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Research Paper

A Comparative Study Between Early(<72 Hours) and Late(>72 Hours) Laparoscopic Cholecystectomy After Ercp For Cholelithiasis With Choledocholithiasis

Medical Science

KEYWORDS : endoscopic retrograde cholangiopancreaticography, laparoscopic cholecystectomy, cholelithiasis, choledocholithiasis.

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ABSTRACT

Endoscopic retrograde cholangio-pancreaticography (ERCP) followed by laparoscopic cholecystectomy comprises the current treatment modality in patients with common bile duct stones. The optimum time interval between Endoscopic retrograde cholangiopancreaticography and laparoscopic cholecystectomy is questionable. A total of 150 patients admitted with uncomplicated cholelithiasis with choledocholithiasis, were included in this study. They were divided randomly by chit pot method in two groups, Group A (75 patients) who underwent laparoscopic cholecystectomy within 72 hours of ERCP, and Group B(75 patients) ,who underwent laparoscopic cholecystectomy atleast more than 72 hours after ERCP. In the present study, mean operative time was significantly higher in group B as compared to group A. Post operative hospital stay was found significantly higher in group B. The longer the time interval between ERCP and laparoscopic cholecystectomy, the higher are the chances of encountering complications and longer is the hospital stay following surgery. Early cholecystectomy (<72 hours) after ERCP is preferred over late (>72 hours) cholecystectomy.

INTRODUCTION

The prevalence of common bile duct stones in patients with symptomatic gall stones varies, but probably lies between 10% and 20%.[1-5]Recommended treatment strategies for common bile duct stones are cholecystectomy with intraoperative cholangiography, intraoperative endoscopic retrograde cholangio pancreaticography(ERCP),surgical removal of the stones, preoperative ERCP and postoperative ERCP.[6-8] Due to experience and technical availability, preoperative ERCP and laparoscopic cholecystectomy is the most preferred approach[9-10].It is widely accepted to operate early, within a short time following ERCP, but exactly how much time is questionable[11-13].It is thought that during ERCP bile duct cannulation, contrast agent infusion, sphincterotomy or other minimally invasive procedures can trigger inflammation. Possible inflammatory effects of ERCP on laparoscopic cholecystectomy are not known. Also not enough is known about the effects of time elapsed between ERCP and laparoscopic cholecystectomy on operation and operation outcomes.

AIMS and OBJECTIVES

The present study was performed to assess and compare the effect of early(<72 hours) and late(>72 hours) laparoscopic cholecystectomy after ERCP in terms of duration of operation, intraoperative complications, duration of stay in the hospital and post operative complications.

MATERIALS and METHODS

A total of 150 patients admitted with uncomplicated cholelithiasis with choledocholithiasis, between December 2012 and December 2014,were included in this study. Patients with history of failed ERCP and placement of biliary stents during ERCP, cholecystitis , peritonitis, pancreatitis and cholangitis were excluded from the study. ERCP was conducted by gastroenterology department of S.M.S. Hospital. They were divided randomly by chit pot method in two groups, Group A(75 patients) who underwent laparoscopic cholecystectomy within 72 hours of ERCP ,and Group B(75 patients) ,who underwent laparoscopic cholecystectomy atleast more than 72 hours after ERCP.

ERCP procedure

Overnight fasting was advised to the patient prior to the procedure day. The patient was positioned in a prone to slightly left lateral decubitus on a fluoroscopic table. All patients were sedated with I.V. Midazolam.

Initially a brief endoscopic examination of the esophagus, stomach, duodenum and major duodenal papilla was performed. The major duodenal papilla is usually located on the medial aspect of the mid descending duodenum. The major papilla was then cannulated, with a 5-F diameter plastic catheter. Orientation of the catheter tip toward 11 to 12'o clock position permitted entrance into the bile duct[14,15]. Cholangiography was done using standard 76% Urograffin as contrast agent. Endoscopic sphincterotomy of the bile duct was performed before removing bile

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duct stones or placing a biliary stent. Stone retrieval basket was preferred over a balloon if larger stones (>10mm), intrahepatic stones, smaller stones in a dilated duct ,and stones larger than the downstream duct present. The stones were extracted by stroking the catheter.

Conventional Laparoscopic cholecystectomy was performed under general anesthesia.

ERCP findings, time interval between ERCP and laparoscopic cholecystectomy, conversion rate, mean duration of post operative hospital stay, mean operative time, intra operative complications and post operative complication rates were collected.

RESULTS

150 patients were included in the study, out of which 96(68.57%) were female and 44(31.43%) were male. Out of 75 patients included in group A total number of females were 54(74.29%) and number of male patients were 21(25.71%).Out of 75 patients included in group B, total number of female patients were 47(62.86%) and number of male patients were 28(37.14%). There were no major complications in any of the patients at the time of ERCP in both the groups. The mean time to operation (interval between ERCP and laparoscopic cholecystectomy) in group A was 33.74 ± 13.64 hrs (range 22-68hrs)and the mean time in group B was 96.77± 17.59hrs(range 74-144hrs).The time to operation in hours was significantly higher in group B than group A(p value<0.05).In group A, adhesions in Calot's triangle were found in 18(25.71%)patients compared to group B where 32(45.71%) patients were having adhesions. Gall Bladder bed bleeding was seen in 8 patients during laparoscopic cholecystectomy in group A and in 16 patients in Group B.As p>0.05, no significant difference was observed in the intraoperative complication rate among the groups.

The mean operative time of group A was 40.31 ± 10.84 minutes (range24-65) and the mean operative time of group B was 52.51 ± 12.91 minutes (range 30-86).As the p<0.05, operative time was significantly higher in group B as compared to group A .In group A, none of the patients required conversion to open cholecystectomy compared to group B where 4 patients needed conversion to open cholecystectomy.

In group A,15 patients developed complications in the post operative period, compared to 28 patients who developed complications in group B. Rate of complications was more in Group B ,however it was not significant(p>0.05). Prolonged ileus was the most common complication in both the groups.

The mean hospital stay in Group A was 45.94 ± 19.63 hrs (range 24-96) and the mean for group B was 62.40 ± 26.80hrs (range24-144). As p<0.05,mean hospital stay in group B was significantly higher compared to group A.

DISCUSSION

Of the 150 patients included in the study, 96(68.57%) were female and 44(31.41%)were male. In the present study, as sample size is less, careful selection of patients is done so that high clearance rate with nil major complications was achieved.

ERCP prior to laparoscopic cholecystectomy is a widely accepted procedure. Boerma et al[16] in Netherlands and Lau JY et al[17] in China in separate randomized trials concluded that a wait and see policy is not justified after ERCP, and early laparoscopic cholecystectomy was advised. Bulent Salman et al[18] and Zakaria Hamza[19] did the randomized study to evaluate the effects of ERCP on laparoscopic cholecystectomy between early and late groups.

The 72 hours time point was selected because of the start of the sub acute phase of inflammation. Kilciler G. et al[20] and Chen CC et al[21] in separate studies investigated the association between early increase in serum proinflammatory cytokines after ERCP. They proved that inflammatory process around Calot's triangle and adhesion formation following ERCP is more as the time passes.

Bulent Salman et al[18] also reported the dense adhesions in Calot's in the late group which led to conversion into open procedure .

In the present study, mean operative time in group A was 40.31 ± 10.84 minutes compared to 52.51± 12.91 minutes in group B ,which was significantly higher in group B as compared to group A.

Bulent Salman[18] found the mean operative time in early group was 38.3 ± 7.8min and in late group mean operative time was 68.4 ± 5.96.Zakaria Hamza[19] also reported mean operative time of 45 min and 75 min in early group and late group respectively and found it significantly high in late group

In our study, prolonged ileus was the most common complication in the post operative period whereas Bulent Salman et al and Zakaria Hamja[18,19] showed that wound infection was the major complication in post operative period because they had higher conversion rate into the open procedure in the late group.

In the present study, the mean hospital stay in Group A was 45.94 ± 19.63 hrs(range 24-96)and the mean for group B was 62.40 ± 26.80hrs(range24-144).Bulent Salman[18] reported the median post operative hospital stay in the early and late group were 1.96 ± 0.81 days and 3.62 ± 2.33 days respectively.

Post operative stay was found significantly higher in group B. So, in the present study, mean operative time and hospital stay were significantly high in group B.

CONCLUSION

Based on the results achieved in the present study, early laparoscopic cholecystectomy after ERCP in the patients of cholelithiasis with co existing choledocholithiasis was found to be safe.

Therefore, early laparoscopic cholecystectomy(<72hours) after ERCP is better compared to late (>72hours) laparoscopic cholecystectomy after ERCP in patients of cholelithiasis with co existing choledocholithiasis due to possible inflammation after 72 hours which makes the operation more difficult.

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