

Outpatient laparoscopic cholecystectomy. A prospective study with 100 consecutive patients

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Abstract

One hundred patients with cholelithiasis were included in a prospective consecutive follow-up study to evaluate laparoscopic cholecystectomy in a day surgical setting. The median operating time was 70 min. In 96% of the patients, it was possible to perform peroperative cholangiography. The median time off work was 7 days and the median time to full recovery was 14 days. Five patients were admitted due to weakness/nausea. Six patients were admitted due to conversion to open surgery or choledocholithiasis. Eighty-nine patients were treated in ambulatory surgery. We conclude that laparoscopic outpatient cholecystectomy can be performed safely with a low unplanned admission rate. © 2001 Elsevier Science B.V. All rights reserved.

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1. Introduction

Outpatient or day case laparoscopic cholecystectomy has been undertaken in several centres in the world and is reported in series both from North America [1–3] and Europe [4,5], but has not yet been introduced as a routine in Scandinavia. It has been shown to be less expensive than inpatient surgery [1,6] and it can be performed with high patient satisfaction [5,7,8].

In our department we have a tradition of day surgery in herniorrhaphy, proctology, etc. Laparoscopic cholecystectomy has been our standard treatment for cholelithiasis but the patients have traditionally been admitted routinely for at least 1 day postoperatively. As a preparation for outpatient surgery we made a prospective evaluation of a series of 48 admitted laparoscopic cholecystectomies in 1996. The patients were treated as if they were outpatients but they were all admitted. Forty-two patients stayed one night and six patients stayed two nights due to pain. We found that

no major complications occurred after 6 h postoperatively. According to that experience we designed a protocol for outpatient laparoscopic cholecystectomies. In our department the mean hospital stay after a planned inpatient laparoscopic cholecystectomy is 1.5 days (36 h).

2. Materials and methods

From January 1998 to April 1999, 100 consecutive patients with cholelithiasis documented by ultrasonography who were scheduled for planned outpatient laparoscopic cholecystectomy were included in the study and were prospectively registered in a protocol. The mean age was 41 yr (18–61) and mean body mass index 27 (17–39). Another 255 patients underwent laparoscopic cholecystectomy as inpatients in our department during the same period.

To be eligible to participate in the study the patients should be able to communicate without interpretation and have a responsible adult at home. They should not have had a history of choledocholithiasis or pancreatitis

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and the liver enzymes and amylase preoperatively should be normal. On ultrasonography there should not be a dilatation of the bile ducts. Only American Society of Anesthesiologists Physical Status Classification System I–II patients were included.

Thorough written and oral information of the procedure was given to all patients. One week ahead of the operation the patients were seen at the day surgical clinic by the surgeon, the anaesthetist and a day surgical nurse on a short outpatient visit.

Preoperatively, 1 g Paracetamol suppository and 8 mg Ondansetron i.v. was given as the only premedication. All patients were intubated and received standardised i.v. anaesthesia with Propofol/Alfentanil/Rocuronium.

A standard four trocar laparoscopic cholecystectomy with as low intra-abdominal pressure as possible was performed by experienced laparoscopic surgeons. Peroperative cholangiography was performed as a routine. By the end of the procedure all patients received 75 mg Diclofenac i.m. and 100 mg Tramadol i.v. Bupivacaine 5 mg/ml was given in the wound edges.

Postoperative pain was evaluated with visual analogue scale (VAS, 0–10) after 2 and 4 h in the clinic, by telephone in the evening and on the following morning. Tablets of Diclofenac, Tramadol and Paracetamol for 24 h of treatment were sent home with the patients. They were encouraged to take the prescribed medication. They also received three suppositories of Ketobemidon to use in case of severe pain. A relative picked the patient up in the hospital and stayed with the patient at home until the next morning.

The nurse who was responsible for the postoperative period at the day surgical clinic was on-call via a cellular phone during the first evening and night. She

called the patients in the evening and on the following morning. If she needed advice, she called the surgeon on-call.

Follow-up was also done via questionnaire, which was given to the patients when discharged. Eighty patients returned the questionnaire. Ten patients were reached by telephone and 10 were lost to follow-up. These patients were checked against the computerised patient booking system in the county. No one had been visiting a hospital or doctor's office in the county due to postoperative problems. According to the answers the patients were seen selectively at the clinic.

3. Results

Thirty patients had chronic cholecystitis and five acute cholecystitis. The median intra-abdominal pressure was 9 mmHg (8–14). Peroperative cholangiography was performed in 96 patients. The median operating time was 70 min.

Median VAS regarding pain was 2 or lower during the first postoperative 24 h (Fig. 1). Sixty patients needed extra analgesics during the first postoperative hours and four in the first postoperative evening. The next morning, nine patients needed extra analgesics.

The nurse on-call did not receive any extra phone calls from the patients but she called everyone in the evening and on the following morning. There was no need to consult a surgeon during the first evening or on the postoperative morning.

The mean postoperative stay at the day surgical unit was 6 h for 89 patients. Eleven patients were admitted (Table 1). Three of those were converted to open cholecystectomy because of technical difficulties in pa-

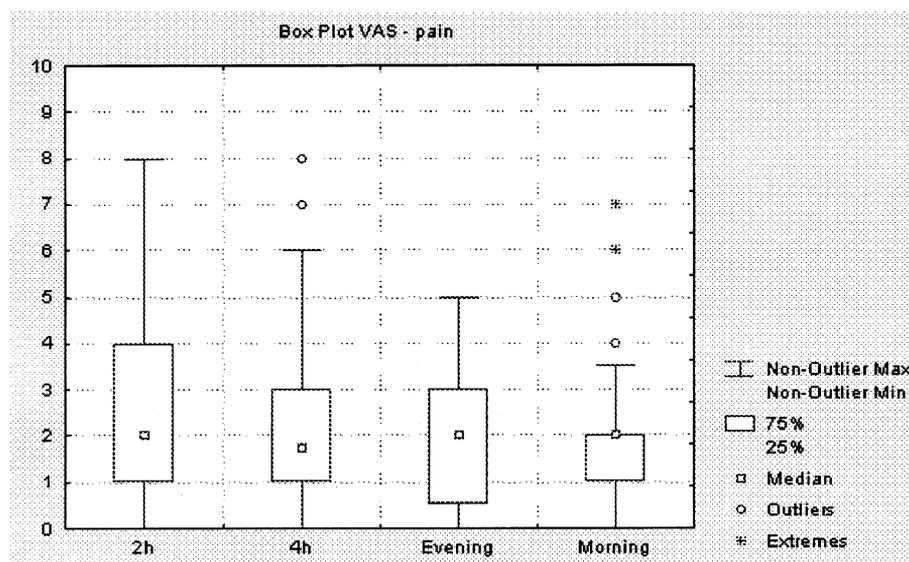


Fig. 1. Postoperative pain (VAS)

Table 1
Admitted Patients

Reasons for admittance	Number	Hospital stay (days; mean)
Chronic cholecystitis (conversion to open surgery)	4	2.2
Choledocholithiasis – ERCP postop.	2	4
Weakness/nausea	4	1
Pain	1	1
Total	11	

tients with severe chronic cholecystitis. One was converted to open choledocholithectomy because of severe chronic cholecystitis with the neck of the gall bladder adherent to the Common Bile Duct and multiple choledocholithiasis. Two patients had choledocholithiasis and had an Endoscopic Retrograde Cholangio Pancreaticography done postoperatively. Four patients were admitted due to weakness/nausea and one due to pain. One patient was admitted 30 h after surgery because of nausea and weakness. She was discharged the next morning.

No major complications occurred. Eight minor complications were recorded: two wound infections in trocar sites, two cases of urinary retention in women who needed a urinary catheter for 2 days, one trocar site hernia and three patients had nausea and could not take anything orally on the first postoperative morning. The latter returned to the day surgical department and were treated with antiemetic drugs and i.v. fluids and returned home after a few hours with no further problems. The median time off work was 7 days (0–46) and the median time to full recovery was 14 days (0–60).

4. Discussion

With reductions in real terms healthcare funding and hospital beds, a transference from inpatient surgery to outpatient surgery is needed if hospitals are to be able to provide care for all patients and diagnoses [6]. A large group of patients that could be transferred from inpatient to outpatient surgery are patients with cholelithiasis. If outpatient laparoscopic cholecystectomy could be done safely with a low admittance rate it would reduce cost [1–3] and it could be performed with a high patient satisfaction [4,5].

Postoperative pain needs particular attention in a day surgery setting. The pain after laparoscopy can be reduced by keeping the intra-abdominal pressure low, injection of local anaesthesia in the port sites, by evacuation of all CO₂, and by thorough patient information [9–11]. There is controversy as to whether i.p. administration of local analgesics should be done. Some authors have shown effect [12–14] while others have not shown

any significant effect [15,16] in pain reduction after i.p. administration of Bupivacaine. In our study we used low intra-abdominal pressure, local Bupivacaine infiltration in the port sites and thorough patient information with a close follow-up in an effort to reduce the postoperative pain.

Residual CBD stones is one of the reasons for readmission after outpatient laparoscopic cholecystectomy [3]. By the routine use of perioperative cholangiography (96%) we did not have any case of residual CBD stones.

In 1998 the mean postoperative hospital stay for admitted patients after laparoscopic cholecystectomy was 1.5 days in our department. Eighty-nine of the 100 patients planned for ambulatory surgery could return home as planned, thereby saving an estimated 130 days of hospital stay.

Our results indicate that it is possible to perform laparoscopic cholecystectomy as an ambulatory surgical procedure with a low morbidity and a low unplanned admission rate.

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