at 3 to 4 weeks after operation, gastric acid secretory response to meal was not markedly reduced in both maximal acid concentration and acid output.

The results obtained are summarized as follows: Follow-up results of segmental gastrectomy and pylorus-preserving gastrectomy on gastric acid secretion was exceedingly satisfactory in reduction of both acid concentration and acid output. Moreover, in no case was there a recurrent ulcer. However, the results obtained in the present experiment suggest that the retained antrum, even if about a 1.5 cm rim of the antrum from pyloric ring, should be taken into account as a gastrin releasing origin when the retention of gastric contents was recognized.

References

Symposium (II): Clinical Problems Interdependent between the Gallbladder and the Pancreas

(1) THE ACTUAL STATUS OF PANCREATIC IMPAIRMENTS ASSOCIATED WITH BILIARY TRACT DISEASE

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The endoscopic pancreatographic examination has revealed that various abnormal changes such as dilatation and irregularity of the duct of Wirsung and tortuosity and cyst-like dilatation of branches of main pancreatic duct are found on the pancreatograms of the patients with biliary tract disease, marked changes in 10.1 per cent and slight changes in 42.7 per cent of 98 patients with biliary tract disease. The pancreozymin secretin tests have also revealed that intense exocrine pancreatic disorder in 12.0 per cent and mild disorder in 43.5 per cent of 117 patients with biliary tract disease. Accordingly, incidence of correlation between biliary tract disease and pancreas may consider to be approximately 50 per cent of the patients with biliary tract disease.

The dull epigastric pain, abdominal fullness, borgorygmus, much flatus, and abnormal bowel movement are the leading postoperative complaints seen in the patients with postcholecystectomy syndrome. The end-result of surgically treated biliary tract disease without exocrine pancreatic disorder is excellent in 91.1 per cent of the patients, while it is excellent in only 56.2 per cent of the patients with postoperatively persisted exocrine pancreatic disorder.

Electron microscopic examination of acinar cell of the pancreas has revealed that various abnormal changes such as irregularly arranged and vacuolized rough surfaced endoplasmic reticulum, swollen mitochondria...
with obscure plasma membrane, a number of lipid droplets with lysosome, and shortened diameter of zymogen granules are frequently seen in the acinar cells of the pancreas obtained from the patients with highly disordered exocrine pancreatic function. Quantity of zymogen in unit volume of cytoplasma of the acinar cell statistically calculated well correlates with the amylase output in pancreozymin secretin test. Results of radioiodine-labelled triolein test also well correlate to the results of pancreozymin secretin test. Accordingly, it might be assumed that the postoperatively persisted exocrine pancreatic disorder could be one of the etiologic factors for postoperative biliary distress.

Since Tsuru (1973) has postulated that the exocrine pancreatic disorder preoperatively accompanied by biliary tract disease easily subsides during postoperative course but obstinately persists in 18.6 per cent of the patients with preoperative pancreatic disorder (10.3 per cent of total patients with biliary tract disease), the incidence, characteristics, and clinical significances of gallstone pancreatitis might be assumed as follows: The pancreatic disorders are associated with the biliary tract disease in 55.5 per cent of the patients; that is a chronic pancreopathy in 46.9 per cent, a functional chronic pancreatitis in 4.3 per cent, and a histological chronic pancreatitis in 4.3 per cent of the patients with biliary tract disease. Most of the chronic pancreopathy may readily subside within 3 postoperative year and persist for more than 3 years following surgery in only 1.7 per cent, in which 0.2 per cent of the total patients with biliary tract disease suffers from abdominal discomfort due to exocrine pancreatic disorder. The functional chronic pancreatitis persists until 3 postoperative year with abdominal discomfort in 2.6 per cent of the total patients with biliary tract disease. Although these exocrine pancreatic disorders in patients with persisted chronic pancreopathy and functional chronic pancreatitis may potentially be curable, the histological chronic pancreatitis could never be restored and might permanently give rise to vague abdominal discomfort in 1.7 per cent of the total patients with biliary tract disease.

References

(2) CLINICAL EVALUATION OF BILIARY TRACT DISORDER IN PANCREATIC DISEASE
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The pancreatic disorders often occur as a complication of biliary tract disease. The purpose of the present study was to evaluate the biliary tract disorders in a variety of pancreatic diseases. Three hundred and seventy seven patients with pancreatic disease consisted of 49 cases of acute pancreatitis, 149 chronic pancreatitis the diagnosis of which was done according to the criteria published by Japanese Association for Pancreas Disease, 87 suspected pancreatitis with abdominal pain and hyperamylasuria and/or hyperamylasemia, and 92 pancreatic cancer.

The incidence of cholecysto- or choledocholithiasis was 14% for the patients with acute pancreatitis, 38% for chronic pancreatitis including 5% for pancreatolithiasis, and 2% for pancreatic cancer. Hyperbilirubinemia above 2.0 mg/dl was found in 44% of the patients with acute pancreatitis and that above 1.0 mg/dl was seen in 65% of those patients. In general, the degree and duration of hyperbilirubinemia paralleled the clinical severity of acute pancreatitis. The incidence of jaundice in acute pancreatitis was not different whether the patients had gallstones or not. Seventeen per cent of the patients with pancreatolithiasis showed hyperbilirubinemia above 1.0 mg/dl. The duration was short and the elevation was slight in most