

CLINICAL RESEARCH

Cholecystectomy for Large Hartmann's Pouch Spliced with Biliary Pathways

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Abstract

In this paper, the proposed cholecystectomy method for very large Hartmann's pouch spliced with biliary pathways is described in detail. The results of the cholecystectomy procedure for very large Hartmann's pouch spliced with biliary pathways during the period 2001-2012 are presented. The proposed method contributes to a reduction in complications such as bleeding and bile leakage, and eliminates damage to the common bile duct.

Key words: *acute cholecystitis, Hartmann's pouch spliced with biliary pathways.*

Introduction

Over the past few years the number of patients with acute cholecystitis has significantly increased, predominantly seen in patients above 60 years of age [1]. Despite the great potential of modern surgery and modern medical technologies, the mortality remains at the same level (3-7%) with no signs of decrease. Complicated forms of cholelithiasis are the common cause of death in more than 60% of patients. Most often complications occur during destructive cholecystitis, Mirizzi syndrome, scleroatrophic gallbladder, cholecysto-digestive fistulas, and a large Hartmann's pouch spliced with biliary pathways [4]. Destructive forms of acute cholecystopancreatitis have recorded a high percentage of between 20% and 35% mortality. According to different authors the mortality rate in elderly and senile patients ranged from 30% to 80% [2,3].

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The aim of this study was to provide a cholecystectomy procedure for very large Hartmann's pouch spliced with biliary pathways to reduce the complications such as bleeding, bile leakage, damage (intersection) of the common bile or common hepatic ducts in the transverse direction.

Material and Methods

Between 2001 and 2012, over 2000 laparoscopic cholecystectomies (including 154 by mini laparotomy, 173 by traditional laparotomy) were performed on patients with cholelithiasis in the Surgical Departments of the Ulyanovsk State University and Ulyanovsk City Hospital Emergency Care. Emergency cholecystectomy was performed in 1629 (70%) patients, of whom 907 patients were over 60 years; acute cholecystopancreatitis was diagnosed in 343 (14%) patients. The mean age of the patients was 73.1 ± 0.82 years. All patients had two or more comorbidities.

We performed a comparative analysis of the surgical procedures in 70 patients with acute cholecystitis complicated by large Hartmann's pouch spliced with biliary pathways. Patients were divided into two groups based on the method of cholecystectomy employed. The 1st group included 36

patients operated upon following the traditional method; the 2nd group contained 34 patients operated upon by the proposed cholecystectomy method, which is as follows (Method of the cholecystectomy for very large Hartmann's pouch spliced with biliary pathways. The decision to grant a patent of the Russian Federation of 06/20/09, the application number 2358663, priority of 01/30/08).

In the first phase, the gallbladder (1) is dissected along the inferolateral wall, starting at 2-2.5 cm above Hartmann's pouch (2) for 2.5 - 3.0 cm. The gallbladder (1) contents are completely emptied via the incision (3). Next, the inferolateral wall of Hartmann's pouch (2) is dissected toward the common bile (4) and common hepatic ducts so that the line of incision (5) will pass along the common bile (4) and common hepatic ducts. The contents of Hartmann's pouch (2) are then emptied. The pouch wall is captured using fenestrated forceps, gently stretched, and then the adhesions between the Hartmann's pouch (2) and the common bile duct (4) as well as those between the Hartmann's pouch (2) and general hepatic duct are neatly divided. When the Hartmann's pouch (2) is released, the cystic artery is ligated. The gallbladder (1) is then resected at the level of the cystic duct, separated from the bed and removed. After performing the intraoperative cholangiography which indicated the absence of any pathology of the common bile and common hepatic ducts, the cystic duct was ligated and peritonization of the gallbladder bed was performed (Fig.1).

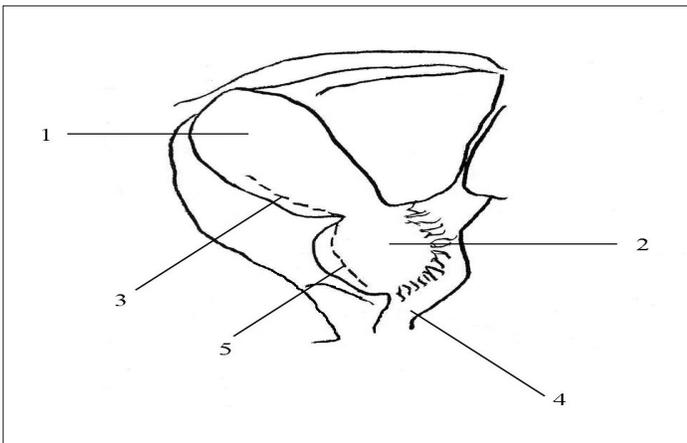


Figure 1.
Method of cholecystectomy

Results and discussion

A comparative evaluation of the incidence of postoperative complications showed that the complications occurred less frequently in the second group than in the first group. The following complications were noted in the 1st group: injury of the common bile duct - 5.6%, bleeding from the gallbladder bed - 11.1%, bile leakage - 8.3%. In the second group, no injuries of the extrahepatic bile ducts were noted and bleeding from the gallbladder bed was observed in 2.8% of the patients.

The patients' duration of hospital stay in the first group was 19.4 ± 0.5 days, while for the second group it was only 10.4 ± 0.3 days. Postoperative mortality was 2.8% in the first group, whereas postoperative mortality was not observed at all in the 2nd group.

The high number of complications in the first group is connected with the conventional method [4] of cholecystectomy for large Hartmann's pouch spliced with biliary pathways. One of the stages in the conventional method of cholecystectomy involves the dissection of the inferolateral wall of the Hartmann's pouch in a direction perpendicular to the total bile and common hepatic ducts, which can cause damage (intersection) of the common bile or common hepatic ducts in the transverse direction. This complication leads to bile leakage and the need to restore the bile passage by performing biliodigestive anastomosis, which often leads to adverse postoperative outcomes.

Fewer complications were observed in the second group post cholecystectomy following the proposed method. This was due to the dissection of the inferolateral wall of Hartmann's pouch towards the common bile duct and the common hepatic duct so that the incision line would pass along the common bile and common hepatic ducts, which prevents any damage (intersection) to the common bile duct or common hepatic duct in the transverse direction.

Conclusion

The proposed method of cholecystectomy for large Hartmann's pouch spliced with biliary pathways contributes to a reduction in complications such as bleeding and bile leakage, and eliminates damage to the common bile duct.

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