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Original Article

Laparoscopic Cholecystectomy, A single Surgeon experience at Teaching Hospital Biratnagar, Nepal

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Abstract

Background

Laparoscopic cholecystectomy (LC) is a treatment of choice for symptomatic gall stone disease and is commonly done all over the country in general surgical practice. The aim of this study is to show the results of LC in our medical college.

Material and Methods

A retrospective analysis of the patients underwent laparoscopic cholecystectomy from July 2015 to September 2016 was carried out in NMCTH, Biratnagar. A total of 391 patients admitted through OPD of our Hospital underwent laparoscopic cholecystectomy were studied. All age groups and both sex were included.

Results

Out of 391 patients with symptomatic cholelithiasis, 385(98.46%) patients underwent successful laparoscopic cholecystectomy. Age range of patients in the study varied between 12-84 years and maximum patients (30.69%) were found in the age group of 31-40 years. There were 333(82.58%) female and 58(17.41%) male patients. Mean age of the patients was 39.61 years. Indication for surgery was symptomatic cholelithiasis. Conversion was done in 6(1.53%) cases due to unclear anatomy. A rare congenital anomaly, Accessory right hepatic duct with cystic duct continuous with it was encountered in 12-year boy; LC was done safely without injuring biliary tree. As postoperative complications, one patient developed biliary peritonitis which was managed by drainage tube.

Conclusion

Laparoscopic cholecystectomy is successfully being done for last 5 years in our institute. The results are comparable with those of published series. Anatomical variations and complications may present, for which care must be taken.

Key Words:

Congenital Anomaly, Laparoscopic cholecystectomy, Symptomatic Cholelithiasis

Introduction

Symptomatic gall stone is a common disease affecting human beings. The first open cholecystectomy was done by Langenbach in 1892[1]. Now laparoscopic

cholecystectomy has become the procedure of choice for symptomatic cholelithiasis and considered the gold standard [2]. In 1987 Philip Mouret performed the first LC in France [3]. The

advantages of LC over open cholecystectomy are a less postoperative pain, early discharge from hospital, faster recovery and better cosmesis [2]. This minimally invasive procedure started in Nepal around 1994 and now successfully being performed all over the country. LC is being performed at Nobel Medical College since last five years. Therefore, the aim of this study is to highlight the results of LC recently in our institute.

Materials and Methods

A retrospective study regarding the patients underwent laparoscopic cholecystectomy was conducted in Department of General and minimally invasive surgery, Nobel Medical college and Teaching Hospital, Biratnagar, from July 2015 to September 2016, after taking ethical clearance from Institutional Review Committee, Nobel Medical College & Teaching Hospital, Biratnagar. Among the total 391 patients admitted through surgical out door, 385 underwent successful LC. All the age groups and both sex were included. All the patients having symptomatic cholelithiasis diagnosed on the basis of history, clinical examinations and confirmed by ultrasonography of abdomen were included. All the patients with diagnosis of symptomatic cholelithiasis underwent standard four or three port Hasson's technique LC. Parameters included in the study were demographic data, incidence, age groups, duration of symptoms, length of hospital stay, complications and follow ups. Data were analyzed with SPSS software version 20.

Results

A total of 391 patients, 385 (98.46%) had undergone successful laparoscopic cholecystectomy. Out of them 333 (82.58%) were female and 58 (17.41%)

were male [Figure 1]. Therefore, female to male ratio was 5.74:1.

Age range of the patients included in the study varied between 12-84 years and maximum patients (30.69%) were in age group of 31-40 years [Table 1]. Higher numbers of female patients are seen in age groups 31 to 40 and 21 to 30 whereas higher number of males are seen in age groups 31 to 40 and 51 to 60 [Figure 2]. Mean age of the patients was 39.61 years and standard deviation is 3.02. Durations of symptoms of patients was greatly varied over weeks to years. Overall length of hospital stay varied between 3-5 days, with an average of 4 days. Conversion was done in 6 cases (1.53%) because of unclear anatomy due to dense inflammatory adhesions [Figure 3].

As a congenital anomaly, accessory right hepatic duct with cystic duct continuous with it was encountered in 12 year boy; LC was done safely without injuring biliary tree [Picture 1&2]. A female patient landed in emergency department on fifth postoperative day with features suggestive of biliary peritonitis, ultrasonography of abdomen revealed bilioma. She was managed conservatively with IV fluids, IV antibiotics and insertion of drainage tube inside peritoneal cavity, through which bile was drained out and gradually the output decreased over a week, drain removed and then patient was discharged.

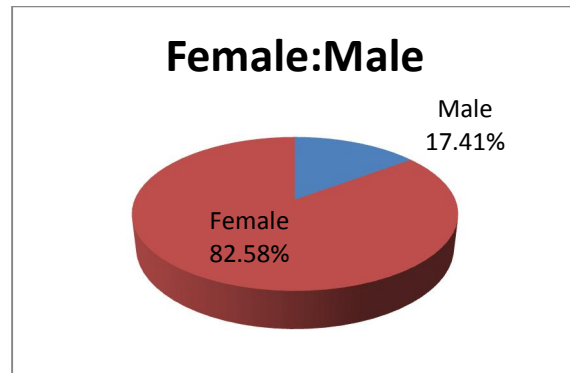


Figure 1: Female to Male ratio.

Age Group	Number	%
11 to 20	15	3.83
21 to 30	97	24.8
31 to 40	120	30.69
41 to 50	72	18.41
51 to 60	63	16.11
61 to 70	17	4.34
71 to 80	6	1.53
81 to 90	1	0.25
Total	391	100

Table 1: Distribution of the patients according to age group

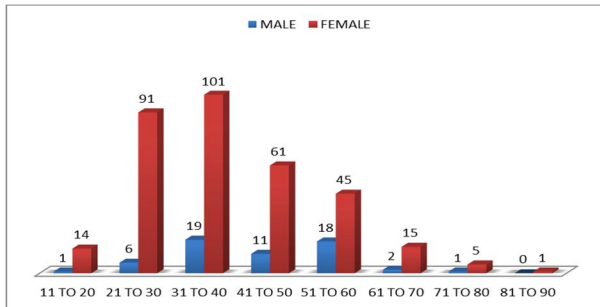


Figure 2: Female to male ratio according to age

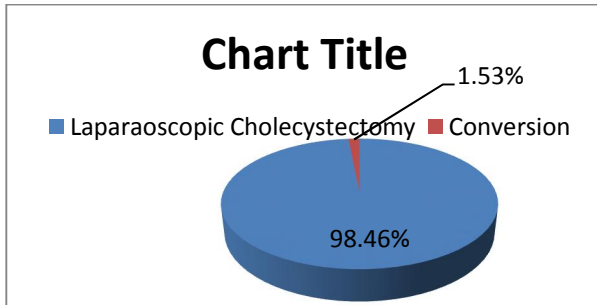
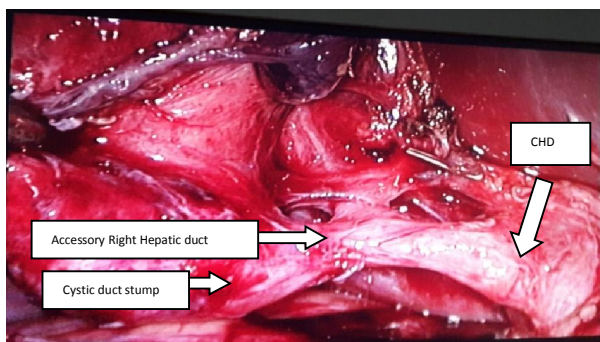
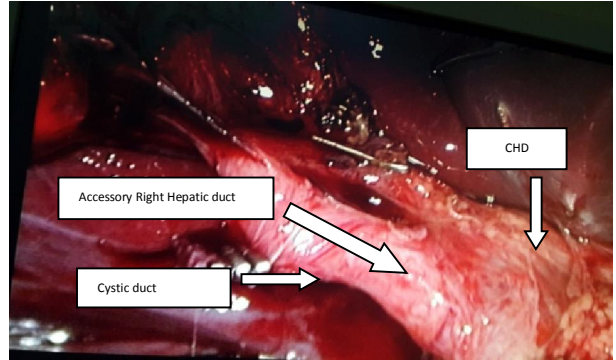


Figure3: Conversion rate of LC to open cholecystectomy



Picture 1: Accessory right hepatic duct continuous with cystic duct before clipping cystic duct.



Picture 2: Accessory right hepatic duct draining in CBD after clipping Cystic duct

Discussion

Laparoscopic cholecystectomy is very common surgical procedure in general surgical practice for symptomatic cholelithiasis. We are performing this minimal invasive technique at Nobel Medical College for last 5 years. So, here our experience and results of LC is being shared and compared with other published reports of LC.

In the present study, laparoscopic cholecystectomy was performed in 333 (82.58%) female, which is little bit higher but comparable with other study in which the incidence was 78.4% [4]. Age range of patients varied between 12-84 years with maximum patients in the age groups of 31-40 years which is comparable to Shrestha et al which also showed the maximum patients in age group 30-39 years[5]. Mean age of the patients was 39.61 years which is comparable to the study conducted by Shrestha et al which was 41 (18-75) years[5]. Indications for surgery in different studies were symptomatic cholelithiasis; history of biliary colic, dyspepsia, biliary pancreatitis, chronic calculous cholecystitis that is similar to this study. The patients were discharged on 1st or 2nd postoperative day which is comparable with other study [5]. Conversion was done in 6 patients (1.53%). which is low as compared to other studies [6-10]. Conversion rate in

studies conducted by Sakpal et al, Livingstone et al and Abdul Hussain was found to be 4.9%, 5-10% and 3.5% respectively [4,11,12]. The incidence is found to be low reason might be the growing experience of surgeons.

In a 12 year boy with history of repeated attack of biliary colic, accessory right hepatic duct continuous with cystic duct was found, gall bladder was inflamed with adhesions. LC was performed safely without injuring the right hepatic duct. This is a rare congenital anomaly [13]. Joo et al have stated that the anomaly has been found in upto 4% of necropsies [14]. A study conducted by Yu J et al showed 7.4% of this anomaly [13]. In studies conducted by Kullman et al and by Devi et al (2013) they found that accessory hepatic ducts are the most common EHBT abnormalities. Khayat et al found accessory hepatic ducts in only 3.33% [15].

A female patient landed on 5th postoperative day with features suggestive of biliary peritonitis, may be leakage from accessory bile duct of Luschka or minor duct injury at operation which was unnoticed. She was managed with drainage tube with good recovery. Accessory minor bile ducts may get injured at the time of LC which is also seen in other studies [16]. Recent studies suggest that clinically relevant bile leaks complicate approximately 0.4–1.2% of cholecystectomies. Injury to a subvesical duct is one of the most common causes of Cholecystectomy associated bile leak [17]. Other studies have shown that the chance of major bile duct injury is higher in laparoscopic cholecystectomy than open cholecystectomy i.e. 0.3–0.7% and 0.1–0.2% respectively [7,18].

Conclusion

It can be concluded that Laparoscopic cholecystectomy can be successfully performed, however, anatomical variations may present, for which knowledge and

care is necessary and a few complications may arise which may need immediate surgical attentions. With adequate exposure to LC, it can be performed safely. Although there were few limitations of this study that has to be considered for future as the study is conducted in a single center with small sample size.

Reference

- [1]. Bittner R, Laparoscopic surgery—15 years after clinical introduction, *World journal of surgery*. 30:7 (2006) 1190-203.
- [2]. Walker Reynolds J, The first laparoscopic Cholecystectomy, *JLS, Journal of the Society of Laparoendoscopic Surgeons, Society of Laparoendoscopic Surgeons*. 5:1 (2001) 89.
- [3]. Kaiser SC, National-institutes-of-health consensus development conference statement on gallstones and laparoscopic Cholecystectomy, *American Journal of Surgery*. 165:4(1993) 390-8.
- [4]. AbdulHussein BJ, HusseinYF, Nawar AH, Al-Naggar RA, Conversion Rate of Laparoscopic Cholecystectomy to Open Surgery at Al Karamah Teaching Hospital, Iraq, *Surgical Science*. 6:5 (2015) 221.
- [5]. Shrestha S, Pradhan G, Bhoomi K, Dhital A, Bhattachan CL, Review of laparoscopic cholecystectomy in Nepal Medical College Teaching Hospital, Nepal Medical College Journal. 9:1 (2007).
- [6]. Cuschieri A, Dubois F, Mouiel J, Mouret P, Becker H, Buess G, Trede M, Troidl H, The European experience with laparoscopic Cholecystectomy, *The American journal of surgery*. 161:3 (1991) 385-7.
- [7]. Deziel DJ, Millikan KW, Economou SG, Doolas A, Ko ST, Airan MC, Complications of laparoscopic cholecystectomy: a national survey of 4,292 hospitals and an analysis of 77,604 cases, *The American journal of surgery*. 165:1 (1993) 9-14.
- [8]. Scott TR, Zucker KA, Bailey RW, Laparoscopic cholecystectomy: a review of 12,397 patients, *Surgical Laparoscopy Endoscopy & Percutaneous Techniques*. 2:3 (1992) 191-8.
- [9]. Club SS, Postoperative analysis of 1518 laparoscopic cholecystectomies, *N Engl. J. Med*. 324 (1991) 1685-8.
- [10]. Wolfe BM, Gardiner BN, Leary BF, Frey CF, Endoscopic cholecystectomy: an analysis of complications, *Archives of Surgery*. 126:10 (1991) 1192-8.

- [11]. Livingston EH, Rege RV, A nationwide study of conversion from laparoscopic to open Cholecystectomy, *The American journal of surgery*. 188:83 (2004) 205-11.
- [12]. Sakpal SV, Bindra SS, Chamberlain RS, Laparoscopic cholecystectomy conversion rates two decades later, *JSLs, Journal of the Society of Laparoendoscopic Surgeons*. 14:4 (2010) 476.
- [13]. Yu J, Turner MA, Fulcher AS, Halvorsen RA, Congenital anomalies and normal variants of the pancreaticobiliary tract and the pancreas in adults: part 1, biliary tract, *American Journal of Roentgenology*. 187:6 (2006) 1536-43.
- [14]. Joo YE, Kim HS, Choi SK, Rew JS, Cho CK, Kim SJ, Congenital anomalous connection between the left intrahepatic bile duct and the stomach, *J Gastroenterol*. 37:11 (2002) 961-5
- [15]. Khayat MF, Al-Amoodi MS, Aldaqal SM, Sibiany A, Abnormal Anatomical Variations of Extra-Hepatic Biliary Tract, and Their Relation to Biliary Tract Injuries and Stones Formation, *Gastroenterology Research*. 7:1 (2014) 12-6.
- [16]. Ahmad F, Saunders RN, Lloyd GM, Lloyd DM, Robertson GS, An algorithm for the management of bile leak following laparoscopic Cholecystectomy, *The Annals of The Royal College of Surgeons of England*. 89:1 (2007) 51-6.
- [17]. Schnelldorfer T, Sarr MG, Adams DB, What is the duct of Luschka?—a systematic review, *Journal of Gastrointestinal Surgery*. 16:3 (2012) 656-62.
- [18]. Vecchio R, MacFadyen BV, Latteri S, Laparoscopic cholecystectomy: an analysis on 114 005 cases of United States series, *Inter Surg*. 83:3(1997)215–9.