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Laparoscopic Management of Acute Cholecystitis: A Single Centre Experience in Benghazi Libya

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Abstract

Background: Laparoscopic cholecystectomy (LC) is often performed early for treatment of acute cholecystitis (AC), and has become the treatment of choice for this diagnosis. This has reduced length of stay and is cost effective. It may, however, carry a higher morbidity and an increased rate of conversion to open cholecystectomy. In this article we evaluated the role of early laparoscopic cholecystectomy in surgical treatment of acute cholecystitis at our center.

Patients and methods: A retrospective analytical review of 114 cases of acute cholecystitis treated by laparoscopic cholecystectomy is presented. All cases were performed by the authors between 2002 to 2008. All patient records were reviewed and analyzed for age, sex, duration of symptoms, operative findings, conversion rate to open cholecystectomy, length of hospital stay, and any postoperative complications.

Results: the mean age of patients was 34.5 years (range 25 to 80). Female to male ratio was 4:1. Operative interventions were performed within the first five days from onset of attack. Operative findings included acute inflammation of the gall bladder with superficial adhesions in 84 (74%) patients. An inflammatory mass with difficult adhesions was found in 20 (18%) patients. Empyema of gall bladder was noted in 10 (9%) cases. Mean length of stay was 2.5 days. Conversion to open cholecystectomy totaled nine (7%) cases. Two cases (1.7%) developed postoperative bile leaks, two (1.7%) cases had postoperative bleeding, 10 (8.7%) cases had postoperative chest infections and two (1.7%) cases had wound infection at the entry port of extracting the gall bladder. There was zero mortality.

Conclusion: Early laparoscopic cholecystectomy for acute cholecystitis is feasible and safe and is today's treatment of choice for this event. The primary benefits are shorter hospital stay and quicker recovery.

Keywords: Acute Cholecystitis, Early Cholecystectomy, Laparoscopic Cholecystectomy, Benghazi, Libya.

Introduction

Laparoscopic cholecystectomy has become the preferred treatment for symptomatic cholelithiasis as it offers a quicker recovery and better cosmesis when compared to open cholecystectomy (1). However, the treatement of Acute cholecystitis and timing for cholecystectomy remained controversial in Regard to early (within a week of onset of symptoms) Vs. delayed surgery (4- 6 weeks from initial acute attack). Early laparoscopic cholecystectomy may be associated with a higher morbidity, an increased incidence of common bile duct (CBD) injury (1.3%-5.5%), and a higher conversion rate (2,3). Delayed surgical treatment is often preceded by a period of conservative treatment including intravenous antibiotics, intravenous fluids, analgesia, and bed rest (4). It is unclear whether this conservative approach is superior to that of early surgical intervention. Early laparoscopic cholecystectomy is technically a demanding procedure, feasible when done by experienced surgeons but still linked to higher conversion rates (5). In this study, the authors have analyzed their experience with laparoscopic cholecystectomy for the management of acute cholecystitis and its complications and their management.

Patients and methods

This is a retrospective review of acute cholecystitis patients who underwent laparoscopic cholecystectomy at our center, Al Jala teaching hospital in Benghazi, Libya, during the period from 2002 to 2008. All medical records of 114 cases with symptoms of acute cholecystitis were reviewed. Diagnosis was made based on the presence of upper abdominal pain, tenderness, guarding, fever, positive Murphy's sign, and ultrasound examination findings suggestive of acute cholecystitis (positive for gallstones, thickening of the gallbladder wall, peri-cholecystic fluids, and gall bladder distension). All gall bladder specimens retrieved were sent to pathology for confirmation of acute cholecystitis. Preoperative treatment of these cases included intravenous hydration, intravenous antibiotics, and analgesics. All patients received subcutaneous heparin.

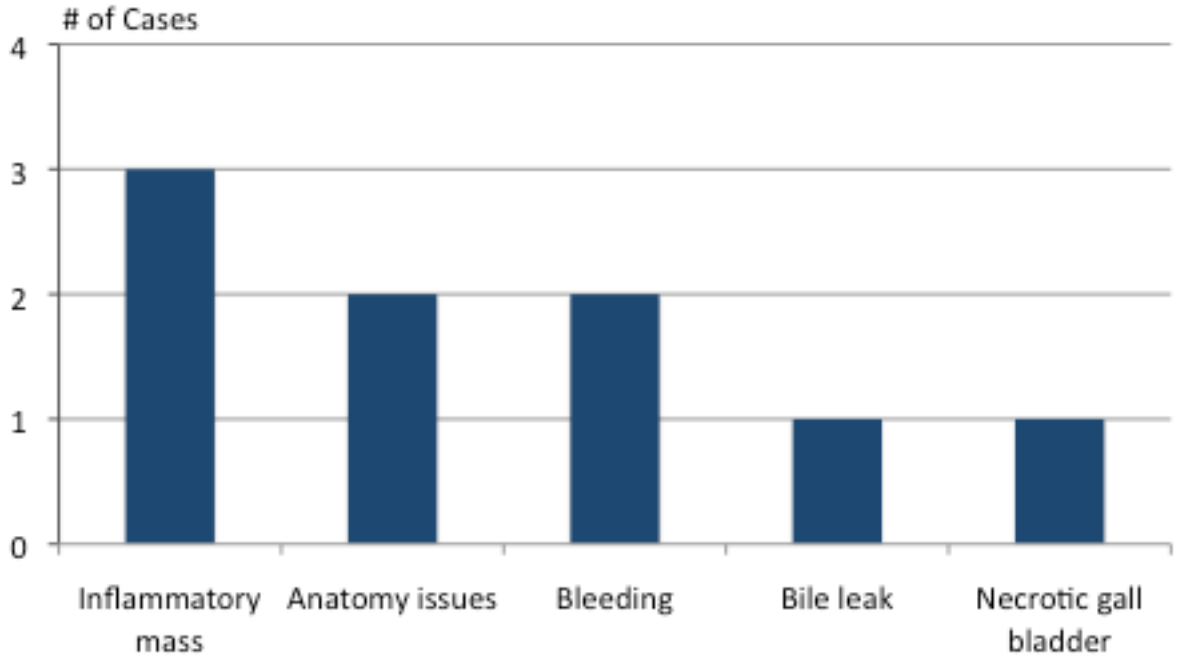

Figure 1. Indications for conversion from laparoscopic to open cholecystectomy

All surgeries were performed within the first 96 hours of admission to hospital.

Surgical Technique

All patients underwent laparoscopic cholecystectomy with the usual four ports approach. The gall bladder was aspirated using a long aspiration needle under camera vision. The dissection of the inflamed gall bladder was done carefully, starting near Hartmann's pouch creating a window between the cystic artery, cystic duct, and the liver. Cystic duct and artery were clipped using large clips. No intraoperative cholangiograms were performed. Subhepatic drains were placed in all cases. Postoperative endoscopic retrograde cholangiopancreatography (ERCP) was performed selectively in patients with clinical picture suggestive of common bile duct stones and/or bile leak.

Results

Laparoscopic cholecystectomy was performed for a total of 720 cases over a six-year period. Early laparoscopic cholecystectomy was performed in 114 cases (16%) with acute cholecystitis, of which 103 cases were first attack of acute cholecystitis while the remaining 11 had previous attacks and are waiting for elective cholecystectomy. The median age was 34.5 years (25-80). Eighty one (66%) of the patients were females. Thirty one patients (27%) were older than 70 years. Twenty three (20%) cases were type 2 diabetics. Nine cases (7%) converted to open cholecystectomy. The indications for conversion to open cholecystectomy are shown in figure 1. Five of the converted cases were performed during the first year of the study. Mean hospital stay was 2.5 days (2-5 days). Seventeen cases (14.9%) developed perioperative complications. Complications are summarized in figure 2. It is noticeable that the most common morbidity was related to chest infections. We had two cases of bile leak.

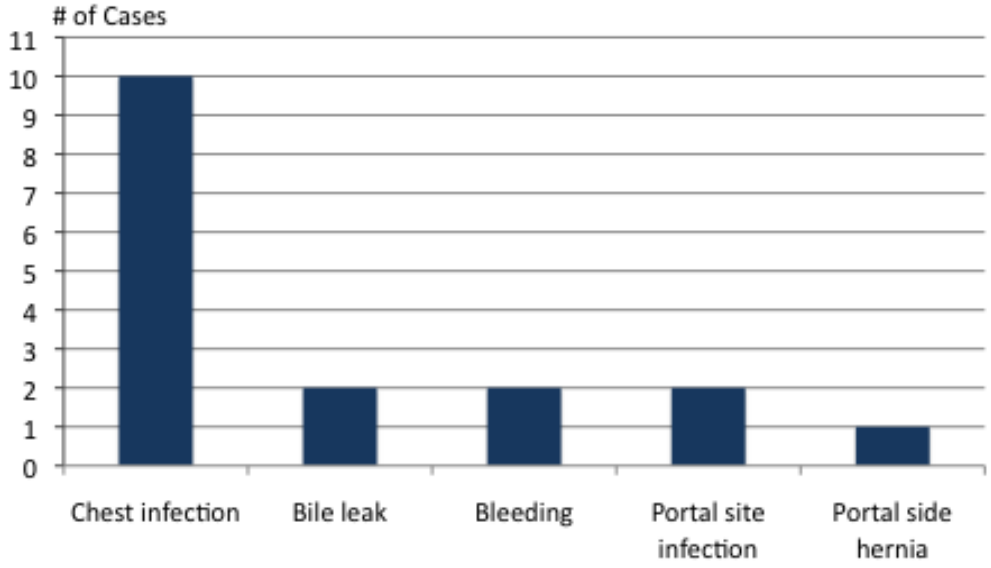

Figure 2. Summary of postoperative complications

One case ceased spontaneously and the other one had a slipped cystic duct clip which was managed by insertion of a common bile duct stent through ERCP.
There was no mortality. The pathology reports of all gall bladders confirmed the diagnosis of acute cholecystitis.

Discussion

Laparoscopic cholecystectomy has become the treatment of choice for cholelithiasis because of rapid recovery and better cosmesis (1). Early alaproscopic cholecystectomy for AC is controversial because of complication rates and need for conversion to open cholecystectomy. Common bile duct injuries were relatively high (1.3% - 5.5%) (2,3). Over time, experience has improved in minimally invasive surgery and the use of laparoscopic intervention is more common. Early LC for AC is being performed more frequently and has become the treatment of choice (6,7). The diagnosis of AC in our series was based on clinical background and abdominal US findings suggestive of such. Abdominal CT was performed only on selective patients who had a clinical picture suggestive of acute pancreatitis (increased serum amylase and lipase). Current recommendations are to operate within 96 hours of initial onset of the disease (8-10). Delayed surgical intervention after 96 hours is associated with higher conversion rates (23-32%) (10). In our series, all patients had surgery within the first 96 hours of the initial onset of symptoms.
The conversion rate has been reported between 11 to 30% and may be as high as 75% in acute gangrenous cholecystitis (11,12). In our experience, the conversion rate was 7%. Five of nine converted cases were in the first year of the study and six were males with severe inflammation and complex anatomical structures.

Early LC for AC does not appear to increase the mortality rate, but the morbidity rate (9%-16%) is significantly lower than that of open cholecystectomy (13,14). We noted neither increased mortality nor major complications in our review. Hematoma occurred in two cases and was treated by conservative methods. Blood transfusion was not required. Bile leak occurred in two cases. One case required post- operative ERCP and stenting for 6 weeks. This was due to slipped cystic duct clip. There was zero mortality in our study.

Common bile duct (CBD) injury is the most serious complication of LC. Incidence in the literature is around 0.5% (15). There was no CBD injury in our series, which was probably because of the cautious techniques we adopted. Common bile duct stones in patients undergoing LC occur in 4.5% -15% of patients (16). We performed preoperative ERCP with sphincterotomy in suspected cases of CBD stones and/or acute pancreatitis associated with AC. Post operative ERCP was performed for selected cases (3) with postoperative jaundice, and sphincterotomy was performed in two of them because of stone later seen on imaging.
The routine use of intraoperative cholangiography (IOC) is safe but carries risks as well. It is used selectively when the anatomy is unclear during surgical dissection (17). We did not perform intraoperative cholangiograms since tissue was inflamed and there may be a clear danger of injury to the common bile duct. This decision was also made due to limited facilities.
In conclusion, the conversion rate and morbidity of laparoscopic cholecystectomy for patients with acute cholecystitis was not increased in this group of patients. This is in contrast to some reports in the literature (11,12). Early surgeries may be safer and may have some definite socioeconomic benefits. For surgeons with adequate experience, the optimal timing of laparoscopic cholecystectomy for treatment of acute cholecystitis is as soon after diagnosis as possible, within 72-96 hours of onset of symptoms.

References

1. Clubb TSS. A prospective analysis of 1518 laparoscopic cholecystectomies. The Southern Surgeons Club. N Engl J Med 1991;324:1073-8.
2. Kum CK, Eypasch E, Lefering R, Paul A, Neugebauer E, Toidl H. Laparoscopic cholecystectomy for acute cholecystitis: is it safe? World J Surg 1996;20(1):43-8.
3. Adamsen S, Hansen OH, Funch-Jensen P, Schulze S, Stage JG, Wara P. Bile duct injury during laparoscopic cholecystectomy: a prospective nationwide series. J Am Coll Surg 1997;184(6):571-8.
4. Gurusamy KS, Samraj K. Early versus delayed laparoscopic cholecystectomy for acute cholecystitis. Cochrane Database Syst Rev 2006;18(4):CD005440.
5. Di Saverio S, Gazzotti F, Coccolini F, Pinna AD. Prospective analysis of 101 consecutive cases of laparoscopic cholecystectomy for acute cholecystitis operated with harmonic scalpel. Surg Laparosc Endosc Percutan Tech 2009;19(4):312-6.
6. Flowers JL, Bailey RW, Scovill WA, Zucker KA. The Baltimore experience with the management of acute cholecystitis. Am J Surg 1991;61(3):388-92.
7. Cox MR, Wilson TG, Luck AJ, Jeans PL, Padbury

RT, Toouli J. Laparoscopic cholecystectomy for acute inflammation of the gallbladder. Ann Surg 1993;218(5):630-4.
8. Giger U, Michel JM, Vonlanthen R, Becker K, Kocher T, Krähenbühl L. Laparoscopic cholecystectomy in acute cholecystitis: indication, technique, risk and outcome. Langenbecks Arch Surg 2005;390(5):373-80.
9. Bennett GL, Balthazar EJ. Ultrasound and CT evaluation of emergent gallbladder pathology. Radiol Clin North Am 2003;41(6):1203-16.
10. Eldar S, Sabo E, Nash E, Abrahamson J, Matter I. Laparoscopic cholecystectomy for acute cholecystitis: Prospective trial. World J Surg 1997;21(5):540-5.
11. Lo CM, Liu CL, Fan ST, Lai EC, Wong J. Prospective randomized study of early versus delayed laparoscopic cholecystectomy for acute cholecystitis. Ann Surg 1998;227(4):461-7.
12. Singer JA, McKeen RV. Laparoscopic cholecystectomy for acute or gangrenous cholecystitis. Am Surg 1994;60(5):326-8.
13. Kiviluoto T, Sirén J, Luukkonen P, Kivilaakso E. Randomized trial of laparoscopic versus open cholecystectomy for acute and gangrenous cholecystitis. Lancet 1998;351(9099):321-5.
14. Lujan JA, Parrilla P, Robles R, Marin P, Torralba JA, Garcia-Ayllon J. Laparoscopic cholecystectomy vs open cholecystectomy in the treatment of acute cholecystitis: a prospective study. Arch Surg 1998;133(2):173-5.
15. Navez B, Mutter D, Russier Y, Vix M, Jamali F, Lipski D, Cambier E, Guiot P, Leroy J, Marescaux J. Safety of laparoscopic approach for acute cholecystitis: retrospective study of 609 cases. World J Surg 2001;25(10):1352-56.
16. Chandler CF, Lane JS, Ferguson P, Thompson JE, Ashley SW. Prospective evaluation of early versus delayed laparoscopic cholecystectomy for treatment of acute cholecystitis. Am Surg 2000;66(9):896-900.
17. Soper NJ, Dunnegan DL. Routine versus selective intra-operative cholangiography during laparoscopic cholecystectomy. World J Surg 1992;16(6):1133-40.