Day case laparoscopic cholecystectomy in Sudan

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Abstract

Background: Laparoscopic surgery faces lots of constraints in the less developing countries

The aim: To audit day-case laparoscopic cholecystectomy in our set up in Sudan.

Method: Prospective collection of data for 602 consecutive laparoscopic cholecystectomies. 136 patients were discharged 10 hours after surgery. They were selected according to clinical and social criteria. Pain, nausea and vomiting, operative time, period of hospitalization and patient satisfaction were studied.

Results: 136 patients operated as day case have mean (±SD) age 46.92(± 14.95) years and ASA score I (n = 122), II (n = 14) and their mean operative time (±SD) was 61.62 (±24.17) (range 25-150) min. There was no conversion or common bile duct injury. 122 patients were pleased with the day case procedure, 12 were satisfied and two thought that overnightstay could have been better.

Conclusion: Success of day case laparoscopic cholecystectomy is reflected by the annual steadily increasing number of patients from 25 in 1998 to 50 in 2002. Good planning, patient selection, and encouragement of early mobilization make post-operative hospitalization unnecessary in the majority of cases.

Key words: Ambulatory cholecystectomy, laparoscopic cholecystectomy.

Introduction

After open cholecystectomy in Sudan patients are kept in hospital for several days. In addition, their relatives gather together and stay with them in hospital according to the deep-rooted traditions and customs. Not only that, but the patients are allowed thereafter sick leave for several weeks. This attitude definitely leads to less productivity in the society. With globalization of information technology laparoscopic cholecystectomy (LC) came into practice in Sudan in 1995[1,2,3,4,]. From 1998 to date laparoscopic cholecystectomy is being conducted as day-case procedure. The purpose of this study is to audit day case laparoscopic cholecystectomy in our set up in Sudan. To our best of knowledge this is the first paper in day case LC from this part of the world.

Patients and methods:

From 1995 through August 2002 all patients presenting to the Sudan Surgical Clinic suffering from symptomatic gallstone disease were offered laparoscopic cholecystectomy (LC) after reasonable explanation of the procedure. The data were collected in a prospective fashion to compare the results of day case patients to those who stayed overnight after LC.

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Selection criteria:

1- ASA score I and II, 2- Residence not far from the city center with telephone and easy traffic facilities.

Patients with ASA score III (n=1), portal hypertension (n=4), early pregnancy (n=3), Sickle cell disease (n=3) were stayed overnight for observations.

136 patients were considered suitable for day case procedure. The nature of operation and likely postoperative course were explained in reasonable details and informed consent was obtained. Conventional 4-port laparoscopic cholecystectomy was performed in all patients. Awareness of anaethesia was overcommed with Fluthane (Halothane, ICI India) or Diprivan (Propofol –Astrazeneca UK). Intubation was done with conventional endotracheal tube. However, in 94 patients laryngeal mask was used. Postoperative pain, nausea and vomiting were noted and later correlated to Fluthane or Diprivan. Prophylactic s.c. 5000 units of heparin was used for 188 patients. The end points were patient impression at follow up as excellent, acceptable or unexpected.

Statistical analysis:

Data was fed to Statistical Package of Social Sciences version 6 (SPSS, Inc., Chicago, Illinois, USA). Univariate and multivariate analysis as well as Mantel-Haenszel $\chi 2$ test for

linear association were computed with statistical significance level taken at P <0.05.

Results

From April 1995 through August 2002, 602 patients underwent laparoscopic cholecystectomy. They were 81(13.5%) males and 521 (86.5%) females. 466 patients stayed overnight with mean (± SD) age 46.63 (±13.68) range 11-80 years. Their operative findings showed 282 (60.5%) chronic calcular cholecystitis, 88(18.9%) acute calcular cholecystitis, 81 (17.4%) mucocele, and 7(1.5%) empyema gallbladder. Cholecysto-duodenal fistula was encountered in 3(0.6%), perforated gallbladder in 2 (0.4%), and carcinoma in 3 (0.6%) patients. In 56 patients the cystic duct was too wide to be safely controlled by endoclips, so, intracorporeal 2/0 Polyglactin (Vicryl – Ethicon) ligatures were applied.

136 (22.6%) patients were discharged in less than nine hours. They have mean (±SD) age 46.29 (±14.95) (range 22-80) years with a male to female ratio of 13:123. The mean (±SD) operative time was 61.62 (±24) (range 25-150 min). Their operative findings revealed 94(69.1%) chronic calcular cholecystitis, 22(16.2%) acute calcular cholecystitis, 16(11.8%) mucocele and 4(2.9%) empyema of gallbladder. In eight patients the cystic duct was too wide to be safely controlled by the endoclip, so, intracorporeal 2/0 polyglactin ligatures were applied. 124 (91.2%) patient had smooth course during surgery.

In 10 patients diathermy dissection led to perforation of gallbladder. All dropped stones were retrieved followed by wash and suction. No mortality was encountered in this series. Comparison of data of day case surgery patients to those who stayed overnight is shown in tables 1, 2 and 3. Of the 602 patients 21(3.5%) had conversion to open cholecystectomy. No common bile duct injuries occurred. There was no conversion in the day case LC group with Fisher's exact test one tail (P 0.0042) Two tail (P 0.0065).

Univariate and multivariate analysis did not show statistical significant difference between day case patients and those who stayed overnight regarding comparison of symptoms (Sig. t 0.3453 Std. Err 0.0280), physical signs (Sig. t 0.2784 Std. Err 0.0374) and ultrasound findings (Sig. t 0.9386 Std. Err 0.0422) respectively. However, the operative findings showed significant difference between the two groups (Sig. t 0.0543 Std. Err. 0.0472) (table 1). Also, there was significant difference in associated illnesses in the two groups (Sig. t 0.0053 Std. Err 0.1209).

Fluthane was used in 512 patients and Diprivan in 90 patients. Fluthane was associated with nausea in 66 patients while Propofol was followed by nausea in 5 patients (P 0.0468). Also, vomiting occurred in 36 patients in the Fluthane group as compared to one patient after Propofol (P 0.0312).

Table 2: Comparison of Day case LC with Overnight stay

	Day case (n=136)	Overnight stay (n=466)	P
Mean (SD) age Range	±14.9 years 22-80 years	46.7 ±13.3 years 11-80 years	
Male:female	13:123	68:398	
ASA I II III	122 14 00	364 092 010	
Fluthane Propofol	110(80.9%) 26 (19.1%)	402 (86.3%) 64 (13.7%)	
ETT Laryngeal mask	106(77.9%) 30 (22.1%)	383 (86.3%) 64 (13.7%)	0.0381
Intracorporeal vicryl ligature for wide cystic duct	08	56	0.2767
Postoperative pain	05	34	0.6999
Conversion	00	21 (3.5%)	0.0118
Patient impression Pleased Satisfactory Unexpected	 120 13 00	 392 065 09	

Discussion:

Laparoscopic cholecystectomy is currently the most favoured approach when facilities exist because it is associated with less postoperative pain, short hospitalization period and early return to work. Studies from Canada[5], Italy[6], Netherlands[7] and USA[8,9] have reported that day case laparoscopic cholecystectomy is feasible and safe and has less burden on nursing[10,11] but this practice does not seem to be common in developing countries where social ties force large number of relatives to stay in hospital with their patients.

Our results are also similar to that of private hospitals in developing countries[12, 13] and like others[14] we feel that adoption of selection criteria for day case LC adds to the safety measures and success of the procedure.

The two groups of patients i.e. day case and overnight stay patients are comparable in their age, sex, symptoms and signs. However, day case LC patients fulfil our criteria of selection having mild symptoms, less severe signs and they live not far away from the city centre with good communication facilities. Ultrasound findings did not predict severe pathology before surgery. This could be explained by the fact that ultrasound is operator dependent. Difference in pain tolerance, obesity and difficulty in detecting cancer, cholecysto-duodenal fistulae increased the conversion rate in the overnight stay group.

In the follow up period 120 patients reported their impression on day case LC as excellent, 12 were satisfied and two thought that overnight stay could have been better. This result is in keeping with similar documented patient preference to day case LC[15].

Although we didn't have readmission in this series, we feel that readmission should be expected according to the events during surgery as predicted by Simpson JP in 1999[16].

In this study we found that Fluthane is followed by nausea (P 0.0468) and vomiting (P 0.0312) more than propofol. The prevalence of postoperative nausea and vomiting was reported previously not to be reduced by promethazine prophylaxis[17]. We use a regimen of 75mg Diclofenac plus 10 mg metoclopromide I.M. after induction of anaethesia and pethidine after full recovery. With this regimen the frequency of postoperative nausea and vomiting was not that high.

In this study 411 patients were housewives and were able to conduct their household activities 3 days after surgery and felt fully recovered within 10 days of surgery. On the other hand 191 employees were able to return to their work within two weeks time. This result is in keeping with results of prospective studies from USA[18] and UK[19] that found day case LC to be safe and cost effective.

Conclusion:

Day case laparoscopic cholecy-stectomy is feasible, acceptable by patients in our society with results comparable to those in the developed world.

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