

ORIGINAL ARTICLE

Anatomical Changes after Gall Bladder Surgery in Patients Come in Tertiary Care Hospital a Clinical Study for Awareness of Disease in our Population

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ABSTRACT

The aims and objectives of this study were to find out the anatomical changes among patients after gall bladder surgery and to provide awareness of disease in our population. Laparoscopic cholecystectomy is a safe and effective treatment option for gallstone disease that can be performed at tertiary care hospital with minimal morbidity. The findings of current study described that a significant ($p < 0.05$) changes in mean standard deviation of BMI, Systolic BP, diastolic BP and serum levels of cholesterol, triglyceride, LDL and HDL after six months of cholecystectomy in both male and female were seen respectively. Because of these facts remarkable anatomical abdomen changes were identified in patients after six months of Laparoscopic and open cholecystectomy.

Keywords: Cholecystectomy, Laparoscopy, Cholelithiasis, Complications

INTRODUCTION

Gallbladder is a sac like structure under the liver it is a storage place of bile which is a secretion of liver and take active part in the digestion of fat by emulsification [3]. Because of different circumstances small and hard droplets deposit in the bile duct and gallbladder in the form of gallstones [9]. This is a common condition in which different complications like sharp abdomen pain, indigestion, fever, nausea, vomiting and jaundice etc. In these conditions the removal of gallbladder by laparoscopic procedure or by open gallbladder surgery might be the right choice [11]

Laparoscopic cholecystectomy is a modern procedure for the removal of gallbladder from the body cavity [4]. For this surgery surgeon makes little incisions on the right side of the abdomen and insert a very thin tube with a camera on the end [6]. Through this camera he follow gallbladder on screen and ultimately remove effected gallbladder from the other incision [7]. In open gallbladder surgery a large incision in applied on the abdomen and removed gallbladder manually from the biological system. In different studies and case reports it has concluded that laparoscopic cholecystectomy is less invasive than an open cholecystectomy [10].

The main complication after cholecystectomy is indigestion of fats, because after gallbladder removal human body takes time to adjust new methods and ways for digestion of fat by bile

emulsification [13]. Due to bile leakage and dehydration diarrhea and constipation are common indications among these patients [15]. In some cases intestinal injury and jaundice was also diagnosed. After cholecystectomy most of the patients develop obesity which leads to anatomical stress on human body [12].

MATERIALS AND METHODS

In this study total 60 individuals were selected those how were visited to tertiary care hospital with intensifying sharp abdomen pain in upper right portion. 38 patients were treated through laparoscopic cholecystectomy surgery whereas 22 were with open cholecystectomy. They were divided into two groups, Group-A was laparoscopic cholecystectomy group while Group-B was open cholecystectomy group. In laparoscopic cholecystectomy group total patients were 38 out of them 28 were male and 10 were female, on the other hand in open cholecystectomy group 12 were male and 10 were female. Blood pressure, lipid profile and BMI were measured of each individual at the time of surgery and after 6 month of surgery. ISSP-2020 was used to assess the raw data of all parameters statistically, and significant ($p < 0.05$) regression of distinct parameters was represented by (mean \pm standard deviation). For group comparisons, the Chi-square test was employed, and for group correlation, the t-test of one-way ANOVA was utilized.

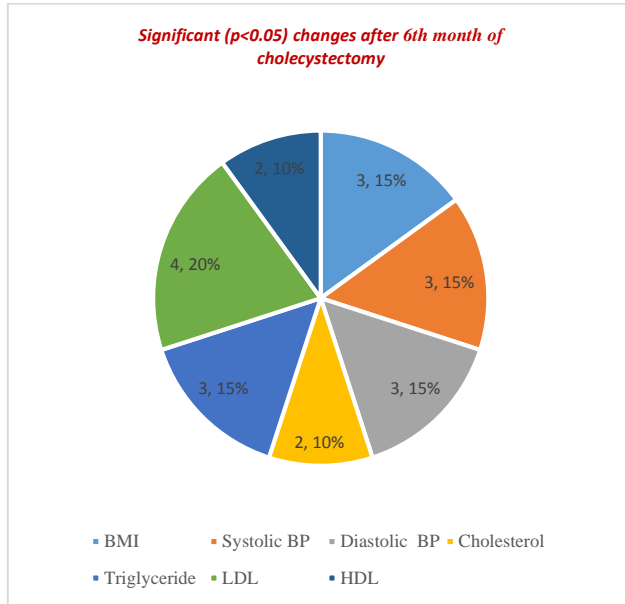
RESULTS

Group A: Laparoscopic cholecystectomy group (age= 25-35 years)

Parameters	SI-units	Mean \pm SD after 1 month n=28(male)	Mean \pm SD after 6 month n=28(male)	Mean \pm SD after 1 month n=10(female)	Mean \pm SD after 6 month n=10(female)	p<0.05
BMI	Kg/m ² .	20.3 \pm 1.12	22.3 \pm 1.12	18.3 \pm 1.12	20.3 \pm 1.12	0.00
Systolic BP.	mm.Hg	120.13 \pm 11.10	130.13 \pm 11.10	120.13 \pm 11.10	120.13 \pm 11.10	0.00
Diastolic BP.	mm.Hg	80.3 \pm 10.12	85.3 \pm 10.12	80.3 \pm 10.12	80.3 \pm 10.12	0.00
Cholesterol	mg/dl	170.2 \pm 3.9	210.2 \pm 3.9	158.2 \pm 3.9	200.2 \pm 3.9	0.00
Triglyceride	mg/dl	120.2 \pm 7.1	135.2 \pm 7.1	121.2 \pm 7.1	131.2 \pm 7.1	0.00
LDL	mg/dl	110.1 \pm 3.7	134.1 \pm 3.7	127.1 \pm 3.7	157.1 \pm 3.7	0.00
HDL	mg/dl	40.2 \pm 1.10	40.2 \pm 1.10	39.2 \pm 1.10	39.2 \pm 1.10	0.00

Group B: open cholecystectomy group (age= 25-35 years)

Parameters	SI-units	Mean \pm SD after 1 month n=12(male)	Mean \pm SD after 6 month n=12(male)	Mean \pm SD after 1 month n=10(female)	Mean \pm SD after 6 month n=10(female)	p<0.05
BMI	Kg/m ² .	20.3 \pm 1.12	21.3 \pm 1.12	18.2 \pm 1.11	20.6 \pm 1.10	0.00
Systolic BP.	mm .Hg	120.13 \pm 11.10	130.13 \pm 11.10	120.13 \pm 11.10	120.13 \pm 11.10	0.00
Diastolic BP.	mm.Hg	80.3 \pm 10.12	85.3 \pm 10.12	80.3 \pm 10.12	80.3 \pm 10.12	0.00
Cholesterol	mg/dl	160.2 \pm 3.9	200.2 \pm 3.9	149.2 \pm 3.9	200.2 \pm 3.9	0.00
Triglyceride	mg/dl	120.2 \pm 7.1	137.2 \pm 7.1	121.2 \pm 7.1	131.2 \pm 7.1	0.00
LDL	mg/dl	112.1 \pm 3.7	130.1 \pm 3.7	127.1 \pm 3.7	157.1 \pm 3.7	0.00
HDL	mg/dl	40.2 \pm 1.10	40.2 \pm 1.10	39.2 \pm 1.10	39.2 \pm 1.10	0.00



Current study was conducted in the surgery department with collaboration of anatomy department in a tertiary care center attached to a medical college. 60 patients of both sexes with acute abdominal pain were presented and after confirmation of cholelithiasis and its complications was done by ultrasonography (USG). The body mass index (BMI) is calculated by dividing the body mass by the square of the body height, and it is measured in Kg/m². Blood serum levels of cholesterol, Triglyceride, low density lipoprotein (LDL), high density lipoprotein (HDL) were measured by colorimeter kit method.

The mean standard deviation of BMI, Systolic BP, diastolic BP cholesterol, triglyceride, LDL and HDL at the time of laparoscopic cholecystectomy of male and female were (20.3±1.12, 120.13±11.10, 80.3±10.12, 170.2±3.9, 120.2±7.1, 110.1±3.7, 40.2±1.10), (18.3±1.12, 120.13±11.10, 80.3±10.12, 158.2±3.9, 121.2±7.1, 127.1±3.7, 39.2±1.10) and after six month (22.3±1.12, 130.13±11.10, 85.3±10.12, 210.2±3.9, 135.2±7.1, 134.1±3.7, 40.2±1.10), (20.3±1.12, 120.13±11.10, 80.3±10.12, 200.2±3.9, 131.2±7.1, 157.1±3.7, 39.2±1.10) respectively.

Similarly the mean standard deviation of BMI, systolic BP, diastolic BP cholesterol, triglyceride, LDL and HDL at the time of open cholecystectomy of male and female were (20.3±1.12, 120.13±11.10, 80.3±10.12, 160.2±3.9, 120.2±7.1, 112.1±3.7, 40.2±1.10), (18.2±1.11, 120.13±11.10, 80.3±10.12, 149.2±3.9, 121.2±7.1, 127.1±3.7, 39.2±1.10) and after six month (21.3±1.12, 130.13±11.10, 85.3±10.12, 200.2±3.9, 137.2±7.1, 130.1±3.7, 40.2±1.10), (20.6±1.10, 120.13±11.10, 80.3±10.12, 200.2±3.9, 131.2±7.1, 157.1±3.7, 39.2±1.10). A significant ($p < 0.05$) changes in mean standard deviation of BMI, Systolic BP, diastolic BP and serum levels of cholesterol, triglyceride, LDL and HDL after six months of cholecystectomy in both male and female groups were noted as compared with the time of surgery respectively.

DISCUSSION

Abusedera and Badry (2014) concluded in their study that gall bladder stones are a big health issue all over the world. Simple cholelithiasis is becoming more common, with over 700, 00 cholecystectomies performed Pakistan each year [3]. The south Asian population bears 60-70 percent its load. In Pakistan, gallstone disease affects 16% of the population [7]. According to a study conducted by Rahman et al (2015) in Hyderabad and surrounding areas, the rate of gall bladder surgery is on the rise in our country. Gall bladder surgery is more frequently conducted

than any other surgery for a single organ or illness at Mayo Hospital Lahore's south surgical unit. In different studies by many researchers stated that laparoscopic surgery is the most common procedure for gall stone illness at our facility, 86 percent male and 85 percent females like laparoscopic surgery respectively [10,7].

In present research, it was concluded that simple cholelithiasis was the most common diagnosis, followed by acute cholecystitis. We operated on 60 patients for gall bladder removal, with 63.33 percent undergoing laparoscopic surgery and 36.6 percent undergoing open surgery. A significant ($p < 0.05$) changes in mean standard deviation (Mean ±SD) of BMI, Systolic BP, diastolic BP and serum levels of cholesterol, triglyceride, LDL and HDL after six months of cholecystectomy in both male and female groups were noted as compared with the time of surgery respectively.

REFERENCES

1. Abusedera MA, El-Badry AM. Percutaneous treatment of large pyogenic liver abscess. *Egypt J Radiol Nucl Med* 2014 Mar 31;45(1):109–15.
2. Alvi AR, Ajmal S, Saleem T. Acute free perforation of gall bladder encountered at initial presentation in a 51 years old man: a case report. *Cases J* 2009;2:166.
3. American Society of Anesthesiology (ASA) physical status classification system ASA last approved; 2014 [].
4. Bedirli A, Sakrak O, Sözüer EM, Kerek M, Güler I. Factors effecting the complications in the natural history of acute cholecystitis. *Hepatogastroenterology* 2001;48:1275–8 [PubMed].
5. Date RS, Thrumurthy SG, Whiteside S, Umer MA, Pursnani KG, Ward JB, Mughal MM. Gallbladder perforation: Case series and systematic review *International Journal of Surgery*. 2012;(10)63-68.
6. Date RS, Thrumurthy SG, Whiteside S, Umer MA, Pursnani KG, Ward JB, Mughal MM. Gallbladder perforation: case series and systematic review. *Int J Surg* 2012;10(2):63–8.
7. Dericci H, Kamer E, Kara C, Ünalp HR, Tansug˘ T, Bozdog˘ AD, Nazli O. Gallbladder perforation: clinical presentation, predisposing factors, and surgical outcomes of 46 patients. *Turk J Gastroenterol: Official J Turk Soc Gastroenterol* 2011;22 (5):505–12.
8. Rahman V, Aslam R, Kosir P. Conservative management of type 2 gallbladder perforation in a Pakistani area . *World J Clin Cases: WJCC* 2015 Jul 16;3(7):671.
9. Gunasekaran G, Naik D, Gupta A, Bhandari V, Kuppusamy M, Kumar G, Chishi NS. Gallbladder perforation: a single center experience of 32 cases. *Korean J Hepato-Biliary-Pancreatic Surg* 2015;19(1):6–10.
10. Huang CC, Lo HC, Tzeng YM, Huang HH, Chen JD, Kao WF, et al. Percutaneous transhepatic gall bladder drainage: a better initial therapeutic choice for patients with gall bladder perforation in the emergency department. *Emerg Med J* 2007;24(12):836–40.
11. Karimian F, Aminian A, Mirsharifi R and Mehrkhani F. Surgical options in the management of cystic duct avulsion during laparoscopic cholecystectomy. *Patient Safety in Surgery* 2008, 2:17 doi:10.1186/1754-9493-2-17
12. Lin Hsin-Chi, Chen Tseng-Shing. Gallbladder perforation in cholecystitis with liver abscess formation and septic thrombophlebitis of portal vein mimicking presentation of liver malignancy. *Adv Digest Med* 2014;1(3):95–9.
13. Lo HC, Wang YC, Su LT, et al. Can early laparoscopic cholecystectomy be the optimal management of cholecystitis with gallbladder perforation? A single institute experience of 74 cases. *Surg Endosc* 2012;26:3301–6.
14. Lucarelli P, Picchio M, Martellucci J, Angelis FD, Filippo AD, Stipa F and Spaziani E. Drain After Laparoscopic Cholecystectomy for Acute Calculous Cholecystitis. A Pilot Randomized Study. *Indian J Surg (December 2015) 77(Suppl 2):S288–S292 DOI 10.1007/s12262-012-0797-9*
15. Picchio M, Angelis FD, Zazza S, Filippo AD, Mancini R, Pattaro G, Stipa F, Adisa AO, Marino G, Spaziani E. Drain after elective laparoscopic cholecystectomy. A randomized multicentre controlled trial. *Surg Endosc* (2012) 26:2817–2822 DOI 10.1007/s00464-012-2252-1.