

Initial experience of laparoscopic cholecystectomy in a district hospital

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SUMMARY

Fifty-five consecutive unselected patients were submitted for laparoscopic cholecystectomy, and the procedure completed laparoscopically in fifty cases. The outcome is presented with particular reference to the duration of surgery, postoperative pain and nausea, the length of hospital stay and the time taken to recover normal activities. This technique is shown to have major advantages over conventional gallbladder surgery for the majority of patients.

INTRODUCTION

Cholecystectomy has been the treatment of choice for symptomatic gallstones for many years. The operation of cholecystectomy has a record of safety, but it is painful for the patient, and is expensive in terms of hospitalisation and time taken off work. It is also associated with a certain morbidity in terms of chest problems and thromboembolic complications in the postoperative period. In recent years attempts have been made to reduce the impact of this operation by using techniques such as gallstone dissolution and lithotripsy. These have so far proved rather unsatisfactory, in that only a minority of patients are suitable for these types of treatment, and they all leave a diseased gallbladder in place, which means symptoms can continue and gallstones may reform. More recently, advances in television camera technology have made possible the operation of laparoscopic cholecystectomy. Since this procedure was first reported from Paris in May 1988,¹ it has been adopted in many centres world-wide and, although so far only small series have been reported, it does appear to offer a considerable benefit in terms of patient discomfort, hospitalisation time, time off work and, ultimately, cost.^{2,3}

Between May and August 1991, 55 cholecystectomies have been performed at South Tyrone Hospital, 50 of them laparoscopically. We present the results of our experience with this new technique to date.

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PATIENTS AND METHODS

Fifty-five consecutive patients presented with gallbladder disease and were offered cholecystectomy according to the usual criteria. There were 41 females and 14 males aged 19 to 75 years (mean age 46). One patient was operated on as an emergency with severe biliary colic, the others were all booked via the outpatient clinic. All patients had liver function tests and ultrasound scans of their bile ducts performed preoperatively, and in all cases the liver function tests were normal and ultrasound revealed no evidence of stones in the common bile duct. All patients were offered laparoscopic cholecystectomy, with the proviso that conversion to an open operation would take place if this proved impossible or too difficult. There were no exclusion criteria in this series.

All patients were managed according to the following regimen:

PREMEDICATION: All patients received suppositories containing 100 mg diclofenac sodium (Voltarol — Geigy Pharmaceuticals) two hours before surgery. In addition, where the patient seemed very anxious, an anxiolytic agent such as diazepam 10 mg or tempazepam 20 mg was also given orally. A few patients with severe dyspeptic symptoms received ranitidine 150 mg.

ANAESTHESIA: This was induced with a standard dose of sodium thiopentone. All patients were intubated with the help of a muscle relaxant and respiration was controlled throughout the operation. Anaesthesia was maintained with N₂O₂ and halothane or isoflurane, with additions of droperidol and an opiate analgesic in appropriate doses. The following parameters were monitored: ECG, non-invasive blood pressure, O₂ saturation (pulse oximetry), and end-tidal CO₂ (capnography).

SURGERY: The actual technique of laparoscopic cholecystectomy was similar to that described by Reddick and Olson,⁴ except that a diathermy hook was used for the dissection rather than a laser. Four trocars were inserted into the abdomen, one at the umbilicus, one in the epigastrium just to the right of the falciform ligament, one just below the right costal margin in the mid-clavicular line and one lower down in the right flank. Ligaclips were used on the cystic artery and duct, except in two cases where the duct was very large, where a catgut 'Endoloop' was used instead. No operative cholangiograms were performed on any of these patients. At the end of the procedure, the gallbladder was withdrawn via the umbilical incision. In five cases the operation was converted to an open cholecystectomy, due to adhesions in three patients, a very inflamed gallbladder in one, and an empyema in the fifth.

Patients were interviewed on the first postoperative day and information recorded regarding the incidence of nausea and vomiting, and the severity and location of pain, and all drugs administered.

In the fifty patients who had successful laparoscopic cholecystectomy the time taken to perform the various stages of the operation was recorded. Patients were discharged when they were mobile and on a normal diet — usually the following day. They were all reviewed one week later and a questionnaire completed. Each patient was asked how long it had taken them to return to normal activities and how much analgesia they had required. They were also asked to score on a visual analogue scale the severity of their symptoms (from 0 to 100) from their

gallbladder disease, and their experience of the operation (from 0 = 'What operation?' to 100 = 'The worst experience imaginable!'). In those patients in whom it was applicable, the time taken before returning to work was also recorded.

RESULTS

50 laparoscopic cholecystectomies were performed. The times taken to perform the various stages of the operation were as follows:

	<i>Minimum</i>	<i>Median</i>	<i>Maximum</i>
Anaesthetic time (mins)	45	98	190
Operating time (mins)	30	70	170
Gallbladder dissection (mins)	15	40	145

30 patients (78%) were discharged the following day, and a further six (12%) went home on the second postoperative day. Of those patients not discharged the next day, one had had a recent myocardial infarction and was transferred to a medical ward. One patient already suffered from multiple sclerosis which delayed recovery, a few patients complained of postoperative nausea with subsequent delay in discharge, and some patients remained in hospital briefly because of social reasons. The mean duration of postoperative hospital stay was 1.3 days. There were no surgical complications in any of these patients, and none developed any respiratory or thromboembolic problems.

Of the 50 patients having laparoscopic cholecystectomy, 26 (52%) suffered from nausea and of these 19 actually vomited. All the 19 patients who vomited were given specific antiemetics (cyclizine 50mg or metoclopramide 10mg). While 13 patients settled with one injection, six required repeated injections of either drug. Forty patients complained of pain in the right upper quadrant, but only two felt that the pain was severe and unbearable, while the rest claimed that the pain was slight to moderate. In addition, 25 also reported slight generalised 'ache' all over their abdomen and 13 complained of generalised 'stiffness' all over their body. Shoulder pain occurred in 14 patients (28%), mainly on the right side, but in three cases it was bilateral. Amongst 40 patients who did complain of pain, only 2 needed an opiate analgesic for relief, the rest were pain-free with mild analgesics such as diclofenac suppositories and/or paracetamol orally.

Time taken to return to normal activities ranged from one day to 14 days (median four days). Time taken to return to work (for those in whom it was applicable) ranged from three days to 21 days (median 12 days). As most of these operations were performed on a Wednesday, this meant a return to work on the second Monday after the operation for the average patient. On the visual analogue scale, the mean score awarded to the operation by the patients at review was 23 (range 3 to 76), compared with a mean score of 67 (range 0 to 95) for the symptoms of their disease.

Some comparative data were obtained by reviewing the case notes and anaesthetic records of fifty patients undergoing conventional surgery (open cholecystectomy with operative cholangiogram) prior to beginning the laparoscopic programme. This showed a median total anaesthetic time of 60 minutes and a mean postoperative hospital stay of 5.4 days. It was also noted in this

group that there was one postoperative chest infection which was significant in that it delayed the patient's discharge from hospital by one week.

DISCUSSION

Recently reported results from the United States⁵ have suggested that laparoscopic cholecystectomy is the treatment of choice for the majority of patients. The conversion rate to open operation at experienced centres has been reported at 3·5 – 6·9%.^{2,5} In our series the conversion rate was 9%, which seems reasonable for a centre where the technique is just being developed. It would be expected that with increasing experience, the conversion rate would fall. The procedure appears safe and no surgical complications were experienced.

One point of concern to surgeons is that the operation takes longer than a conventional cholecystectomy. This is certainly true, but in our experience the extra time spent was not felt to be excessive. With experience, dissection became quicker, and a graph plotted of gallbladder dissection time against experience for one surgeon does appear to show such a trend, but this was not statistically significant.

Postoperative nausea and vomiting during the first 24 hours is the most disturbing side-effect. Whilst no 'in-depth' study was carried out, it is our impression that this is unrelated to the type of anaesthetic drugs used or the duration of the anaesthetic. Pain appears not to be a problem. All but two patients were comfortable with simple analgesics only, which is a distinct advantage over an open procedure, particularly for patients with diminished respiratory function.

We feel that laparoscopic cholecystectomy is a safe, cost-effective alternative to open surgery for the majority of gallstone sufferers. We routinely offer this operation to all patients, with the proviso that conversion to an open operation may be required. The reduction in postoperative pain is dramatic, and the only problem encountered was some early nausea and vomiting. Laparoscopic cholecystectomy may well come to be the treatment of choice in the future.

POSTSCRIPT

As of 5th February 1992, 101 laparoscopic cholecystectomies have been completed on 108 patients submitted to this procedure (conversion rate 6·5%). Of the last fifty patients, only two have required conversion to open surgery. There have been no significant complications, and the mean duration of postoperative hospital stay remains 1·3 days. This work represents the learning experience of two consultant surgeons, two registrars and eleven visiting surgeons who have attended two training courses held at South Tyrone Hospital.

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