ORIGINAL ARTICLE

Mini Cholecystectomy, a Feasible Option, where Laparoscopic Facilities are Lacking

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ABSTRACT

Aim: To assess the mini cholecystectomy in terms of conversion rate, operative time, post-operative hospital stay and postoperative complications at our institute where laparoscopic facilities are lacking.

Methods: This study included 110 patients who underwent mini-cholecystectomy through a transverse 5-7 cm incision at right subcostal region for symptomatic cholelithiasis at Gambat Institute of Medical Sciences from January 2015 to April 2016. Both sexes irrespective of age were included. Patients with choledocholithiasis, obstructive jaundice, portal hypertension and gall bladder malignancy were excluded from study.

Results: Mini-cholecystectomy was successful in 100(90.9%) cases, &10(11%) cases were converted in conventional cholecystectomy. Mean Operative time was 53.36 minutes & mean post-operative stay 2.49 days. The overall 11(10%) complications were observed.

Conclusion: Those hospitals who are lacking of laparoscopic facilities, Mini-cholecystectomy is a safe alternative procedure for the surgical treatment of gall stone disease having shorter operative time, less postoperative hospital stay and minimal complications.

Keywords: Mini-cholecystectomy, Cholelithiasis, Minimal invasive.

INTRODUCTION

Historically, cholecystectomy has been performed as a treatment of choice for gall stone disease. The credit of performing first ever cholecystectomy goes to Carl Langenbuch, who performed it on a male patient of 42 years age on 15 July 1882 in Berlin[1]. Since that time various incisions for cholecystectomy has been described, and the most commonly used are the right Para median and Kocher sub costal incision[2]. Mini-cholecystectomy was introduced by Goco and Chamber in 1983 with intent to decrease the morbidity and mortality associated with conventional cholecystectomy[3] and is defined as cholecystectomy performed through laparotomy incision less than 8cm long[4]. Since the late 20th century, laparoscopic cholecystectomy has remained the gold standard treatment of uncomplicated symptomatic gall stones[5,6], but in this technique more expert team work is required, moreover expenditure is high and it involves sophisticated expensive instruments which may not be available at most hospitals.

METHODS

This study included a total of 110 cases of gall stones disease. Study was conducted at surgical department Gambat Institute of Medical Sciences from January 2015 to April 2016. All the patients were admitted through surgical OPD having gall stones confirmed on ultrasonography. After admission, all the baseline investigation were advised, cardiac and anesthetics clearance were taken a day before surgery. Patients having choledocholethiasis, obstructive jaundice and having malignancy were excluded. The data of all patients were analyzed for age, sex, conversion rate, operative time, postoperative hospital stay and postoperative complications.

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Surgical Technique: Under general anesthesia a small transverse right subcostal incision 5-7cm in length was placed in skin overlying the fundus of gallbladder i.e., tip of 9th costal cartilage.After incising the skin subcutaneous fat was retracted with the help of retractors. The anterior rectus sheath was incised transversely and rectus muscle fibers were separated .After that posterior rectus sheath and the parietal peritoneum were incised to open the peritoneal cavity. Now by using the forehead light gallbladder was visualized. The calot's triangle dissected, the cystic artery and cystic duct were identified and divided between the ligatures. Next the gallbladder was separated from liver base by using diathermy. Finally, the area was checked for any bleeding, if any that was secured, drain left in and wound closed back in layers.

RESULTS

In this study of 110 patients, 15 patients were male, 95 were female with ratio 1:9, age average 40.5±12.90 ranged from 21-60 years and the peak incidence observed between 41-50 years (Table 1).

Table 1: Age Incidence (n=110)

Age of Group	n	%age
21-30	18	16.36
31-40	35	31.81
41-50	52	47.27
51-60	5	4.54

Table 2: Factors leading to conventional cholecystectomy (n=110)

Reason for conversion	n	%age
Ill-defined anatomy	5	5.5
hemorrhage	4	3.63
Dilated CBD	1	0.90

Table 3: Post-operative complications (n=110)

Complications	n	%age
Hemorrhage	4	3.63
Biliary leakage	2	1.81
Sub hepatic collection	3	2.72
Wound infection	2	2.72

The mean operating time was 53.36±15 minutes ranged from 30-80 minutes. Overall 10(11%) patients were converted in to conventional cholecystectomy due to various reasons including, ill-defined anatomy in 5(5.5%) cases, profuse hemorrhage in 4(3.63%) cases and 1(0.90%) patient with dilated CBD (Table 2). The mean postop hospital stay was 2.49±0.90 days & overall 11(10%) postoperative complications were observed, 4(3.63%) have bleeding, 2(1.81%) have bile leakage, 3(2.72%) have sub hepatic collection and 2(2.72%) cases develop wound infection, all were managed conservatively (Table 3).

DISCUSSION

Now a days, despite many recent innovations in the treatment of gall stones, cholecystectomy remains the treatment of choice[7].Various studies have reported that the results of mini-cholecystectomy are comparable with laparoscopic cholecystectomy[8], which induces minimal trauma and we believe that it has similar level of invasiveness as to laparoscopic approach[9].

Study about the conversion has been reported in literature. In a study conducted by Khan N et al have Observed 10% (10 out 0f 100 cases) conversion rate [10] .Mc Mohan and O`Dwyer have shown conversion rate of 10% and 9% respectively in their studies[11,12]. Nadia saeed et al have observed 5% conversion rate in 100 cases of mini-cholecystectomies while in the present study 10(11%) cases were converted in to conventional cholecystectomy which nearly correlates with national and international data.

The reasons for conversion varies in different studies, it may be due to ill-defined anatomy, profuse bleeding, bile duct injuries. Nadia Saeed has observed conversion due to ill-defined anatomy in 3% cases and in 2% cases due to haemorrhage. In present study 5(5.5%) cases were converted due to ill-defined anatomy, 4(3.63%) due to profuse bleeding and 1(0.90%) case due to bile duct injury which nearly correlates with other studies.

The study by Ahmed A et al have observed that the average operating time for mini-cholecystectomy was 62 minutes[13], while Nadia Saeed has reported 50 minutes as mean operative time which nearly correlates with present study where mean operating time was 53.36 minutes. However, acute and chronic inflammation of gall bladder is known to increase the level of difficulty in dissection and operative time[14,15].

Post-operative hospital stay and complications have been evaluated in various studies. Study by Seale and Ledet performed 1,207 mini-cholecystectomies , 89% patients were discharged in less than 12 hours after operation in whom o.3% were re-admitted, and low complications rate o.2% was observed in their series[16]. Study of 30 cases of mini-cholecystectomies by Thomas et al, 73.35% patients were discharged on operating day and neither complications nor readmission was observed[17]. Nadia Saeed et al have observed mean 2 days hospital stay in 100 cases of mini cholecystectomies with minimal complications[18], which correlates with present study where mean post-operative hospital stay was 2.49 days with a minimal complications. There was no mortality in this study as reported by Bhutta A et al in their studies[19].

Mini-cholecystectomy denotes acceptable operative time, quicker recovery, less complications, and better cosmetic results.

CONCLUSION

Mini-cholecystectomy is a safe operative procedure with shorter operative time, less post-operative stay, minimal complications rate and better cosmetic results. It should be recommended as procedure of choice where expertise or laparoscopic facilities are not available.

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