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Laparoscopic cholecystectomy as a 'session' surgery

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Abstract

Aims: To introduce laparoscopic cholecystectomy to our Day Surgery Unit and assess the implications of a 6 h postoperative stay in unselected patients. *Methods*: A retrospective analysis of data was performed in which the case notes of a series of 170 consecutive patients undergoing day case laparoscopic cholecystectomy were studied. All patients with symptomatic gallstones were considered for day case laparoscopic cholecystectomy. Patients were excluded if there was major medical co-morbidity but not solely on the basis of age or Body Mass Index (BMI). Surgery was performed in a dedicated Day Surgery Unit and cholangiography was performed selectively. All patients were assessed at 6 h postoperatively for discharge and followed up by telephone at 24, 48 h and 2 weeks postoperatively. *Results*: Of 170 patients 121 (71.1%) were discharged at 6 h, 116 reported no problems and were satisfied with day case treatment. Two (1.6%) patients required a GP visit at home within 24 h and three (2.5%) patients required readmission. Forty-nine (28.9%) patients required admission, the commonest cause for admission being postoperative pain and nausea (10.6%) in approximately equal proportions. Three were admitted as they had open surgery. One patient required further surgical intervention (laparoscopy). *Conclusion*: Laparoscopic cholecystectomy as a 'session' surgery, with planned discharge 6 h after operation, is successful in the majority of unselected patients even though a significant number of overnight admissions are to be anticipated.

Keywords: Laparoscopic cholecystectomy; Session surgery; Day case surgery

1. Introduction

In recent years laparoscopic cholecystectomy has become the standard treatment for symptomatic gallstones, based on reduced abdominal discomfort, shorter hospital stay and earlier return to normal activity [1].

The Audit Commission Report of 1990 encouraged more widespread use of day case procedures [2] and improvements in anaesthesia have led to a reduction in postoperative discomfort and nausea, making this possible. There have been several studies in the last decade confirming the feasibility and cost-effectiveness of performing laparoscopic cholecystectomy as a day case procedure in selected patients [1,3–6].

Some authors have questioned the safety of performing this procedure on a day basis and strict selection criteria have been proposed [6–9].

A study was conducted in our centre showing that, even in unselected patients, discharge at 6 h after laparoscopic surgery was feasible and safe in the majority of patients [4]. We used this as a basis to introduce laparoscopic cholecystectomy with a 6 h postoperative stay to our day surgery unit. The purpose of this study was to review our experience over the last 3 years.

As 'day case' surgery has been varyingly interpreted as that requiring just one overnight stay or as discharge within 24 h of admission, we have labelled this as 'session surgery' to reflect the fact that patients were discharged within 6 h of the operation.

2. Methods

All patients with symptomatic gallstones were considered for day case laparoscopic cholecystectomy. Patients were excluded at the time of initial out-patient consultation or at the preoperative visit to the day surgery unit 2 weeks before the proposed operation if

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they had major medical co-morbidity or inadequate social support; but not solely on the basis of age, Body Mass Index (BMI) or any clinical features of gallstone disease. Procedures performed during an inpatient episode following emergency admission were excluded from this study. These included acute cholecystitis not settling on conservative management, laparoscopic cholecystectomy done during admission for acute pancreatitis. All cases undertaken in the 42 months, between February 1998 and August 2001, were reviewed.

Patients were invited to attend the Day Surgery Unit 2 weeks before the scheduled operation and were seen by the surgeon, anaesthetist and a nurse. This allowed confirmation of indication for surgery, exclusion of complications whilst on the waiting list, standard anaesthetic assessment and clarification about the social support available. The company of a responsible adult was requested not only on the day and night of the operation but also for the following 24 h. Patients were given clear information about what to expect and written consent was obtained at this stage.

Patients were admitted to the dedicated day surgery unit in the morning. Oral Ciprofloxacin (750 mg) and 3500 U of Tinzaparin [subcutaneous low molecular weight heparin] were given for wound infection and DVT prophylaxis, respectively. Surgery was performed on a morning operating list, in a dedicated day surgery theatre by one consultant surgeon or his team under direct supervision. Cholangiography was performed selectively based on a history of jaundice, deranged liver function tests on preoperative biochemistry or intra-operative findings. All patients had a vacuum drain to the gall bladder fossa. Local anaesthetic (0.5% bupivacaine) was infiltrated into the wounds.

All patients were reviewed between 4 and 6 h postoperatively by a member of the operating team. Patients' fitness for discharge was assessed at 6 h postoperatively primarily by nursing staff. Patients were then followed up by telephone calls at 24, 48 h and 2 weeks postoperatively by a member of the unit's nursing staff. A record was kept of patients who were transferred for inpatient stay and the notes of these patients were recalled retrospectively for this study.

3. Resu1ts

One hundred and seventy patients were included in the study (147 (86.4%) female, 23 (13.6%) male), the mean age was 45.95 years (range 21–77). Of these, 121 patients (71.1%) were discharged home at 6 h postoperatively. There was no significant age or sex difference between the discharged and admitted groups.

The reasons for admission were established retrospectively from the patients' notes (Table 1). Of 49 patients who had an overnight stay, 44 patients' notes were available for analysis. The most common causes for admission were pain and nausea in almost equal proportions, accounting for 36.7% of admissions (10.6% of all patients undergoing laparoscopic cholecystectomy) (Table 1). Four patients were admitted at the request of the surgeon on the basis of difficult dissection and all of these patients were discharged at 24 h. Three patients (6.1% of admissions) required conversion to open surgery (1.8% conversion rate).

Table 1
Outcome in 170 unselected 'day case' laparoscopic cholecystectomy patients

Outcome	Number of patients	Total (%)
Discharged home same day	121	71.1
Admitted on day of surgery	49	28.9
Abdominal pain	8	4.7
Nausea	10	5.9
Drowsiness	4	2.3
Elective by surgeon	4	2.3
Elective by anaesthetist	3	1.8
Open surgery	3	1.8
Drain output	5 (include 1 bile leak)	2.9
CBD exploration [laparoscopic]	1	0.5
Social reasons	2	1.1
Other (↑↓BP, chest pain etc.)	4	2.3
Notes unavailable	5	2.9

Three patients (1.8%) were admitted overnight electively by the anaesthetist on the basis of history of coexisting medical conditions (one cerebro vascular accident, one paroxysmal atrial fibrillation), including one patient who was monitored on the High Dependency Unit overnight for left ventricular failure. In all three the decision to admit overnight was made prior to operation.

One of the admitted patients required further surgery at 24 h with laparoscopy, peritoneal drainage and reinsertion of drain for bile leak from an accessory biliary radical in the gall bladder fossa. Following this, the leak settled conservatively and the patient made an uneventful recovery.

Three (2.5%) of the discharged patients required readmission following discharge. One of these presented within 24 h with nausea and vomiting and was found to have a paralytic ileus, which resolved within 3 days. A further patient was readmitted at 36 h with severe upper abdominal pain and suspected bile leak, but was found on ultrasound scanning to have an abdominal wall haematoma, which settled on conservative management and the patient was discharged within 48 h. The medical team readmitted one further patient with pleuritic chest pain, which settled conservatively, again within 48 h. No significant cause was found.

Following telephone follow up, all patients expressed satisfaction with their treatment on a day case basis,

except one patient who in retrospect would have preferred to have stayed for pain relief as an inpatient.

4. Discussion

There has been a change in approach over the last few decades with procedures previously requiring inpatient care, such as inguinal hernia repair, being performed routinely on a day case basis. The feasibility of performing laparoscopic cholecystectomy has been proven in several studies over the last decade with a good degree of success [3–6]. The Audit Commission report of 1990 encouraged the expansion of day case surgical services and more major procedures such as laparoscopic cholecystectomy would appear to lend themselves to this [2].

As provision of day case surgery expands, an increasing number of medically stable patients of ASA grade III are utilising day surgery facilities [4]. Caution has been advised by some authors, concerned by the possibility of failure to recognise major and potentially life-threatening complications in patients managed as outpatients and they advocate strict criteria for selection of patients suitable for day case laparoscopic cholecystectomy [7]. Our study was set out to show that patients can be listed for day laparoscopic cholecystectomy on the same basis as any other day case procedure and that the majority of patients would be suitable for discharge at 6 h postoperatively without any detriment to their care.

The difference should also be stressed between day case, as in our practice with 6 h stay, and some studies which have included patients who were admitted overnight, yet stayed less than 24 h in hospital. It has been observed that, whilst this does reflect the tendency towards earlier mobilisation and shorter hospital stay, it does not truly represent a day case or outpatient procedure [8]. If we chose this definition, 94% of our patients were discharged within 24 h.

The key difference in our practice is that unselected patients are offered day case treatment if they have no serious co-existing medical conditions when they attend the day surgery unit 2 weeks prior to their procedure and can arrange for a companion at home for the 2 days following the procedure. This preoperative visit not only allows screening for co-morbidity, but also introduces the patient to the unit, allowing the patient an explanation of day case treatment and a realistic expectation of outcome. Assessment is carried out by surgeon, anaesthetist and nurse, thus minimal review is required on the day of surgery. Similar preoperative visits have been advocated in other studies [3].

Anticipation of the commonest reasons for unsuitability for discharge postoperatively (pain, nausea, drowsiness) found in the feasibility study have been key to reducing the number of patients unsuitable for same day discharge from 68.8 to 28.9% [4]. The key to this is anaesthetic technique and premedication with analgesic and antiemetic agents and, therefore the anaesthetist has a key role in allowing day case treatment. Despite these advances, pain, nausea and drowsiness still accounted for 45% of overnight admissions. Improvements in anaesthetic methods with advances in anaesthetic drugs resulting in a lower incidence of the postoperative symptoms of nausea, vomiting and drowsiness as well as improvement in analgesic methods and drugs will undoubtedly reduce the admission rates. About 66% of all admitted patients could have been easily managed on a 23 h stay ward and this is our next planned development which would prevent unexpected admissions impinging upon elective beds.

Safety remains the paramount concern and seven (5.1% of total, 18.9% of admitted) patients were admitted 'electively' by either the surgeon or anaesthetist on the basis of operative or anaesthetic concerns even though patient appeared well and ready to go home. Of these patients who were thought to have benefited from a prolonged period of observation, none suffered any serious complication prolonging their inpatient stay. Two patients were kept in because expected social support at home was not available. This awareness will undoubtedly contribute to patients' safety and a resulting low readmission rate. Though some other studies [10] show much lower admission rates, (less than 10%), their patient satisfaction surveys indicate that 33% of those operated on day cases would have preferred to have had the procedure as an inpatient, which justifies our higher admission rates especially considering the fact that our patients were not selected on the basis of age or BMI for day case procedure.

Three patients were readmitted during this study, none of which required further surgical intervention or suffered serious complications or detriment from being discharged on the day of surgery. Indeed only one patient was readmitted in the first 24 h, the other two patients re-presented with problems not evident at 24 h, and therefore, an overnight postoperative admission would not have prevented their readmission. Only one out of 170 patients expressed dissatisfaction with day case treatment on follow up by telephone 2 weeks postoperatively.

We conclude that whilst safety is paramount, day case laparoscopic cholecystectomy is feasible and desirable in the majority of patients, even without strict selection criteria or on medical grounds. We believe good patient motivation and arrangements for social support especially from the patient's family is more important. A significant number of overnight admissions and even a number of later readmissions should be accepted. This said, our rates of admission compare favourably with

other studies in selected patients [3,5]. We have a surgical and anaesthetic team who are enthusiasts for laparoscopic surgery but we believe these results could be repeated anywhere. If extrapolated nationally, this technique could not only impact on patient waiting times for the treatment of cholelithiasis, but also result in significant cost savings. This, and not simply small scars, is the true potential of laparoscopic surgery for gallstone disease.

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