SHORT COMMUNICATION

OPEN CHOLECYSTECTOMY: OUR EXPERIENCE
Abdul Ghani, Waqar Ahmed, Fareed Uddin Baqai

ABSTRACT
Different indications of cholecystectomy and outcome of open cholecystectomy were analyzed in a retrospective study at Department of Surgery, Baqai Medical University Hospital, Nazimabad, Karachi. A consecutive series of 250 patients with gallstone had open cholecystectomy, from May 2007 to June 2012, were analyzed. The criterion for diagnosis was based on history, clinical findings, ultrasound and CT scan. A total of 250 surgically treated patients of symptomatic gallstone disease were included who underwent open cholecystectomy. Age ranges were from 20 years to 80 years. Sex distribution showed female preponderance. Sixty five patients (26%) had acute cholecystitis, 18 (7.2%) had empyema gall bladder, 8 (3.2%) patients had mucocoele and 15 (6%) patients had gall stone pancreatitis. Eight (3.2%) patients each had contracted gallbladder and deranged liver functions without common bile duct stones, respectively. Seventy (28%) patients were diabetics and 48 (19.2%) had hypertension. Twenty eight (11.2%) were known cases of ischemic heart disease, whereas 40 (16%) had both diabetes mellitus and hypertension. In 145 (58%) patients elective cholecystectomy and in 80 (32%) patients interval cholecystectomy was performed. In this series 18 (7.2%) patients underwent urgent cholecystectomy while tube cholecystostomy was performed in two (0.8%) patients. In 23 (9.2%) patients partial cholecystectomy was done. Eight (3.2%) patients under went common bile duct exploration during cholecystectomy. Out of total 250 patients, 12 (4.8%) developed wound infection, two (8%) patients had incisional hernia and one (0.4%) patient had common bile duct injury which was managed by endoscopic retrograde cholangiopancreatography. It is concluded that open cholecystectomy is still a standard procedure and have definite indications for surgical education and training of surgical resident.

Keywords: Open cholecystectomy, partial cholecystectomy, common bile duct exploration, tube cholecystostomy.

1. INTRODUCTION
With the advent of the laparoscopic era the trend began to move towards the laparoscopic cholecystectomy and robot-assisted biliary surgery. The incidence of gallstone disease increases with age and cholecystectomy is a commonly performed operation in general surgery. Open cholecystectomy are performed for symptomatic gall stone disease and for complications of the gallstone (e.g. acute cholecystitis, acute pancreatitis or obstructive jaundice). Open cholecystectomy is also performed in the patients who have contraindications of laparoscopic cholecystectomy and in patient who require conversion from laparoscopic cholecystectomy because of inability to complete the laparoscopic procedure. Open cholecystectomies are performed during whipple procedure, liver resection, liver choledocho cyst excision, transduodenal sphincterostomy, liver transplant and in penetrating trauma. The open cholecystectomy is also performed in Mirizzi’s syndrome. In the presence of a suspicious gallbladder mass open cholecystectomy should be performed.

2. METHODOLOGY
This study was carried out at Department of Surgery, Baqai Medical University Hospital, Nazimabad, Karachi from May 2007 to June 2012. Patients were admitted through OPD and emergency department. Diagnosis was based on the clinical assessment supported by ultrasound of abdomen, chest X-ray.
and other routine investigations. Magnetic resonance cholangiopancreatography (MRCP) and CT scan of abdomen were carried out in selected cases. Written consent for operation was obtained from all the patients (n = 250). Only symptomatic gallstones and complications of the gallstones were included in this study. Patients who had acute pancreatitis, acute cholecystitis and deranged liver functions without common bile duct (CBD) stones were managed conservatively and interval cholecystectomy was performed after 6 weeks. Urgent cholecystectomy was employed in patients with empyema gallbladder. Partial cholecystectomies were performed in those who had dense inflammation around the Calot’s triangle, in acute cholecystitis, empyema gallbladder and acute pancreatitis. Patients who had CBD stones and who underwent conversion from laparoscopic cholecystectomy to open cholecystectomy and carcinoma gallbladder were excluded from the study. Cholecystectomy was performed through Kocker’s incision. The operative details, postoperative complications and outcome were noted. In partial cholecystectomy, the gallbladder was incised and all its contents were removed and washed out with normal saline. The gallbladder divided through the Hartman’s pouch and margins was stitched with the continuous chromic catgut. Choledocotomy was employed when dilated CBD was found during operation (normal preoperative ultrasound) or a stone was suspected during cholecystectomy. Cholecystostomy was performed when further dissection was difficult in friable gallbladder. All co-morbid paid special attention before planning for cholecystectomies. Patients, who had diabetes mellitus, were managed by injecting insulin and hypertension was also managed with antihypertensive medicines before planning for operation. We are reporting this single institution experience to date in conventional cholecystectomy.

3. RESULTS

In this study, a total of 250 patients were included who underwent open cholecystectomy. 230 of the patients were female (92%) and only 20 were male (8%) having age in the range of 20-80 years. Majority of the patients were in the 40-59 years age group. Out of the total patients, 70 (28%) patients had diabetes mellitus, 48 (19.2%) patients had hypertension and 40 (16%) patients had both diabetes mellitus and hypertension. In this series, 23 (9.2%) patients were of known cases of ischemic heart disease, 65 (26%) had acute cholecystitis, 18 (7.2%) had empyema gallbladder, 8 (3.2%) had mucocele, 15 (6%) had gallstone pancreatitis, 8 (3.2%) had contracted gallbladder, 19 (7.2%) patients had deranged liver functions without CBD stones. In this study, 145 (58%) patients under gone cholecystectomy, 80 (32%) interval cholecystectomy and 23 (9.2%) partial cholecystectomy in patients with acute cholecystitis, empyama gallbladder and acute pancreatitis. In 18 (7.2%) patients urgent cholecystectomy was carried out whereas in 8 (3.2%) patients CBD exploration was carried out on account of dilated CBD or a stone was suspected in the CBD

<table>
<thead>
<tr>
<th>Patients detail and co morbidity</th>
<th>Indications</th>
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<tbody>
<tr>
<td>Female</td>
<td>230 (92%)</td>
</tr>
<tr>
<td>Male</td>
<td>20 (8%)</td>
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<tr>
<td>Diabetes mellitus</td>
<td>70 (28%)</td>
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<tr>
<td>Hypertension</td>
<td>48 (19.2%)</td>
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<tr>
<td>Diabetes and hypertension</td>
<td>40 (16%)</td>
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<tr>
<td>Ischemic heart disease</td>
<td>23 (9.2%)</td>
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<tr>
<th>Procedures</th>
<th>Complications</th>
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</thead>
<tbody>
<tr>
<td>Elective</td>
<td>145 (58%)</td>
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<tr>
<td>Interval cholecystectomy</td>
<td>80 (32%)</td>
</tr>
<tr>
<td>Partial cholecystectomy</td>
<td>23 (9.2%)</td>
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<tr>
<td>Urent cholecystectomy</td>
<td>18 (7.2%)</td>
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<tr>
<td>CBD exploration</td>
<td>18 (3.2%)</td>
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<tr>
<td>Tube cholecystectomy</td>
<td>2 (0.8%)</td>
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during cholecystectomy. Tube cholecystostomy was carried out in 2 (0.8%) patients. In this study, 12 (4.8%) patients had wound infection, 2 (0.8%) had developed incisional hernia and 1 patient had CBD injury managed by endoscopic retrograde cholangiopancreatography (ERCP).

4. DISCUSSION
The overall prevalence of gallstones in adult is about 10%. Clinically patients are asymptomatic, symptomatic and those with complicated cholelithiasis\textsuperscript{11}. Approximately 1-2% asymptomatic disease becomes symptomatic. In symptomatic and in complicated gallstones diseases, cholecystectomy is preferred\textsuperscript{12}. Acute cholecystitis occurs in up to 10% of patients with gallstones but in this study, 26% patients were presented with acute cholecystitis due to diabetes mellitus and increasing age. In this study, 7% had deranged liver function tests, which is reported to occur in up to 23% of patients with acute cholecystitis. Diabetics are particularly prone to gangrenous and emphysematous cholecystitis\textsuperscript{13}. Patients with acute cholecystitis, gallstone pancreatitis, and interval cholecystectomy were treated at 6–12 weeks after resolution of the acute episode. In this interval, 7% of the patients still required urgent cholecystectomy\textsuperscript{14}. It is documented that in acute cholecystitis, gallstone pancreatitis and empyema gallbladder the inflammatory changes around the gallbladder tend to be fibrotic and obliterating tissue planes\textsuperscript{15}. In this situation, the partial cholecystectomy is good alternative to total cholecystectomy to avoid CBD injury, arterial injury and duodenal injury\textsuperscript{16}. Tube cholecystostomy is indicated in gangrenous, emphysematous gallbladder and debilitated patients\textsuperscript{17,18}.

In other large studies, the overall incidence of bile duct injury is approximately 0.3–0.5%. According to an Italian study, there is an increased risk of bile duct injury in patients with previous cholecystitis (0.5%). In this study, rate of CBD injury is consistent with other series\textsuperscript{19–21}. Cholecystectomy does not relieve biliary pain in 10–33% of people with documented gallstones because of functional disorders like irritable bowel syndrome and dyspepsia\textsuperscript{22,23}. The mortality rate has declined from 2–5%. In open cholecystectomy the frequency of complication is less than 5% which is consistent with other documented study\textsuperscript{24}. The male sex, advancing age, diabetes mellitus, obesity, genetics, gallbladder wall thickening and presence of a palpable gallbladder are important risk factors\textsuperscript{25–28}.

5. CONCLUSION
Open cholecystectomy is still safe and effective procedure in symptomatic gallstone disease and in complicated gallstone disease. It presents a small number of complications especially if it was performed in urgency. In modern era the skill of open surgery will remain indispensable.

REFERENCES