

A Study of Preoperative and Postoperative Radioisotope Hepatograms in Choledocholithiasis

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Liver scintigrams and hepatograms with ^{131}I -BSP and $^{99\text{m}}\text{Tc}$ -phytate have been taken, and classed by the IDS classification, in preoperative and postoperative diagnoses of the cases of choledocholithiasis, and used as adjuvant diagnosis of biliary diseases. The IDS classification comprises five types, types I to V, with type I denoting the normal outflow type; type II, the delayed outflow type; type III, the deformed outflow type; type IV, the non-outflow type, and type V, the deformed, non-outflow type. This classification and analysis were reported before previous meetings of the Japanese Society of Nuclear Medicine and the Nippon Societas Radiologica. In the present study, the preoperative IDS findings, histologic findings of liver specimens collected intraoperatively, and postoperative IDS findings were examined in 20 cases of choledocholithiasis. Preoperatively, IDS types III to IV accounted for not less than 30% of cases of choledocholithiasis, while these types were infrequent in the cases of cholecystolithiasis. The pathologic examination of liver specimens collected intraoperatively disclosed striking pathologic changes such as the presence of bile thrombi, compared with those in the cases of cholecystolithiasis. The postoperative blood biochemical liver function tests were markedly improved as the operation proved successful, which was likewise reflected by the IDS findings, with the IDS types improved to type I or II in many cases.

The IDS findings one to two years after operation in the cases with insertion of the T-shape tube have been improved to types I to II in all cases. The data obtained by transvenous cholangiography after cholecystectomy have to necessarily been satisfactory, but sequential scintigraphy with ^{131}I -BSP and analysis of the data have proved very useful. The high-speed, sequential photographing of the time course of radioisotope hepatogram with the rapid sequential camera-100 (RSC-100) that has lately been developed has made the accurate observation of the liver function and its excretory behavior possible. A further improvement in its resolving power may be considered to permit the catching and demonstration of the excretory behavior of the biliary system which is comparable to that with a common radiopaque medium for cholangiography, and we plan to present the findings in some cases.

An external fistula with the T-shaped tube is intraoperatively provided in almost all cases of choledocholithiasis, and the postoperative examination has been made by the use of a radiopaque medium. However, even today there is no safe and rapid method of examination after extraction of the T-shaped tube. Considering that radioisotope hepatography and the use of the RSC-100 will prove useful in supplementing the examinations in this field, we are making a further study of them in clinical cases.

Study on Organic Anions Transport Mechanism Using Isolated Liver Surface Membranes

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The purpose of this study is to elucidate the mechanism of liver membrane transport of dyes which has specific affinity to this organ.

Plasma membrane was isolated from rat liver by

differential centrifugation. Then the ability of plasma membrane to bind ^{35}S -BSP or ^{131}I -BSP was investigated in the presence of serum protein.

Results obtained were as follows: