

# Postcholecystectomy symptoms. A prospective study of gall stone patients before and two years after surgery

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**SUMMARY** The results of cholecystectomy in terms of symptomatic improvement were prospectively evaluated in 124 unselected gall stone patients interviewed before and two years after elective surgery. Indications for cholecystectomy were biliary pain (n=65), previous complications of gall stone disease (n=52), and flatulent dyspepsia (n=7). At two years 93 patients could be re-evaluated, of whom only 49 (53%) were completely symptom free. Postcholecystectomy symptoms occurring in the remaining 44 patients were mainly flatulent dyspepsia (which had relapsed in 22 of 46 patients who suffered it preoperatively), dull abdominal pain or diarrhoea. Incisional hernia was present in five patients and one had recurrence of pain because of retained common bile duct stones. Symptomatic cures after cholecystectomy decreased with the duration of the preoperative history. The results reconfirm that cholecystectomy eradicates specific symptoms and complications of gall stone disease, but they also show that nearly one half of operated patients are dissatisfied with the procedure because of mild but distressing 'postcholecystectomy' symptoms. These are probably caused by previously undiagnosed functional gut disease associated with, but unrelated to, gall stones. A systemic approach to multisymptomatic patients with gall stones is recommended.

Cholecystectomy, one of the most common surgical procedures done in western industrialised societies,<sup>1,2</sup> is widely acknowledged to be a safe, simple operation which definitively eradicates gall stones in the vast majority of patients. Many patients, however, are dissatisfied with the procedure because of lack of improvement or relapse of symptoms initially attributed to the presence of gall stones or because of the emergence of new gastrointestinal complaints presumably related to the operation. These so-called postcholecystectomy syndromes<sup>3</sup> range from mild ill defined digestive symptoms to severe attacks of abdominal pain and jaundice. Reports on large series of surgical gall stone patients<sup>4,5</sup> have shown that close to two thirds of cholecystectomised subjects appear to have satisfactory results, around one third disclose mild postcholecystectomy problems, and no more than 5% suffer from severe distress in relation to retained bile duct stones, surgical biliary tract lesions or problems therefrom.

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Received for publication 9 April 1987.

The commonest, albeit most elusive postcholecystectomy syndrome is flatulent dyspepsia, a term which encompasses various and generally coexisting symptoms including early satiety, postprandial epigastric and right upper quadrant pain or discomfort, flatulence, nausea, eructation and fatty food intolerance.

The present study was designed to ascertain the prevalence of postcholecystectomy symptoms, with emphasis on dyspepsia, in a group of gall stone patients prospectively evaluated before and two years after gall bladder surgery.

## Methods

### PATIENTS

From February 1982 to March 1983, 130 unselected patients scheduled for elective cholecystectomy at the general surgical wards of a large urban university hospital were asked to enter the study. Requisites for entry were a clear documentation of gall stones by either oral cholecystography or echography, unimpaired mental status – that is, ability to give a

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coherent account of past and present symptoms, and non-emergency surgery.

Cholecystectomies had been indicated for presumably symptomatic and/or complicated gall stone disease by either local referring physicians or staff members from the hospital's medical services, all caring for patients within the Spanish Public Health system. The patients were instructed about the purpose of the study, and told that two years later they would be recalled to assess the results of cholecystectomy. The study protocol was approved by the Ethics Committee of the Hospital Clínic i Provincial, University of Barcelona, in January 1982.

Six patients did not agree to come back for follow up, and the remaining 124 filled a detailed questionnaire and were personally interviewed before surgery by one of the authors (ER). The patient's sex and age were recorded, and a complete history of abdominal symptoms was obtained, with attention to duration of illness, frequency and severity of biliary pain (defined as a steady pain in the epigastrium or right hypochondrium, accompanied by nausea or vomiting, lasting for at least one hour, associated or not with food ingestion but not predictable on eating, unrelated to bowel motions and unassociated with discomfort on urination), and presence or absence of dyspepsia (said to be present when dyspeptic symptoms, defined as above, occurred at least once per week on the patient's usual diet). The existence of complications of gall stone disease (jaundice, acute pancreatitis, and/or acute cholecystitis) was ascertained by both clinical history and review of medical charts. The patients were also asked what they expected from the operation and how had the eventual outcome of surgery been discussed by their physicians.

Clinical data and indications for surgery in these 124 patients are summarised in Table 1. In seven patients (5%), careful questioning and chart review could not elicit other reasons for cholecystectomy than the presence of flatulent dyspepsia.

After cholecystectomy, the surgical reports were

Table 1 Demographic features, symptoms, and indications for surgery in 124 patients submitted to elective cholecystectomy

	Indications for cholecystectomy		
	Biliary pain	Complication of gall stone disease	Dyspepsia
	n=52	n=52	n=7
Sex	56 F/9 M	37 F/15 M	6 F/1 M
Age, yr ( $\bar{x} \pm SD$ )	55 $\pm$ 16	62 $\pm$ 14	49 $\pm$ 9
Biliary pain (n)	65 (100%)	25 (48%)	0
Dyspepsia (n)	36 (55%)	15 (29%)	7 (100%)

reviewed to determine operative events and occurrence of common bile duct exploration.

Two years after cholecystectomy, all patients were contacted by either telephone or letter, and a questionnaire about postcholecystectomy symptoms was sent. The patients were also given an appointment for a personal interview, which, to avoid any bias, was given by another author (DZ) who was blinded with respect to the data recorded two years previously.

## Results

### PATIENT'S EXPECTATIONS FROM GALL BLADDER SURGERY

When specifically asked what they expected from cholecystectomy, all patients hoped to be cured of biliary pain and to avoid further attacks of acute cholecystitis, pancreatitis or jaundice, and these expectations had been conveyed by their physicians. On the other hand, 50/58 patients with dyspepsia assumed that it would disappear after gall bladder removal, either because they thought it was related to gall stones even though this subject had not been discussed with their doctors (n=28), or because all symptoms had been attributed to gall bladder disease by their physicians (n=22, including seven with dyspepsia as the only indication for surgery). Eight patients doubted that dyspeptic symptoms would be cured (four patients had been told that the results of cholecystectomy were unpredictable as it regards dyspepsia, while another four patients with symptoms of indigestion long before gall stones were diagnosed had their own assumption that cholecystectomy was unlikely to cure them).

### RESULTS OF CHOLECYSTECTOMY AFTER TWO YEARS

Ninety three of 124 patients (75%) were available for re-evaluation two years after gall bladder surgery. Reasons for non-compliance in the 31 remaining cases were as follows: four patients had died (one from gall bladder cancer and three from cholecystectomy unrelated conditions), 20 could not be located at the previously recorded addresses or telephones, six refused to come back, and one missed her appointment. These 31 patients were similarly distributed among the three groups of indications for cholecystectomy specified in Table 1.

### POSTCHOLECYSTECTOMY DYSPEPSIA

Of the 58 patients with dyspepsia preoperatively, 46 (79%) were available for follow up. At two years, dyspeptic symptoms had recurred in 22 patients (48%). In 12, dyspepsia reappeared on resuming normal food intake after surgery, while in 10, symp-

toms returned later, between six and 20 months postoperatively. Postcholecystectomy dyspepsia was present similarly in patients whose indications for surgery were biliary pain or complications of gall stone disease (41% and 50%, respectively), whereas four or five (80%) of those whose sole indication for surgery was dyspepsia had symptomatic recurrence.

#### OVERALL RESULTS

Two years after cholecystectomy, 49/93 (53%) patients were completely symptom free and satisfied with the procedure. The remaining 44 patients experienced a variety of symptoms, for which many of them had sought medical attention and undergone repeated examinations. There were 56 symptom complexes in these 44 patients, namely: 22 cases of recurring dyspepsia as described, 20 patients complaining of chronic dull upper abdominal pain (usually referred as due to the surgical scar), eight with loose stools and relapsing bouts of more abundant watery diarrhoea, five with full blown incisional hernia, and one with attacks of severe abdominal pain who had recently been treated with endoscopic sphincterotomy for retained common bile duct stones. Except for the latter patient, biliary pain was absent in all cases, and no subsidiary episodes of jaundice or pancreatitis had occurred in any.

To allow a better evaluation of symptoms before and after cholecystectomy we excluded from further analysis three patients with severe distress, solely attributable to late surgical morbidity (two patients with incisional hernia still pending surgical correction and one with retained bile duct stones). The features of 49 symptom free patients and 41 with mild postcholecystectomy problems are compared in Table 2. Although not statistically significant, the only difference is related to the proportion of patients with a short duration of symptoms before cholecystectomy which was higher in the cured group. The Figure shows that the longer the preoperative history, the higher was the frequency of mild postcholecystectomy symptoms.

Table 2 Characteristics of patients in relation to the two year results of cholecystectomy for gall stone disease

	Cured	Mild symptoms
	n=49	n=41
Sex	36 F/13 M	36 F/5 M
Age, yr ( $\bar{x} \pm SD$ )	56 $\pm$ 13	54 $\pm$ 16
Common bile duct explored (n)	13 (27%)	10 (24%)
Duration of preoperative history, yr ( $\bar{x} \pm SD$ )	6.2 $\pm$ 9.0	7.0 $\pm$ 7.5
Symptoms of <3 months duration (n)	18 (37%)	7 (17%)

#### Discussion

The general purpose of this study was to assess the two year results of cholecystectomy from a perspective as close as possible to the patient's. In particular, we sought to evaluate the influence of gall bladder surgery on the symptoms of mythical gall stone associated dyspepsia and the overall incidence of postcholecystectomy problems.

In comparison with classical studies of the long-term effects of cholecystectomy,<sup>1,2</sup> the present work can be criticised for dealing with a small number of subjects. Nevertheless, unselected patients were evaluated prospectively before and after surgery and, unavoidable patients subjectivity notwithstanding, we believe such a study can provide a reliable estimate of how the recipients of cholecystectomy feel about it. Undoubtedly, what a patient expects from any procedure depends to a large extent on previous information about the same, but also on psychological and sociocultural factors. Thus, the findings herein reported do not necessarily apply to other populations.

Flatulent dyspepsia in association with gall stones was present preoperatively in close to one half of the patients being operated on. Two years after cholecystectomy, dyspeptic symptoms had recurred in almost 50% of patients with a trend towards an increasing relapse rate with the passage of time. While it has been repeatedly shown that flatulent dyspepsia is equally common in subjects with or without gall stones,<sup>6,8</sup> some patients are still referred for cholecystectomy with dyspepsia as the only indication, as happened in 5% of the patients in the present series. Moreover, most of the patients expected gall bladder surgery to be curative of dyspeptic symptoms because of inappropriate information procured by their physicians. Earlier reports<sup>9,10</sup> suggested that removing the gall bladder had a beneficial effect on the dyspeptic symptoms of most gall stone patients. Different populations and methods, and shorter follow up periods in former studies might justify this discrepancy.

Non-specific dyspepsia is currently believed to be secondary to a motility disturbance of the upper gastrointestinal tract<sup>11-13</sup> akin to the irritable bowel syndrome.<sup>14</sup> Why cholecystectomy should cure dyspeptic symptoms in half the patients is a matter of speculation. A placebo effect on functional disease is a likely possibility.

As expected, specific symptoms and/or complications of cholelithiasis were definitively cured by cholecystectomy in the vast majority of our patients. On the other hand, mild but distressing postcholecystectomy symptoms were present in nearly half the patients two years after surgery, a rate somewhat

higher than previously reported<sup>4,5</sup> but similar to that recently observed by Bates *et al*<sup>15</sup> in 112 patients recalled one year after the operation. Besides recurrent dyspepsia, the most frequent complaints in our patients were dull upper abdominal pain, thought to be related to the surgical scar, and mild chronic diarrhoea.

The results reconfirm that cholecystectomy is curative of gall stone disease, but they also show that a large percentage of patients with gall stones have functional gastrointestinal disease which may be either uninfluenced by surgery or exchanged by other equally non-specific symptoms. These symptoms (flatulent dyspepsia, dull upper abdominal pain, chronic diarrhoea) are likely to be caused by motility disturbances of the gut and occur frequently in psychoneurotic middle age women,<sup>15,14,16</sup> who also have a very high prevalence of gall stones.<sup>1</sup> Symptom substitution after intervention is well known to occur in illnesses in which psychosomatic factors are operative. Thus, unresolved anxiety and conflicts appear to play an important role in the development of post-gastrectomy symptoms in peptic ulcer patients,<sup>17,18</sup> and postcholecystectomy symptoms may share a similar aetiology.

In the present study, symptomatic cures after cholecystectomy decreased in relation to the duration of the preoperative history (Figure). The same observation had been previously made by others<sup>4,5</sup> and held as an argument in favour of early cholecystectomy. A different conclusion could be drawn if this finding is approached from a modern psychosomatic perspective assuming interaction of socio-psychological and biological factors during the course of any chronic illness,<sup>19</sup> namely, that the longer a

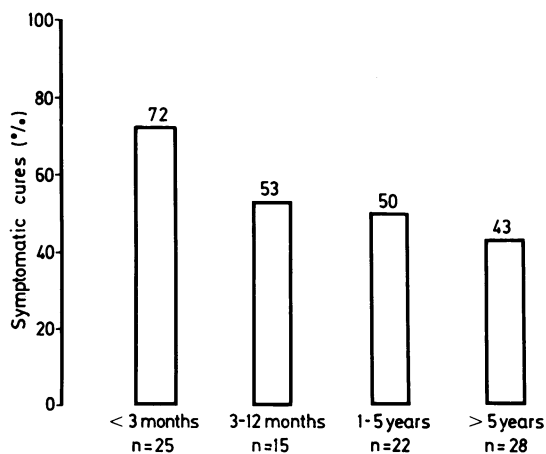


Figure Frequency of symptomatic cures after cholecystectomy in relation to length of preoperative history

patient has been distressed, the less likely is he or she to become symptom free after intervention.

Close to 50% of our patients submitted to elective cholecystectomy were dissatisfied with the procedure in spite of the fact that gall stone specific symptoms did not recur. This suggests that gall stone disease was duly treated, but that the patient with gall stones may not have been correctly approached. Certainly, a positive diagnosis of functional gut disorders 'associated' to gall stone disease has to be made when cholelithiasis is discovered, requires appropriate psychological support and pharmacological treatment, and need not influence the decision to carry out gall bladder surgery. In case cholecystectomy is indicated, the patient should be warned that surgery may in no way influence symptoms not plausibly ascribed to gall stones. A holistic approach<sup>20</sup> would be desirable for the multisymptomatic patient with gall stones. Redefinition of the term postcholecystectomy syndrome seems also advisable.

The authors thank the surgeons of the Hospital Clínic i Provincial for permission to study their patients, and Ms Cristina López, for secretarial assistance.

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