นิพนธ์ต้นฉบับ

Choledocholithiasis : An 8 year experience at Chulalongkorn Hospital

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This is a retrospective study from 1981-1988. The medical records of 277 cases from 297 cases with the diagnosis of choledocholithiasis were analysed. The average age of male patients was 56.8 years, and female 59.1 years. The most common presenting symptom was abdominal pain. Jaundice was found in only 60%. Ultrasonography was the most popular special investigation. The diagnosis could be made before operation in only 57%. E. Coil and Enterobacter were the most common organisms grown from bile culture. Cholecystectomy, with exploratory CBD, and T-tube insertion was the most commonly performed operation.

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ผู้รายงานได้ทำการศึกษาย้อนหลังในผู้ป่วยที่ได้รับการวินิจฉัยว่า มีนิ่วในท่อทางเดินน้ำดีที่เข้ามารับการรักษาในโรงพยาบาลจุฬาลงกรณ์ ตั้งแต่ปี พ.ศ. 2523-2531 รวมระยะเวลา 8 ปี พบว่ามีผู้ป่วยที่นำมาวิเคราะห์ได้จำนวน 277 จาก 297 ราย อายุเฉลี่ยของผู้ป่วยชายเท่ากับ 56.8 ปี และหญิง 59.1 ปี อาการสำคัญที่นำผู้ป่วยมาพบแพทย์ ได้แก่ ปวดท้อง ตรวจพบภาวะดีซ่านจากการตรวจร่างกายและการตรวจทางห้องปฏิบัติการเพียง 60% ของผู้ป่วยทั้งหมด การตรวจวิเคราะห์ที่ทำให้วินิจฉัยภาวะนิ่วในท่อทางเดินน้ำดีได้มากที่สุด ได้แก่ การตรวจด้วยคลื่นเสียงความถี่สูง ตรวจพบได้ 109 ราย ทั้งนี้เป็นการวินิจฉัยได้ก่อนผ่าตัดเพียง 158 ราย หรือประมาณ 57% ผลการเพาะเชื้อในน้ำดีซึ่งทำในผู้ป่วย 127 ราย แสดงให้เห็นว่า เชื้อที่พบบ่อย ได้แก่ Escherichea Coli และ Enterobacter การรักษาที่ทำมากที่สุด ได้แก่ การสำรวจท่อน้ำดีเพื่อเอานิ่วออกร่วมกับการใส่ท่อ T-tube (177 ราย) ในระยะ 3 ปีหลังมีผู้ป่วยที่ได้รับการทำ choledochoscopy ระหว่างผ่าตัดเพื่อการวินิจฉัยและหลังผ่าตัดเพื่อเอานิ่วที่ค้างอยู่หลังผ่าตัดออก จำนวน 22 ราย และมีผู้ป่วยที่ได้รับการรักษาเอานิ่วออกแบบไม่ผ่าตัดโดยวิธี endoscopic sphincterotomy จำนวน 10 ราย

Choledocholithiasis is still an important problem in general surgery, with increasing incidence every year. The incidence of the disease, the character of the stones and other basic data differ from reports from western countries. The investigation techniques and choices of treatment have improved greatly especially during the last 10 years. The objective of this report is to study the incidence, clinical behavior, methods of diagnosis and treatment of Choledocholithiasis in Thai patients at Chulalongkorn hospital.

Material and Method

The study was performed by analysing the medical records of patients admitted to the department of surgery, Chulalongkorn hospital with the diagnosis of Choledocholithiasis from 1981 to 1988 (8 years). Altogether there were 277 medical records which could be analysed from 297 cases.

Results

Of the 277 patients, there were 151 women and 126 men, so the ratio of female to male was 1.2 : 1 Age range of female patients ; 16-94 Yr. (average 59.1 Yr.), age range of male patients : 19-81 Yr. (average 56.8 Yr.)

Approximately one-third of the patients had a single stone and almost one-third had multiple stones.

Table 1. Number of CBD. stones.

Number of stones	Number	%
Single	99	35.7
>1, countable	52	18.8
Multiple	79	28.5
No record	43	15.5
Not found	4	1.5

12 patients with common bile duct stones had an underlying haemolytic disorder. All of them were under 30 years of age.

31 patients with common bile duct stones also had intrahepatic duct stones. This accounted for 11.2% of all cases of Choledocholithiasis.

The 3 most common (presenting) symptoms which brought the patients to the hospital were abdominal pain (36.1%), cholangitis (32.9%) and jaundice (30.3%)

Table 2. Presenting problems.

Problem	Number	%
Abdominal pain	100	36.1
Cholangitis	91	32.9
Obstructive jaundice	84	30.3
Cholecystitis	38	13.7
Retained stone	24	8.7
Pancreatitis	10	3.6
Perforation of gall bladder	5	1.8
Empyema gall bladder	4	1.4

Almost half of the patients (39.7%) had no jaundice (total bilirubin <2 mg %) and most of those patients with jaundice, had only mild to moderated elevation of total bilirubin level (2-10 mg %) (Table 3).

Table 3. Total bilirubin level.

TB (mg %)	Number	%
<2	110	39.7
2-10	115	41.5
>10	52	18.8

Only 61 patients (22%) had elevated serum alkaline phosphatase.

Abdominal Ultrasonography was the most popular special investigation performed. Of 213 patients, CBD. Stones were found in 109 patients (51.2%). Percutaneous transhepatic Cholangiography and endoscopic retrograde cholangiopancreatography (Table 4.) both gave higher positive results for detection of CBD stones (83.3% and 77.3% respectively).

Table 4. Investigations and % true positive result.

Investigation	Number	True positive	%
Ultrasound	213	109	51.2
ERCP	22	17	77.3
PTC	18	15	83.3
OC	8	2	25
IVC	6	1	16.7

Plain X-ray of the abdomen was done in 44 cases and revealed opaque stones in 18 (40.9%)

About the size of common bile duct, we found that 9% (25 cases) had normal sized CBD. and about 44% (123 cases) had CBD. diameter of more than 1.5 cm.

From all the preoperative investigations done, we conclude that we could make the diagnosis of choledocholithiasis before operation in only 57% (158 cases).

At operation, these were 69 intra-operative cholangiogram (IOC) prior to exploring the duct (24.9%). The surgeons had different indications for IOC and some did it routinely.

Bile culture from 127 cases, revealed organisms in 80 cases (63%). 24 cases (18.9%) had more than 1 species. The common aerobic organisms were E. coli, Enterobacter, Pseudomonas and Klebsiella. Clostridium was the most common anaerobic organism.

63.9% of the patients had Cholecystectomy, exploratory CBD., stone removal and T-tube insertion.

23.1% also had a drainage procedure such as Choledochojejunostomy, sphincterotomy, choledochoduodenostomy or hepaticojejunostomy.

The stones in 22 cases were removed by Choledochoscope and the other 10 cases by endoscopic sphincterotomy.

Discussion

Choledocholithiasis and Cholelithiasis are two common problems in general surgery. The incidence in Thai population is lower than in western countries that is, 5.8% in Thai people and 10-25% in western countries[1] with a higher incidence in female (ratio of

F:M=1.2:1 in this report; Pausawasdi A. 1.4:1, Miki 1.6:1, Western countries 4:1)[1,2] The average age of the patients were rather high except in the group which and haemolytic disorder as a predisposing factor. The incidence of gall stones in this group was also higher than in the normal population.[3]

There was no single clinical sign or symptom or a single laboratory investigation which had high accuracy in the diagnosis of, or to rule out CBD. stone. Even in the symptomatic patients we could find Charcot's triad in only 40% of them[4] Almost half of the patients in this study had no jaundice and only 20% of them had elevated serum alkaline phosphatase level.

Ultrasonography was first used in 1981-1982 to detect abnormalities in the hepatobiliary tract system in Thailand.[5,6] We found that the accuracy was high for gall bladder stones (90%)[1], but not for CBD. stones (55%).[7]

Other investigations such as PTC or ERCP are invasive and require special instruments and experienced clinicians, so although the accuracy of such investigations in the diagnosis of CBD stones are high ultrasonography should still be the procedure of choice.

The lower sensitivity of ultrasonography may be attributed by the bowel gas which obscure the distal part of the CBD. Some radiologists improve the sensitivity of ultrasonography by having the patients drink water or eat a fatty meal before the investigation, or by changing the position of the patients during scanning. Using these methods the sensivitity may be increased up to 75%. The sensitivity could also be increased if the CBD. was dilated.[7]

During the operation, intra-operative cholangiogram (IOC) had a very high accuracy (90-98%).[1,8,9] However, the indication for this is still controversial. Some surgeons performed IOC routinely[9] With the reason that no preoperative clinical signs or symptoms or laboratory investigations can rule out CBD. stone, and that IOC may detect anatomical abnormalities of the ductal system and thus, help the surgeons during the operation. Some surgeons performed IOC selectively.[8,10,11] because IOC in cases without indications have very low positive result, and a waste of more money and time, as well as may increase the morbidity. The indications were different for different surgeons, some used multiple liver chemistry tests,[1,9] while some used multiple data from clinical presentations and investigations[8,10]

The organisms grown from bile culture were not different from other studies in Thailand[2] with predominantly E. coli in aerobic group and clostridium in anaerobic group.

Surgery was the treatment of choice but there was increasing trend to the use of non-operative procedures such as endoscopic sphincterotomy which was used in high risk patients or in post cholecystectomy cases with good results in 80-90%.[12-14] This method was also used to removed CBD. stone prior to the operation in order to avoid exploring the CBD.[14] and it was claimed that this method was safe, with lower morbidity and mortality. The other non surgical management of choledochoscopic removal of retained stone was also popular. Extracorporeal shock wave lithotripsy combined with dissolving agents may not be suitable for gall stones in Thai patients because 80% of them had calcium components.[2]

Conclusion

This is a retrospective descriptive study of 277 cases of common bile duct stones during an 8 year period. Most of the patients were 50-70 years of age. Abdominal pain was the most common presenting symptom. The sensitivity of the diagnosis before operation was not high, so intraoperative evaluation by careful inspection, palpation of CBD. and intraoperative cholangiogram is very important. Surgery is still the treatment of choice, but there was increasing trend to use non operative managements which were very useful in cases of recurrent and retained stones or in very high risk patients.

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