The aim of the study was to compare the quality of life of patients with cardiovascular diseases after surgical treatment of cholecystolithiasis by means of laparoscopy as compared to open surgery.

Material and methods. The study group comprised 111 patients burdened with cardiovascular diseases who underwent surgical treatment for symptomatic cholecystolithiasis, at the Department of General and Vascular Surgery, Międzyleski Specialistic Hospital in Warsaw, during the period between 2002 and 2005. Patients were divided in two groups: those managed by means of laparoscopic surgery, and those who underwent open surgery. The study was interpreted by means of a questionnaire form created by the authors, entitled SATISFACTION AND GENERAL CONDITION AFTER TREATMENT OF CHOLECYSTOLITHIASIS, in combination with the SF-36 questionnaire. The mean observation period for group I patients totaled 22.06 ± 10.98 months, while that of group II patients totaled 22.12 ± 3.41 months after cholecystectomy.

Results. Based on the analysis of both questionnaires, it was determined that a better postoperative quality of life was experienced by the patients who underwent laparoscopic surgery.

Conclusion. Laparoscopic cholecystectomy is highly recommended for the treatment of patients with concomitant cardiovascular disease, due to the quality of life experienced postoperatively.

Key words: quality of life, cholecystolithiasis, laparoscopic cholecystectomy, open cholecystectomy, cardiac disease

In evaluating treatment results, it is important to consider patient satisfaction in connection with the quality of life following surgical management. The quality of life cannot be directly estimated and observed, although its definition is clearly defined. The World Health Organization (WHO) defines “quality of life” as the determination of the physical, mental, and psychosocial condition of a given individual.

In order to characterize a patient’s “quality of life,” the term “Health-Related Quality of Life, HRQoL” was introduced into clinical practice. The criteria that contribute to this parameter consider the influence of the disease on all aspects of daily life (1, 2).

Factors influencing the quality of life can be divided into subjective factors (physical and mental condition, social situation, interpersonal relations [quality and quantity of interpersonal contact]), and objective factors (the patient’s general condition based on additional examinations, clinical condition, emotional and economic status, as well as the quality and number of social contacts).

Studies dealing with the quality of life are performed with the use of questionnaires, which can be divided in two groups.

Generic questionnaires determine the patient’s general condition, including the psychosomatic and social spheres. Examples include the Short Form SF-36, SF-12, NHP (Nottingham Health Profile), and SIP (Sickness Impact Profile).

Disease-specific questionnaires analyze the problems and consequences of a given disease or therapeutic process with regard to such problems as neoplasms, asthma, or chronic pancreatitis (FACIT questionnaire) (3).
The laparoscopic technique, which reduces operative injury, is advantageous because it burdens the patient with insignificant postoperative pain, enabling him or her to quickly return to everyday activities. Notably, laparoscopic surgery is the “gold standard” for use in patients with cholecystolithiasis.

In the case of subjects with cardiovascular disease or heart failure, or those who have undergone cardiac operations, it is difficult to decide upon the appropriate course of treatment. Statistically, perioperative cardiological complications occur most often in patients undergoing elective surgery for abdominal conditions. The same difficulty was observed in the case of surgical treatment for cholecystolithiasis, as recommended by cardiosurgeons before planned cardiac operations. The introduction of videosurgical techniques solved the above-mentioned problem with significant benefits to the patient.

The aim of the study was to compare the quality of life of patients burdened with cardiovascular diseases following laparoscopic as compared to open surgery for cholecystolithiasis.

MATERIAL AND METHODS

The study group comprised 111 patients with cardiovascular disease who underwent surgical intervention due to symptomatic cholecystolithiasis, at the Department of General and Vascular Surgery, Międzylaska Specialty Hospital in Warsaw during the period between 2002 and 2005. The study group comprised 58 (52.25%) female and 53 (47.74%) male patients.

Patients were divided in two groups:

Group I – patients with cardiovascular diseases who underwent laparoscopic surgery (58 patients including 30 females, mean age 61.2 ± 6.23 years, an average of 22.06 ± 10.98 months after cholecystectomy; 24 underwent cardiosurgical operations).

Group II – patients with cardiovascular diseases who underwent open surgery (53 patients including 28 females, mean age 61.3 ± 7.01 years, an average of 22.12 ± 3.41 months after cholecystectomy; 17 were subject to cardiosurgical operations).

The following cardiovascular diseases were considered: arterial hypertension, coronary artery disease, history of myocardial infarction, valvular heart disease, and rhythm disturbances treated conservatively or by means of pacemaker implantation.

Other somatic, chronic diseases (non-cardiovascular) requiring continuous administration of drugs were observed in 30 (51.72%) group I patients. The above-mentioned were diagnosed in 27 (50.94%) of Group II patients.

All patients qualified to undergo surgical treatment were evaluated with regard to basic biochemical parameters, ECG, and chest X-ray (required in operations performed under general anesthesia), as well as a current cardiological consultation. Patients received one or more prophylactic dose(s) of low molecular weight heparin if recommended by the cardiologist. On the day of the operation, patients received a single dose of antibiotics, which was repeated if necessary during the postoperative period.

In patients who underwent laparoscopic surgery, a diagnostic pneumoperitoneum was created with Veresse’s needle to obtain pressures of 8–10 mm Hg. The operation was performed with the use of three or four trocars with the patient placed in the anti-Trendelenburg position (4).

The abdominal cavity in patients undergoing open surgery was opened by means of Kocher’s incision under the right costal arch. Drainage was performed at the site of the removed gall-bladder in all patients. The drain was removed one day after laparoscopic cholecystectomy, when peristalsis appeared in the absence of complications, such as a significant amount of bile or cholerrhagia. In patients who underwent open surgery the drain was removed on the second day after the operation (uneventful postoperative period).

The evaluation of the quality of life was undertaken by means of the SF-36 (Short Form Health Survey) questionnaire authorized by Prof. J. Tylka, as well as our own questionnaire SATISFACTION AND GENERAL CONDITION AFTER TREATMENT OF CHOLECYSTOLITHIASIS (the full questionnaire is presented at the end of the study).

Results were analyzed by means of SPSS PC+ statistical procedures using the U Mann-Whitney test for independent, non-parametric groups. p<0.05 was considered as statistically significant.

The greater the amount of points on the questionnaire, the lower the satisfaction connected with treatment.
RESULTS

Analysis of the obtained results demonstrated that patients subject to laparoscopy felt less anxious before the procedure, as compared to patients undergoing open surgery. This might be connected with the cardiosurgical operations previously undertaken or perhaps the decision to return to oral treatment (group I: 1.58 vs group II: 2.19, statistically significant difference).

Questions concerning the early postoperative period, presence of pain, and the need and frequency of analgesic use yielded better results in the case of patients subject to laparoscopic procedures (2.75 vs 4.47). Similar results concerned the time required to return to oral nutrition and pharmacotherapy. The short period that elapsed between surgery and the initiation of oral pharmacotherapy, especially significant in the case of patients burdened with cardiovascular diseases, was most effectively evaluated in group I (2.47 vs 3.81). Patients who underwent open surgery reported long periods of time required to return to oral pharmacotherapy. The mobilization of patients after laparoscopic procedures was shorter, in comparison to classical operations. The time required to return to everyday activities was also better in group I patients. The time required to return to physical activities was similar in both groups, although slightly shorter in group I (hospitalization: 2.14 vs 2.92).

There was no statistical significance with regard to early postoperative complications in both groups (1.21 vs 1.23, statistically insignificant).

Questionnaire results evaluating patient satisfaction demonstrated the superiority of laparoscopy (general satisfaction after the operation: 40.84 vs 30.02).

The SF-36 questionnaire also confirmed the superiority of laparoscopy over open surgery. The quality of life index in group I patients was recorded as 57.1, while that recorded for group II patients was 81.6.

DISCUSSION

The section of the questionnaire concerning fear prior to planned cholecystectomy showed that patients burdened with cardiovascular diseases and a history of cardiosurgical opera-
tions who underwent laparoscopic surgery reported the fewest spells of anxiety.

With regard to the feeling of postoperative pain, use of analgesics and the frequency of administration, time required to return to oral nutrition and pharmacotherapy, the best results were observed in group I, which can be explained by the fact that the quality of life of patients burdened with cardiovascular diseases depends on the continuous use of cardiac drugs. Thus, the nearly two-day interruption in oral drug administration after open surgery is negatively evaluated by “cardiological” patients, significantly influencing the pejorative general results reported after traditional open surgery (5, 6).

The attachment to continuous drug administration significantly influences the type of surgical procedure performed. Sjögren and Thulin (5) determined the quality of life of eighty-year-old patients after cardiosurgical operations. The rapid return to everyday activities and oral pharmacotherapy significantly influenced the quality of life (high satisfaction), as compared to patients hospitalized for several days in the intensive care unit.

Considering the time required to return to everyday and physical activities, the best results were observed in patients after laparoscopy.

The questionnaire results presented are similar to those observed in most publications evaluating the quality of life after laparoscopic cholecystectomy. Kane and co-authors (7) compared two patient groups (2481 patients) to evaluate quality of life six months after surgery. The laparoscopic method was judged to be superior to open surgery, especially considering the return to baseline levels of physical activity.

Korolić and co-authors (8) showed that long-lasting observations of the quality of life after cholecystectomy (minimum 6 months) render laparoscopic technique superior to open surgery.

There were no significant differences between groups with regard to perioperative complications. The numbers of intra- and early postoperative complications were similar to results obtained following open surgery, although in the case of intraoperative common bile duct injuries, complications were more frequent with laparoscopic procedures (0.1-1.1% vs 0-0.7%) (11).

Publications evaluating the influence of laparoscopic procedures on the circulatory
system focus primarily on the perioperative period, as well as on the effect of the pneumoperitoneum on cardiac function (12). Larsen and co-authors (13) showed similar results in a randomized study concerning the development of the pneumoperitoneum, its duration, and subsequent desufflation in the Trendelenburg and anti-Trendelenburg positions. Pneumoperitoneum diminishes cardiac efficiency, can increase heart rate disturbances, and leads to a drop in blood pressure. This study showed no such influence of the above-mentioned factors on evaluation of the laparoscopic method as compared to open surgery in patients with concomitant cardiovascular diseases.

Fifty-seven of the 58 questionnaire questions (SF-36 and our own) were more effective among group I patients (p<0.05). The only issue which proved to be poorly estimated in patients with concomitant cardiovascular disease after laparoscopic procedures was the question concerning the frequency of postoperative emotional disturbances. These results were similar in both groups (group I-5.8 vs. group II-5.3). The final results were not influenced by particular question results, which differed significantly from those in the literature on the quality of life after surgery.

CONCLUSIONS

1. Laparoscopic cholecystectomy was highly recommended for patients with concomitant cardiovascular disease, considering the postoperative quality of life and satisfaction following the procedure.

2. The high quality of life after laparoscopic surgery is a consequence of the presence or absence of postoperative pain, as well as rapid return to everyday activities and work postoperatively.

Patients who underwent laparoscopic procedures also returned rapidly to oral pharmacotherapy.

3. No statistically significant differences considering perioperative complications were observed, independent of the surgical method used. These results demonstrate the comparable value of both methods in the management of gallbladder diseases.

REFERENCES


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143 Quality of life after laparoscopic and open surgery for cholecystolithiasis
App. 1

Satisfaction and general condition after treatment for cholecystolithiasis

QUESTIONNAIRE

DEMOGRAPHIC DATA:
Gender: F  M
Age: ……………
Time elapsed since surgery?...........................................Age at the time of surgery………..
Residence:
[   ] city
[   ] countryside

ACTIVE LIFE:
Education: [   ] elementary [   ] vocational secondary [   ] secondary [   ] university
Do you work?
YES  NO
[   ] physical  [   ] retirement pension
[   ] intellectual  [   ] disability pension

CONCOMITANT DISEASES:
Cardiovascular diseases: YES  NO
If YES, please specify:.................................................................................................................................
........................................................................................................................................................................................................
........................................................................................................................................................................................................
........................................................................................................................................................................................................

History of cardiosurgical operations: YES  NO
If YES, please specify the date of the operation:………………
If NO, are you waiting for an operation: YES  NO

Other concomitant diseases: YES  NO
If YES, please specify (?): .................................................................................................................................
........................................................................................................................................................................................................
........................................................................................................................................................................................................

Are you on continuous medication: YES  NO

COURSE OF CHOLECYSTOLITHIASIS TREATMENT:

0. Method of treatment?
[   ] traditional surgery
[   ] laparoscopic surgery

1. Hospitalization period before the surgical procedure?:
[   ] 1 day  [   ] 2-3 days  [   ] <1 week  [   ] <2 weeks  [   ] > 2 weeks

2. Your evaluation of the hospitalization period before surgery?
Very short  Rather short  Hard to tell  Rather long  Very long
[   ]  [   ]  [   ]  [   ]  [   ]
3. Fear or anxiety when expecting surgery?:

<table>
<thead>
<tr>
<th>YES</th>
<th>Moderate YES</th>
<th>Hard to tell</th>
<th>Moderate NO</th>
<th>NO</th>
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4. Presence of pain or physical discomfort after the procedure?

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<tr>
<th>YES, significant pain and discomfort</th>
<th>Moderate YES</th>
<th>Hard to tell</th>
<th>Moderate NO, mild discomfort</th>
<th>No pain</th>
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5. Did you use analgesics after the operation?  
   YES  NO

6. How often did you use analgesics?

<table>
<thead>
<tr>
<th>Often</th>
<th>Several times</th>
<th>Twice</th>
<th>Once</th>
<th>Never</th>
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7. Did complications develop during the operation and shortly thereafter?  
   YES  NO

8. With regard to complications, your evaluation of the procedure is:

<table>
<thead>
<tr>
<th>Very satisfactory</th>
<th>Rather satisfactory</th>
<th>Hard to tell</th>
<th>Non-satisfactory</th>
<th>Definitely unsatisfactory</th>
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9. Considering the postoperative scar (cosmetic effects), your evaluation of the procedure is:

<table>
<thead>
<tr>
<th>Very satisfactory</th>
<th>Rather satisfactory</th>
<th>Hard to tell</th>
<th>Non-satisfactory</th>
<th>Definitely unsatisfactory</th>
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</table>

10. How much time elapsed between surgery and initiation of oral nutrition?  
| [ ] immediately after the procedure | [ ] after 1st day | [ ] after 2-3 days | [ ] after 36 hours | [ ] after 48 hours |

11. Evaluation of the time that elapsed between surgery and initiation of oral nutrition?

<table>
<thead>
<tr>
<th>Very short</th>
<th>Rather short</th>
<th>Hard to tell</th>
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If on chronic pharmacotherapy, please specify:

12 Time elapsed between surgery and initiation of oral pharmacotherapy?  
| [ ] immediately after | [ ] after 6 hours | [ ] after 24 hours | [ ] after 36 hours | [ ] after 48 hours |

13. Evaluation of the time elapsed between surgery and initiation of oral pharmacotherapy?

<table>
<thead>
<tr>
<th>Very short</th>
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<th>Hard to tell</th>
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(14). Mobilization after surgery?  
| [ ] immediately | [ ] during the first day | [ ] after 2-3 days | [ ] after 1 week | [ ] < 1 week |
15. Evaluation of the time required for mobilization?

<table>
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<th>Very short</th>
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16. Hospitalization after surgery?

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<th>1 day</th>
<th>2-3 days</th>
<th>&lt; 1 week</th>
<th>&gt; 2 weeks</th>
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17. Evaluation of the hospitalization period after surgery?

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<th>Very short</th>
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18. Time required to return to full activity levels and work activities?

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<tr>
<th>immediately after hospitalization</th>
<th>after 3-4 days</th>
<th>after 1 week</th>
<th>after 2 weeks</th>
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19. Evaluation of the time required to return to full activity levels?

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<th>Very short</th>
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<th>Hard to tell</th>
<th>Rather long</th>
<th>Very long</th>
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20. Time elapsed before physical activity was possible?

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<th>after hospital discharge</th>
<th>after 3-4 days</th>
<th>after 1 week</th>
<th>2 weeks</th>
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21. Evaluation of the time elapsed before physical activity was possible?

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22. Evaluation of cholecystolithiasis treatment with regard to time?

<table>
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<tr>
<th>Very satisfactory</th>
<th>Rather satisfactory</th>
<th>Hard to tell</th>
<th>Unsatisfactory</th>
<th>Definitely unsatisfactory</th>
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Which of the above-mentioned aspects of treatment seems most important?

..................................................................................................................................................................................
..................................................................................................................................................................................
..................................................................................................................................................................................
..................................................................................................................................................................................

THANK YOU FOR YOUR PARTICIPATION