Short Reports

PREDICTORS OF COMMON BILE DUCT PATHOLOGY PRIOR TO CHOLECYSTECTOMY, EVALUATION RISK ASSESSMENT COMMON BILE DUCT STONE AND COMPARATIVE STUDY BETWEEN INRAOPERATIVE CHOLANGIOGRAPHY AND OTHER EXAMINATION (CT, USM, MRCP, ERCP) PATIENTS WITH LAPAROSCOPIC CHOLECYSTECTOMY

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Choledochoscopy is as important as cholangiography, but it does not show high sensitivity for anomaly and distal strnosis. Choledochoscopy is not widely used as diagnostic method and more popular for treatment.

I group – patients with high risk (80 patients), II group – patients with medium risk (38 patients) and III group – patients with low risk (49 patients).

Intraoperative cholangiography is important step in searching and characterizing common bile duct stones or anatomic deformations as well as help surgeon to choose adequate operative tactics during operation.

Nowadays laparoscopic cholecystectomy (LC) has been used widely as standard surgical intervention during bile cyst disorder (cholelithiasis, polyps, acute cholecystitis and etc). It is known that 10-20% choledocholithiasis [1, 2], 5-7% common bile duct distal stenosis [14], 8–13% bile duct anomaly has been found out during gallbladder stone disease [8].

Not identifying above mentioned pathology during operation cause complication such as bile duct injury in 0,1–1% cases [6, 7, 9], postcholecystectomic syndrome in 15–20% cases [11], cholangitis, pancreatitis and consequently may origin sosial problems.

Taking into the consideration all these issues accurate investigation of bile ducts should be mandatory for all patients who will undergo LCH. According the result of standard preoperative examination (clinic, US, laboratory) the stone finding ability all of these examination is 50% and they can not reveal silent common bile duct stone (2–13%), bile duct anomaly and stenosis accurately[20, 21].

The purpose of investigation

The definition importance of intraoperative visual examination for assessment bile duct condition is goal of our investigation.

Materials and methods

167 consecutive patients with symptomatic gallbladder disease underwent attempted LCH at the Azerbaijan Republic Central Clinic Hospital of Health Ministry and Azerbaijan Medical University Surgical department as well as Germany federation Berlin DRK and Humboldt Hospital between 2005 and 2008.

A total of 167 patients (49 men and 118 women) with a mean age of 41–50 years (range, 20–75 years) were admitted hospitals. All patients selected for the study were carried out standard examination such as CBC, bilirubin, ALT, AST, amylase. The bile duct examination methods are included clinical, laboratory, visual examination method such as US, MRCP, ERCP and biopsy. All these patients were divided in three groups according the test results. I group – patients with high risk (80 patients), II group – patients with medium risk (38 patients) and III group – patients with low risk (49 patients).

Laparoscopic cholangiography was performed as below: After gallblader grasping and retracted in cephalic position by trocar, gall bladder duct was dissected. The wide metallic clip was inserted between gallbladder neck and gall bladder duct in order to prevent migration bile stones to common bile duct and leaking contrast dye during cholangiography. Then pediatric tube was inserted through into gallbladder duct, 5–10 ml contrast material was injected and cholangiogram was obtained.

Results. All patients in I group-patients with high risk (80 patients) were performed MRCP, 67 of them pathology were revealed. Although 18 of them were not showed any pathology, during intraoperative cholangiography 3 of them pathology were revealed. One of them has Mirizzi anomaly and two have distal stenodid in bile ducts.

II group- patients with medium risk (38 patients) were included patients with history of jaundice or pancreatitis and more than 60 years old. We performed intraoperative cholangiography patients in this group. During examination 3 of them patology was detected. 5 of them was applied transcystic drainage due to wide common bile duct and distal access, 2 of them laparoscopic stone extraction, 3 of them bile duct stone were extracted postoperatively after performing ERCP and sphincterotomy.

In one patients due to wide common bile duct and distal sphincter was performed LCH and laparoscopic choledochoduodenoanastomosis. Another patient had wide common bile duct and common bile duct stone and we decided to performe open cholecystectomy fot this patient. One patient was discovered distal stenosis and common bile duct stone and we applied LC, ERCP and sphincterotomy. 30 of 38 patients were not revealed any pathology.

Increasing any of cholestasis enzyme, history of jaundice or pancreatitis within 1 month and patients with more than 60 years old are indication for intraoperative cholangiography. All these symptoms are criteria of intraoperative cholangiography. Gener-

ally, II group patients with medium risk chance of finding pathology of common bile duct is 21,05%.

III group – patients with low risk – If has any suspicion (small stones, wide gall bladder duct, wide common bile duct, pancreatitis and etc) intraoperative cholangiography need to be conducted. Intraoperative cholangiography have to be performed patients without history of preoperative ERCP or pathology in MRCP, but suspicious symptoms in laboratory or US

As shown in our studies we revealed pathology in 6 patients when performed intraoperative cholangiography in 49 patients. One patient was revealed wide common bile duct and stone and performed LCH simultaneously choledochoduodenoanastamosis. In 2 patients were founded out only common bile duct stones, one of them was conducted laparoscopic stone extraction, another was performed LCH simultaneosly intraoperative sphincterotomy. In 2 patients distal stenosis were detected, one of them was converted open cholecystectomy, another patient was operated with LCH simultaneously choledochoduodenostomy. One of the patient was discovered Mirizzi syndrome and therefore open cholecystectomy was made.

Generally, III group – patients with low risk the frequence of common bile duct pathology is 12,25%. We found common bile duct in 12,25% patients.

We got conclusion that if patients were observed wide common bile duct, wide gall bladder duct, pancreatitis features, numerous small stones during laparoscopic intervention, intraoperative bile duct exploration need to be done.

Therefore, these aforementioned signs need to be added intraoperative selective criteria. Because as shown in our studies assessing these criteria increase frequency of detecting common bile duct pathology during operation (12,25%).

Characters of all these three groups and results of examination give us clue that during preoperative routine examination we may suspect about common bile duct pathology, but to make more accurate diagnosis we need to conduct intraoperative cholangiography. It is worth to note that high and medium risk patients should be performed MRCP during preoperative period.

MRCP does not have high sensivity to identify distal stenosis. To determine this pathology accurately need be performed ERCP and intraoperative cholangiography.

If patient suffer from both gallbladder stone and common bile duct pathology then treatment plan should be more mini-invasive. More precisely, LCH and ERCP must be first choices.

The patients with common bile duct pathology first choice treatment method is laparoscopic method, if it is impossible, the operation need be converted to open method or performed postoperative ERCP. The 16,1% patients with symptomatic gallbladder stone and planning for LCH were found common bile duct pathology. The most common pathology are choledocholithiasis (8,54%) and distal stenosis (4,6%).

In preoperative period common bile duct pathology identification indices were shown sensitivity 72,5% and specificity 62,5% for cholestasis signs, sensitivity 77,5%, specificity 78,9%, accuracy 80,8% for US, sensitivity 95,3%, specificity 83%, accuracy 96,3% for MRCP.

Discussion. The results of conducting examination (clinic, US, laboratory) show that they can discover bile ducts pathology only in 50% cases and standard examinations can not identify common bile duct stones (2–13%), anomaly or stenosis.

MRCP demonstrate high sensitivity in determination common bile duct stones, but can not identify anomaly or pathology accurately, not cost effective and advice to use only according indications [3, 4, 5, 15]. Laparoscopic US or endo US is not cost effective and can not reveal anomaly or stenosis [5].

Although ERCP is supposed to be «gold standard» in common bile duct pathology, it is invasive and complication rate is relatively high (10%). Hence this method is widely used for treatment than diagnosis [22].

Choledochoscopy is as important as cholangiography, but it does not show high sensitivity for anomaly and distal strnosis. Choledochoscopy is not widely used as diagnostic method and more popular for treatment [1].

Intraoperative cholangiography is considered most accurate and cost effective method in identification bile ducts stones, stenosis and anomaly. But information about effective using this method is contradictory. Some investigations recommend to apply intraoperative cholangiography for all patients [18]. Although other investigations advice not to apply for all patients, because of uselessness [19].

Although the accurate examination of bile ducts is necessary to prevent damage bile ducts and identify common bile duct stones such as silent, stenosis and anomaly, the examination methods have not proven their effectiveness yet. Therefore identification effectiveness and indications bile ducts examination methods have not lost their science-practice importance.

Summary, intraoperative cholangiography is important step in searching and characterizing common bile duct stones or anatomic deformations as well as help surgeon to choose adequate operative tactics during operation.

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