



## Clinical Study on hepatectomy with choledochofiberscope in liver gallstones

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### ABSTRACT

**Objective:** To analyze the clinical Study of hepatectomy with choledochofiberscope in liver gallstones, and provide reference for clinical treatment. **Methods:** A total of 96 patients with liver and gall stone in hospital from January 2013 to February 2016 were selected, patients were randomly divided into observation group and control group. All Patients were taken treatments of choledochofiberscope lithotripsy, observation group patients were given liver lesion resection, treatments of patients were compared. **Results:** The operation time of the observation group ( $3.0\pm 0.6$ ) h and intraoperative blood loss of min ( $386\pm 169$ ) mL and control group operation time ( $4.0\pm 0.1$ ) h and intraoperative blood loss of min ( $395\pm 202$ ) mL, show not significantly different. The effective rate (89.6%) in the observation group was significantly higher than that in the control group (66.7%). The postoperative complications included infection, cholangitis, biliary tract bleeding, two groups of patients with postoperative complication rate was not significantly different. The residual stone rate (6.3%) and recurrence rate (6.3%) in the observation group were significantly lower than those in the control group (22.9%) and the rate of recurrence (54.2%). **Conclusion:** Liver and gallbladder stones in the implementation of liver resection and fiber bile duct mirror treatment is clear, high security, with the use of value.

## 1. Introduction

Liver and gallbladder stone is courage system internal disease, common types including intrahepatic bile duct stones, gallbladder stones, choledocholithiasis, the most common clinical feature, such as patients with abdominal pain, nausea, fever, etc[1], and it has a high incidence. It is difficult for the patients who with stenosis of bile duct and other pathological changes in the same time in the treatment. Clinical treatment usually takes surgical treatment, but the rate of postoperative stone residual rate and relapse rate is very high, the development of surgical treatment in recent years, the treatment effect of bile duct stone has improved[2]. In order to analyze the effect of hepatectomy with fibre-cholangioscope, the study was carried out by patients with biliary calculi in our hospital.

## 2. Data and methods

### 2.1. General data

The study of 96 patients who were admitted to biliary stone from January 2013 to February 2016 in our hospital, Male 35 cases and female 61, their ages are from 30 to 76 years old, the average year ( $49.77\pm 13.9$ ). The inclusion criteria: patients with clinical manifestations of the upper abdominal pain, jaundice, main body temperature anomalies, all did not appear hypoalbuminemia and ascites, all of them were diagnosed with diagnosis of liver and (or) gallbladder stone by ultrasound scan, CT scan, as well as MRCP examination, they were voluntarily signed informed consent. The left hepatic lobe biliary calculi 42 cases (43.7%), Left half liver and outer leaf stone 16 cases (16.7%), left and right intrahepatic bile duct stones 9 cases (9.4%), right liver lobe stones 22 cases (22.9%),

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right liver anterior lobe stone 7 cases (7.3%), 19 cases had a history of previous surgery. Liver function examination, transaminase abnormality 10 cases (10.4%), total bilirubin abnormalities 11 cases (11.5%).

They were randomly divided into observation group and control group. Observation group, male 19 cases, and female 29 cases, average age (49.67±13.98), 10 cases (20.8%) had the history of biliary surgery, preoperative liver function examination, glutaminase (49.95±15.26) U/L, albumin (48.62±8.26) g/L, total bilirubin (28.96±8.46) mol/L. Control group: male 16 cases, and female 32 cases, average age (50.15±14.26), 9 cases (18.7%) had the history of biliary surgery, glutaminase (48.85±15.06) U/L, albumin (49.96±7.84) g/L, total bilirubin (30.16±9.15) mmol/L.

## 2.2. Methods

Two groups of patients were implemented for the treatment of liver resection lithotomy, 42 cases (43.7%) of biliary calculidectomy on the left liver, 15 cases (15.6%) of left liver resection, 11 cases (11.5%) of the posterior lobotomy of the right liver, 19 cases (19.8%) of the right liver lobe resection, left anterior lobe and the outer leaf excision 6 cases (6.3%), under the right liver segment and left lobe resection in 3 patients (3.1%). In the process of taking stone, the saline solution was developed. The treatment combined fibre-cholangioscope in the control group and the results were analyzed.

## 2.3. Observations

The patients were followed up for 6 months to 3 years after the operation, and the following procedure was reviewed every three months, followed by the examination of urtrosound the T tube, and the residual condition of the stones was checked 1 years late. Residual: postoperative review still saw stone, relapse: postoperative self-conscious symptom disappears, after operation 1 year review again appear stone. Curative effect: chills, abdominal pain, nausea and vomiting in patients with clinical symptoms disappear completely, wound healing is cure, chills, abdominal pain in patients with clinical symptoms disappeared basically for improvement, clinical symptom have no obvious change was invalid.

## 3. Results

### 3.1. The general data comparison of the operation

Observation group operation time (3.0±0.6) h, intraoperative hemorrhagic (386±169) mL, and control group operation time (4.0±0.1) h, intraoperative hemorrhagic (395±202) mL. There was no significant difference in operation time and intraoperative hemorrhagic between the two groups of patients.

### 3.2. Operation effect analysis

The total efficiency of the observed group was 89.6%, of which 32 cases were cured (66.7%), effective 11 cases (22.9%), and invalid 5 cases (10.4%). Control group, 18 cases were cured (37.5%), effective 14 cases (29.2%), and invalid 16 cases (33.3%), the total efficiency was 66.7%. The two groups were significantly different.

### 3.3. Complications contrast

The common postoperative complications of the two groups analyse. Observe group: biliary leakage 2 cases (4.1%), no biliary hemorrhage, reflux cholangitis 1 case (2.1%), infection 3 cases(6.3%), and no hepatic incompetence. Control group: biliary leakage 3 cases (6.3%), biliary hemorrhage 2 cases (4.1%), no reflux cholangitis, infection 2 cases (4.1%), and hepatic incompetence 1 case (2.1%).

### 3.4. The recurrence rate comparison

Postoperative stone residue 3 cases (6.3%) and recurrence of stones 3 cases (6.3%) of the patient in observation group. In the control group, stone residue 11 cases (22.9%) and recurrence of stones 26 cases (54.2%). The residual rate and recurrence rate were significantly lower than those in the control group.

## 4. Discussion

Liver and gallbladder stone is a common kind of clinical bile duct disease needs to take surgery. In general surgery, often can cause large trauma, and the long-term postoperative drainage tube required, postoperative recovery of patients is very bad, and it maybe increase the risk of bad surgery[3]. Many scholars have pointed out that patients with liver gallstones are treated with regular operation, the rate of residual stones is higher, and it is important in the study on reduction recurrence rate.

Liver and gallbladder surgery stones residual problem is still one of the difficulty, and one of the most common treatment measure is hepatic resection, while removing stones diseased tissue, which is currently accepted effective method in treatment of liver and gallbladder stone. Statistical data at home and abroad, according to the conventional surgical treatment, calculi residual rate of 27%, Zhao Y, et al believe that the stones according to clinical empirical joint fiber choledochoscope can reduce calculi residual rate[4,5]. Liver gallstones are found in the posterior lobe of the liver and left hepatic lobes, and hepatectomy remains the most surgical procedure. But if in primary bile duct stenosis site, the implementation of the left hepatic lobe resection[6], although calculi can be depleted, but

due to bile duct stenosis and postoperative liver did not complete excision, the recurrence rate is higher. In the treatment of biliary calculi, fibre-cholangioscopy and hepatectomy are the latest treatment method[7], which is efficient in the treatment of biliary disease. Most of the liver and gallbladder stones can be detected by ultrasound, CT scan[8], but to complicated bile duct stones, imaging methods can not fully grasp the pathological changes, whether through fiber choledochoscope can be observed in the bile duct residual stones, fully understand the stone of bile duct of liver inside and outside the location, size, observe whether narrow place whether there is a stone, choose the reasonable operation method, simplified operation steps, and be able to remove the stones, lower stones residual rate. In the study, authors pointed out that the use of fibre-cholangioscope therapy could improve the removal rate and reduce postoperative infection[9,10]. The use of fibre-cholangioscope is one of the most important improvements in biliary surgery, which can reduce the incidence of intralopular surgery[11]. There was no significant difference in the amount of blood in the surgical time and in the control group during the study. The surgical treatment effective rate was significantly higher in the observed group (89.6%) than the control group (66.7%). Postoperative complications include infection, cholangitis, biliary hemorrhage, etc., and the difference of incidence of complications in the two groups was insignificant. Calculi residual rate of observation group patients (6.3%), and the recurrence rate (6.3%) were significantly lower than the control group calculi residual rate (22.9%), and the recurrence rate (54.2%), the combined surgical treatment can improve the effect of surgical treatment, does not increase the operative time and intraoperative blood loss, lower calculi residual rate and recurrence rate.

Surgical treatment of liver gallstones should follow the principle of removing the lesion and removing the stenosis, but it is necessary to remove the stenosis and drainage of the bile duct. If liver leaves are valuable and liver parenchyma is damaged, liver partial resection is required. Hepatectomy combined with fibrocholangioscope can remove the stone and can detect other lesions[13]. In the clinical treatment of bile duct stones, patients body conditions required sufficient preoperative evaluation, carefully understand the position and size of the stones, and narrow obstruction and other biliary diseases, diseased parts of the best, improve curative effect, postoperative follow-up positively, make sure no stone residual[14], antibiotics used activitively, prevent the complications. Patient with emergency surgery has no necessary to deplete stones completely if they have vital signs or other important organs. Intraoperative by T tube line and postoperative fistula choledochoscope lithotomy, should strictly abide by the principle[15], postoperative should avoid T tube slippage, postoperative deplete stone if intrahepatic bile duct residual stones, the stones can crushing after many times. Once the stone cannot be removed completely, the T tube is placed, such as a T tube slipper to be replaced in time.

In a word, liver and gallbladder stones in the implementation of

liver resection and fiber bile duct mirror treatment is clear, high security, with the use of value. In the clinical treatment of liver and gallbladder stone, application of imaging examination means is necessary for patients to choose a suitable operation method and the rational use of fiber choledochoscope.

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