

■ *Short Communication*

Laparoscopic cholecystectomy: an experience of university hospital in eastern Nepal

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Abstract

Introduction: Laparoscopic cholecystectomy has become the standard treatment for symptomatic gall stones disease. Objective of this study to assess the safety of this procedure, to audit the conversion and bile duct injury rates and the factors which influence these. **Methods:** A total of 346 laparoscopic cholecystectomy over a six months period (15 April 2010 to 14 October 2010) with their demographics and ethnic group, conversion to open operation and bile duct injury were recorded. Pre operative, operative and the relevant data were collected prospectively. A chi square test was done to determine significance of any differences between subgroups. **Results:** Male to female ratio was 1:4. The most common indication for surgery was biliary colic/dyspepsia (51%), cholecystitis (chronic- 49.4%, acute- 12%), pancreatitis, gallbladder polyp, history of recurrent attacks 16.5%, obesity 19.1%. 128 were operated by consultant, 170 by junior consultants, 48 were by senior residents. There was no statistically significant difference found in the duration of surgery between consultants and junior consultants ($P=0.264$), however significance between consultants and senior residents ($P<0.001$) was observed. **Conclusion:** Despite limited resources, laparoscopic cholecystectomy is feasible and safe for gallstones disease even in developing country like Nepal.

Keywords: cholecystectomy, laparoscopic, minimally invasive, surgical procedure.

Introduction

Gallstone disease is one of the most common conditions encountered in general surgical practice. Laparoscopic cholecystectomy, since its introduction in the late 1980s has grown quickly in its acceptance and has now become the standard treatment for symptomatic gallstones disease. Despite this, it remains a procedure with an inherently steep learning curve, with the potential for serious complications. The present study aims first to assess the safety of this procedure at the Department of Surgery, B P Koirala Institute of Health Sciences, Dharan, Nepal. Secondly, it seeks to audit the conversion and bile

duct injury rates among the laparoscopic cholecystectomies performed by the department, and the factors which influence these.

Methods

B P Koirala Institute of Health Sciences is a teaching hospital in Eastern Nepal. Clinical and operative notes of all patients who underwent laparoscopic cholecystectomy from 15 April 2010- 14 October 2010 (6 months) were reviewed prospectively. Demographics such as age, sex were recorded. Included all patients who will undergo laparoscopic cholecystectomy for symptomatic gall stones disease, asymptomatic gall stones and children below 10 years were excluded from this study. All cases of conversion to open operation and bile duct injury were identified and the reasons for each recorded. The X²- test is

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used to determine significance of any differences between the subgroups.

Results

A total of 346 patients underwent laparoscopic cholecystectomy in the 6 months period. Two hundred and eighty five (82.4%) were female and 61 (17.6%) male. The age of the patients ranged from 13 to 78 mean 41 years. Table 1 shows the breakdown of the cases according to indication for surgery. Duration of symptoms to the patient ranged from 1 month to 10 years with mean 10.25 months, history of jaundice was found in 5 patients. Fifty seven patients had history of recurrent attack, episode ranged from 1 to 6 attacks, obesity found in 66 (19.1%) of patients and history of previous surgery found in 42 (12%). One hundred twenty eight (37%) patients were operated by consultant surgeons, 170 (49.1%) by junior consultant surgeons, while 48 (13.9%) were by senior residents. There were no statistically significant difference found in the duration of surgery between consultants and junior consultants (P=0.264), however significant between consultants and senior residents (P=<0.001). Surgery performed by Consultant with mean 55.82 min with range of 20-180 min, with junior consultant mean of 59.18 min range of 20-270 min, while with senior resident mean duration of laparoscopic cholecystectomy 70.10 min with range of 30-160 minutes.

Table 2 shows details of operative findings during laparoscopic cholecystectomies. Intraoperative laparoscopic findings like adhesions were present in 117 (33.8%) patients, spillage of bile while in 109 (31.5%), rupture of gall bladder in 32 (9.2%), spillage of stone in 27, bleeding in 35 patients and there was a single case of bile duct injury among 346 cases, giving us a bile duct injury rate 0.3%. This occurred in a 43 years female who underwent an elective laparoscopic cholecystectomy for biliary colic due to abnormal anatomy of biliary system (severely contracted GB with fused cystic duct). However the injury was recognized intra-operatively and the procedure converted to open operation. The injury was then repaired by doing hepatico-jejunostomy. The patient had an uncomplicated postoperative course and was followed up for 6 months postoperatively and doing well. Need open conversion in 10 (2.9%) female 8, male 2 of the

patients, between sub groups among Consultant 4, junior consultant 5 and senior resident number of 1 patient need for open conversion. Table 3 shows number of and reasons for conversion.

Table 1. Cases according to indication for surgery

Indication	No. patients (%)
Cholecystitis	213 (52%)
Acute cholecystitis	42
Chronic cholecystitis	171
Colic/ dyspepsia	178 (44%)
Gall bladder polyp	11 (3%)
Pancreatitis	3 (1%)

Table 2. Operative findings:

		No. patients (%)
Gallbladder	Distended	310 (89.6%)
	Contracted	34 (9.8%)
	Normally distended	2 (0.6%)
Wall thickness	Normal	279 (80.6%)
	Thickened	67 (19.4%)
Calot's triangle	Normal	318 (91.9%)
	Abnormal	28 (8.1%)
	Frozen	14
	Adhesions	11
	others	3
Cystic duct	Normal	313 (90.5%)
	Abnormal (short, long, wide)	33 (9.5%)
Common bile duct	Normal	342 (98.8%)
	Abnormal (dilated)	4 (1.2%)

Table 3. Numbers of and reasons for conversion Reason for conversion

Reason for conversion	No. patients
Anatomical (inability to visualize calot's triangle)	5
Bleeding	1
Bile duct injury	1
Cholecystogastric fistula	1
Gall bladder fundal growth	1
Transverse colon adhered with GB	1

Discussion

There is a significant variation in the published conversion rates (from 3.6 to 13.9%) and bile duct injury rates (from 0.32 to 0.6%) for laparoscopic cholecystectomies performed worldwide.¹⁻⁴ This is probably caused by differences in patients selection as well as differences in institutional and individual practice. At our institution, the overall conversion and bile duct injury rates are 2.9% and 0.3% respectively. These rates are comparable to those published in other international studies. Thus, we can conclude that our institutional laparoscopic cholecystectomies for gall stones disease is the procedure effectively and safely to our patients.

The most important factor that influenced conversion rates was not surprisingly, the indication for surgery. It is interesting to note that the most common reasons for conversion, namely, inability to visualize Calot's triangle, bleeding and are both attributable to a large extent to inflammation around the gallbladder. It is also important to note that in our institution, as would be expected elsewhere, the cases which are expected to be difficult would be operated on by more experienced surgeons. Thus, this would have bearing on the conversion rate for Consultants cases as well.

Interestingly the conversion rate was significantly higher in female (8 vs 2 patients) compare to men. However, usually conversion rate is higher in males compared to female which was observed by

Tarcoveanu et al⁵ in a study published in 2002. So, the present study alone cannot account for the conversion rate among the female patients being more than four times than of the male ones.

Conclusion

The present study has shown that despite limited resources, laparoscopic cholecystectomy is feasible and safe for gallstones diseases even in developing country like Nepal.

References

1. Cuschieri A, Dubois F, Mouiel J et al. The European experience with laparoscopic cholecystectomy. *Am. J. Surg.* 1991; 161: 385-7.
2. Liu CL, Fan ST, Lai ECS et al. Factors affecting conversion of laparoscopic cholecystectomy to open surgery. *Arch. Surg.* 1996; 131: 98-101.
3. Richardson MC, Bell G, Fullarton GM. Incidence and nature of bile duct injuries following laparoscopic cholecystectomy: an audit of 5913 cases. *Br. J. Surg.* 1996; 83: 1356-60.
4. Ooi LL, Goh YC, Chew SP et al. Using a risk score for conversion from laparoscopic cholecystectomy: a collective experience of four teaching hospitals and results for repair. *Aust. N. Z. J. Surg.* 1999; 69: 844-6.
5. Tarcoveanu E, Epure O, Zugun F et al. Male gender- difficultly factor in cholecystectomies for cholelithiasis. *Revista Medco-Chirurgicala a Societatii Medici Si Naturalisti Din Iasi.* 2002; 106: 768-72.