

entire lumen is full of stones. And, as generally believed, almost all cholesterol stones in the common duct were inferred to originate in the gallbladder. There is a marked increase in these biliary tract complications with advancing age. It is observed that bleeding during operation increases as the histopathological changes of gallbladder advance. To prevent the unfortunate postoperative jaundice, unnecessary transfusions should be avoided as possible.

436 patients were followed up with the use of questionnaires. The total percentage followed up amounted to 78.4%. The results were subjected to chi-square analysis. A difference was regarded as significant if the statistic test exceeded  $\chi^2$  0.95 for the difference in question.

Patients with mild pain or without pain preoperatively had no significantly higher postcholecystectomy distress than those with severe pain.

Patients with a functioning gallbladder on cholecystography had no significantly higher distress than those with a nonfunctioning one.

Patients cholecystectomized in earlier age had no significantly higher distress than those operated upon later.

Early elective removal of the gallbladder was found to be indicated in all stone patients, even though asymptomatic, who are reasonably good surgical risks.

#### 4. DIAGNOSTIC SIGNIFICANCE OF DIRECT CHOLECYSTOGRAPHY IN CASES OF IMPOSSIBILITY OF CHOLECYSTOGRAPHY

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The Impossibility of cholecystography is the most frequent phenomenon in clinical practice. On the cause and diagnostic techniques of this phenomenon, we have already been reported at this society. This present study deal with diagnostic significance of direct cholecystography performed under laparoscopy in cases of the impossibility of cholecystography.

Our study was conducted on 62 subjects who were admitted to our hospital during the period from January, 1966 to August, 1967 and in whom failed to visualize the gallbladder using of oral and intravenous cholecystography. The direct cholecystography were attempted in 30 subjects and were successful in 23 subjects.

The 20 subjects included in this study were selected from other group undergoing diagnostic direct cholecystography for evaluation of cholelithiasis. The 5 subjects were demonstrated the stones within confines of the common bile duct, one with carcinoma of common bile duct had in the gallbladder, 7 had in the cystic duct, 4 had the numerous stones in the gallbladder. While the other 3 subjects who were not successful of direct cholecystography were demonstrated surgically the stones in the cystic duct with atrophic gallbladder.

From these data, it was clarified that the direct cholecystography is a safe, reliable and very usefhl technique for establishing the diagnosis in cases of the impossibility of cholecystography, in addition to determining the surgical indication.

#### 5. STUDIES ABOUT ROENTGENOGRAPHIC METHODS

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In our recent roentgenographic studies of gallbladder, the contrast medium was first given by the oral method, and the intravenous method was combined for what could not be diagnosed by it. When the both methods failed, massive intravenous instillation was consecutively made. When necessary, roentgenogram was taken between 30 to 120 minutes after administration of egg-yolk. Sectional roentgenography was also occasionally used. Results in diagnosis of cholelithiasis by these methods are summarized below.

Examinations were made in 48 outpatients who visited this department for the past two

years, and were suspected to have cholelithiasis. The oral administration of Telepaque was first performed to all these cases. Good relief roentgenograms of gallbladder were obtained in 36 cases, and in 2 cases of them cholecystolithiasis was identified. To 12 cases whose relief roentgenograms were perfectly invisible or were unsatisfactory after oral administration, intravenous injection of 20 cc of 50 Biligrafin was performed. By this pretreatment, good relief roentgenograms were obtained in 5 cases and in 4 of them cholecystolithiasis was identified.

Massive intravenous instillation of 300 cc of 5% glucose solution with 60 cc of 50% Biligrafin was consecutively performed to 7 cases of perfectly invisible or unsatisfactory relief roentgenogram. Good relief roentgenograms were obtained in 5, and each 1 case of cholecystolithiasis and of choledocholithiasis were discovered. In 2 patients in whom, visualization did not succeed by massive intravenous instillation, the operation disclosed the presence of a thumb-sized stone at the neck of gallbladder, and the complete closing this part.

Sectional roentgenography is effective for the diagnosis of cholelithiasis. Not only cholecystolithiasis but 2 choledocholithiasis were identified by it. Types and numbers as well as places of stones could be presumed to some extent by it.

Roentgenography at 30 to 120 minutes after administration of egg-yolk was also effective for diagnosis of cholelithiasis, because gallbladder was contracted by egg-yolk administration and relatively small stones invisible by general roentgenography were clearly shown in 3 cases.

In 3 of 4 cases of cholelithiasis with inflammatory condition, invisible stones were relatively clearly visualized as inflammations were alleviated by antibiotics and cholagogue administration.

Up to the present no remarkable side effects have been produced by massive intravenous instillation, though the number of cases is not yet great.

From these results, easy oral administration should be first performed for roentgenologic diagnosis of cholelithiasis. Immediate intravenous injection turned out to be effective in invisible cases and massive intravenous instillation to be effective when visualization is unsatisfactory. These examinations will be most effective when they are performed consecutively within a day in the above mentioned order. Diagnostic effects were also found in occasional sectional roentgenography and roentgenography after contraction of gallbladder by egg-yolk administration.

## 6. PROGNOSIS OF GALLBLADDERSTONE WITHOUT SYMPTOMS IN MASS SURVEY, PHYSICAL EXAMINATION OF OLD AGE AND PATHOLOGICAL AUTOPSY, AND SURGICAL INDICATION ON SYMPTOMLESS GALLSTONE CONSIDERING GALLBLADDER CANCER

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The above stated problems are discussed as follows.

### (1) Frequency in a patient with gallstone

The peoples over fifty years old who are suffering from gallstone with or without symptoms are investigated. Men 2.8% and women 7.1% in the mass survey, men 9.9% and women 18.2% in the physical examination of old age, men 3.1% and women 5.7% in the pathological autopsy are acquired.

### (2) Prognosis of a patient with silent stone observed in the physical examination of old age.

The patients in 36 cases of men and 8 cases of women who have gallstone do not show any changes and symptoms of gallstone for over five years except one woman. Silent stone in the old age is seemed to be usually innocent for a long period.

### (3) Death causes of a patient with gallstone

The death causes are inquired from the Annual of the Pathological Autopsy Cases in Japan (1965).

The death from the biliary duct stone is as high as 77.8% in the under fifty years old and 48.4% in the over fifty years old, while the death from the gallbladder stone is each 15.3% and