Successful Laparoscopic Treatment of Cholecystoduodenal Fistula

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1. INTRODUCTION

Enterobiliary fistulae are a rare complication of biliary tract disease. Cholecystoduodenal fistulae (CD) are the most frequently encountered, comprising 75-80% of all such fistulae (1). In 90% of cases CD is related to gallstone disease, but it can be related to peptic ulcer disease (2). Operative treatment of CD is most frequently performed via laparotomy, but laparoscopic stapling techniques have been reported as feasible and safe methods for treating this fistula (2,3). However, these procedures are not always performed successfully. We have reported five cases of CD diagnosed intraoperatively, managed successfully by laparoscopic approach.

2. MATERIALS AND METHODS

From January 2007 to December 2009, 1600 patients underwent LC for gallstone disease at the Department of Surgery, County hospital Slavonski Brod, Croatia. Five (0.3%) of them presented with classic symptoms of symptomatic cholecystitis, and were operated upon laparoscopically. Preoperative diagnoses, operative methods, morbidity and management were recorded. Data were collected on patients' age, sex, operative diagnoses, operative methods, morbidity and management. In one patient ultrasound revealed dilated intrahepatic and extrahepatic ducts, and elevated liver enzymes. She underwent a laparoscopy and a cholecystoduodenal fistula was revealed. The closure of the fistula was performed with the use of an endo-stapling device (ELC 35, blue firing, ETHICON), but because of a difficult anatomy in Calot's triangle, a laparotomy was performed with the use of an endo-linear stapling device (35). This study retrospectively reviewed the medical records of these five patients. Data were collected on patients' age, sex, operative diagnoses, operative methods, morbidity and management. Surgical approach was evaluated as feasible techniques for treating this fistula.

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and a very dilated common bile duct (CBD) it had to be converted to laparotomy. Exploration of CBD showed a large stone which was extracted and cholecystectomy was performed. The post-operative course was uneventful and a normal T-tube cholangiogram was demonstrated on postoperative day 10.

In the other four patients, ultrasound revealed contracted gallbladder with stones. In each case laboratory findings were normal. Laparoscopy revealed a cholecystoduodenal fistula in each case. In two cases, cholecystoduodenal fistula was completely mobilized with a combination of blunt and sharp dissection. The fistula was divided using the endoscopic linear stapling device (Figure 1). After fistula occlusion the cholecystectomy was completed in the usual manner.

In the other two cases after division of the cystic duct and artery the gallbladder was dissected from the liver bed, leaving just the fistulous connection to the duodenum (Figure 2). The division of the fistula was then completed using the same stapling device.

3. RESULTS

All patients were females, 67 years old on average. They had gallstones detected by abdo-minal ultrasound, and one patient had dilated intrahepatic and extrahepatic ducts with gallstones. CD was found during operative treatment of gallstones. In three cases CD was completely mobilized with a combination of blunt and sharp dissection and divided using the endoscopic linear stapling device. After that, laparoscopic cholecystectomy was performed. In the other two cases after division of the cystic duct and artery the gallbladder was dissected from the liver bed, leaving just the fistulous connection to the duodenum. The division of the fistula was then completed using the same stapling device.

None of the patients needed to be converted to open cholecystectomy and all five patients had uneventful postoperative course. The hospital stay of five patients ranged from 5 to 10 days (median 6 days), length of follow up was 6 months.

4. DISCUSSION

The development of a fistulous tract from gallbladder is associated with gallstones in 90% of cases (4). As seen in this study, patients with CD are commonly presented with signs and symptoms of chronic cholecystitis. There were no specific symptoms which suggested CD and each fistula was diagnosed intra-operatively. Preoperative findings such as pneumobilia can be suggestive of internal biliary fistula (5), but we had no this sign. ERCP and MRCP are reliable diagnostic tools to clearly demonstrate the abnormal communication (4), but it was possible to use only US. That is the reason why we diagnosed CDs exclusively intra-operatively.

Treatment advocated for CD is cholecystectomy and closure of fistula communication (4,6). Prompt recognition is crucial in the treatment of these cases along with meticulous prepa ration of the fistula site. Laparoscopic suturing is time-consuming and can not secure fistula closure (4). For the fistula repair, the linear stapling device appears to be an useful instrument (1,7). It is feasible to perform the cholecystectomy first, then the exposure and repair of the fistula is easier and safer. After careful dissection, the occlusion of the fistula can be performed first, enabling easier cholecystectomy.

CD does not preclude a laparoscopic approach. With more experience and improved techniques, most of these cases could be performed laparoscopically, with all of the advan-tages that minimally invasive surgery offers.

REFERENCES