Qualities of life of children with gallstone disease transferred a cholecystectomy in the early postoperative period living on subarctic region conditions

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Research objective – to estimate in comparison in the early postoperative period quality of life of children with gallstone disease transferred the cholecystectomy executed with use of laparoscopic technologies of four port and uniform access in the early postoperative period.

Materials and methods. 50 patients undergoing cholecystectomy through the use of laparoscopic technologies through four port and 50 patients in whom surgery was performed through a uniform access were examined.

Results and conclusions. The choice of laparoscopic technology of uniform access provides earlier decrease in expressiveness of a postoperative pain syndrome and restoration of a physical state, and also emotional background of the patient in the early postoperative period in comparison with a technique four port access.

The research was carried out in accordance with the principles of the Helsinki Declaration. The study protocol was approved by the Local Ethics Committee (LEC) of all participating institution. The informed consent of the patient was obtained for conducting the studies.

No conflict of interest was declared by the authors.

Key word: gallstone disease, cholecystitis, cholecystectomy, laparoscopy, quality of life.

Якість життя дітей із жовчнокам’яною хворобою у ранньому післяіопераційному періоді після холецистектомії, які мешкають в умовах субарктичного регіону

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Мета дослідження: провести порівняльну оцінку якості життя у ранньому післяіопераційному періоді дітей із жовчнокам’яною хворобою, що перенесли холецистектомію, яка виконувалася із застосуванням лапароскопічних технологій чотирипортового та єдиного доступу.

Матеріали і методи. Обстежено 50 хворих, що перенесли холецистектомію із застосуванням лапароскопічних технологій через чотирипортовий, та 50 пацієнтів, яким оперативне втручання виконувалося через єдиний доступ. Для оцінки було застосовувано візуально-аналогову шкалу, також застосовувались запитання для визначення якості життя у хірургічних хворих у ранньому післяіопераційному періоді.

Результати та висновки. Вибір лапароскопічної технології єдиного доступу забезпечує більш раннє зникнення виразності післяіопераційного больового синдрому та відновлення фізичного стану, а також емоційного фону хворого у ранньому післяіопераційному періоді порівняно з методикою чотирипортового доступу.

Дослідження виконані відповідно до принципів Гельсінської Декларації. Протокол дослідження ухвалений Локальним етичним комітетом (ЛЕК) всіх зазначених у роботі установ. На проведення досліджень було отримано підписані згоду батьків дітей (або їхніх опікувачів). Автори заявляють про відсутність конфлікту інтересів.

Ключові слова: жовчнокам’яна хвороба, холецистит, холецистектомія, лапароскопія, якість життя.

Качество жизни детей с желчнокаменной болезнью в раннем послеоперационном периоде после холецистэктомии

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Цель исследования: провести сравнительную оценку качества жизни в раннем послеоперационном периоде детей с желчнокаменной болезнью, перенесших холецистэктомию, выполненную с применением лапароскопических технологий четырёхпортового и единого доступа.
Relevance

By estimates of experts gallstone disease (GD) is diagnosed for 1% of the children having diseases of the digestive tract (GIT) in the Russian Federation [7]. Despite emergence of new pharmacological medicines and algorithms for their use in the arsenal of pediatricians, the results of her conservative treatment are not always successful [3–5]. In case of inefficiency of medicamentous therapy and in the presence of organic concerments it is expressed reducing «quality of life» of the child expeditious treatment is applied [9]. Today the cholecystectomy at children is carried out mainly with use of laparoscopic technologies by means of four port and uniform access [2,8]. In connection with a small amount of clinical observations of performance of a cholecystectomy through uniform access what question from types of laparoscopic technologies of expeditious treatment of children with GD is the least reducing «quality of life» of patients remains open for specialists for today. In connection with the above, the relevance of the comparative assessment in the early postoperative period of the «quality of life» of children with GD who underwent a cholecystectomy performed using the laparoscopic technologies of the four port and uniform access is beyond doubt.

Research objective – to estimate in comparison in the early postoperative period «quality of life» of children with gallstone disease transferred the cholecystectomy executed with use of laparoscopic technologies of four port and uniform access in the early postoperative period.

Materials and methods

The presented materials are based on observations of 100 male sick teenagers aged from 12 to 15 years with the diagnosis: «common bile duct stones with cholecystitis» (ICD X K80.4 code) in the postoperative period after cholecystectomy.

All patients underwent expeditious treatment in clinic of children's surgery FSBEI of Higher Education Tyumen State Medical University of the Ministry of Health of the Russian Federation on the basis of children's surgical State Budgetary Healthcare Institution of office No. 1. State Budgetary Healthcare Institution Tyumen Regional Clinical Hospital No. 2 and State Budgetary Healthcare Institution YNAO «Noyabrsk Central City Hospital» Noyabrsk from 2013 to 2015.

Depending on technology of the applied expeditious treatment of cholecystitis patients were divided into two equal clinical groups on number, on 50 people in every. At patients of the I clinical group expeditious treatment was carried out by means of laparoscopic technologies through four port, and in II – through uniform access by means of use of a system of access of X-CONE, Karl Storz [2,8].

Surgical treatment of patients of all clinical groups was carried out under general anesthesia with artificial ventilation of the lungs as the drugs for the main anesthesia used – Sevoflurane (Sevoran) of Abbott Laboratories Ltd., United Kingdom, at a dosage of 8% by volume and Fentanyl (Fentanyl) of Janssen Pharmaceuticals N.V., Belgium, at a dosage of 2 mg/kg.

Laparoscopic cholecystectomy it was carried out on an endoscopic rack of «Karl Storz» in the gas environment. As operating environment the carbon dioxide gas entered into an abdominal cavity under pressure of 10-14 mm Hg was used.

The period of stationary observation in clinical groups was 5 days. Complications in the next postoperative period at the patients participating in a research were not revealed.

Conservative treatment in the postoperative period after performance of a cholecystectomy at sick all clinical groups consisted from appointment in the first day after operation with the purpose of anesthesia of an ibuprofen in a dosage of 5-10 mg/kg of per os each 6 hours and restrictions of an exercise stress within 30 days.

To assess the pain used visually analog scale (VAS). Patients noted force of pain which was felt, in the form — to estimate in comparison in the early postoperative period «quality of life» of the child expeditious treatment is applied [9]. Today the cholecystectomy at children is carried out mainly with use of laparoscopic technologies by means of four port and uniform access [2,8]. In connection with a small amount of clinical observations of performance of a cholecystectomy through uniform access what question from types of laparoscopic technologies of expeditious treatment of children with GD is the least reducing «quality of life» of patients remains open for specialists for today. In connection with the above, the relevance of the comparative assessment in the early postoperative period of the «quality of life» of children with GD who underwent a cholecystectomy performed using the laparoscopic technologies of the four port and uniform access is beyond doubt.

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To assess the pain used visually analog scale (VAS). Patients noted force of pain which was felt, in the form
of a mark which we transferred to points. Patients estimated a pain syndrome for the first, third and seventh day, and the questionnaire was also applied to determination of quality of life at surgical patients in the early postoperative period approved by the Ministry of Health of the Russian Federation No. 2004/47 of 19.03.2004.

After an extract all patients received a scale and the questionnaire on hands, and results of testing sent by e-mail. Assessment of results of a research was carried out before carrying out operation and for 3, 5, 7 days after expeditious treatment.

All stages of the research conducted by us strictly corresponded to the legislation of the Russian Federation, the international ethical standards and normative documents of the research organizations. The design of the presented research at a stage of preparation for its carrying out was approved by ethical committee (the conclusion of ethical committee Tyumen Scientific Centre SB RAS No. 2 of 24.01.2013). The legal representatives of each patient participating in the study signed an informed consent to participate in it, in accordance with the requirements of the Fundamentals of Law No. 5487-1 of July 22, 1993 «On the protection of public health» and the Helsinki Declaration of the World Medical Association. The individual code by which it passed in the database was assigned for each participant of a research.

Statistical analysis of the material was carried out in accordance with international requirements for processing the results of scientific research data using the «SPSS 11.5 for Windows» personal computer program (average value, variance of averages, parametric comparison using Student’s criterion with Bonferoni correction for multiple comparisons, frequency analysis).

## Results of a research and their discussion

Results of comparative assessment in the early postoperative period of «quality of life» of children from GD which transferred the cholecystectomy executed with laparoscopic technologies four port and uniform access (M±m)

| Assessment time                  | Clinical groups |
|----------------------------------|-----------------|
|                                  | I               | II              |
| **The severity of pain syndrome**|                 |                 |
| Before surgery                   | 6,41±0,45       | 6,39±0,48       |
| Third day after surgery          | 5,29±0,43²      | 4,12±0,411,2    |
| The fifth day after surgery      | 2,33±0,18²      | 1,57±0,141,2    |
| The seventh day after surgery    | 0,56±0,04²      | 0,39±0,031,2    |
| **Physical state, in points**    |                 |                 |
| Before surgery                   | 25,86±1,39      | 25,75±1,53      |
| Third day after surgery          | 27,51±1,34      | 32,38±1,671,2   |
| The fifth day after surgery      | 33,74±1,13²      | 34,21±1,193     |
| The seventh day after surgery    | 34,02±1,03³     | 34,87±1,013     |
| **The social status, in points** |                 |                 |
| Before surgery                   | 11,65±1,19      | 11,54±1,16      |
| Third day after surgery          | 12,32±1,21      | 12,57±1,28      |
| The fifth day after surgery      | 12,75±1,28      | 13,49±1,15      |
| The seventh day after surgery    | 13,26±1,19      | 13,58±1,12      |
| **Emotional background, in points** |                 |                 |
| Before surgery                   | 15,99±1,46      | 16,03±1,42      |
| Third day after surgery          | 20,13±1,75²     | 26,11±1,68¹²    |
| The fifth day after surgery      | 25,17±1,84²      | 27,25±1,47³     |
| The seventh day after surgery    | 26,61±1,17³     | 27,24±1,19³     |
| **The general assessment of health and wellbeing, in points** | | |
| Before surgery                   | 13,37±1,45      | 13,41±1,39      |
| Third day after surgery          | 14,69±1,32      | 15,66±1,28      |
| The fifth day after surgery      | 15,11±0,56      | 16,12±1,25      |
| The seventh day after surgery    | 16,09±0,10³     | 16,14±1,01³     |

Note: 1 – p<0.05 between the I and II clinical groups; 2 – p<0.05 in comparison with values of the previous investigation phase; 3 – p<0.05 in comparison by the beginning researches.
use of laparoscopic technologies four port and uniform access are presented in table.

Analyzing data in in table, it is possible to note that before an operative measure reliable (p<0.05) differences in expressiveness of a pain syndrome on VAS, indicators of a physical state, the social status, an emotional background, and also general assessment of the state of health and wellbeing between patients of the clinical groups accepting a fate in a research was not revealed.

The expressiveness of a pain syndrome on VAS in dynamics of a research after an operative measure in the I clinical group authentically (p<0.05) was higher, than in II. At patients of all clinical groups for the third, fifth and seventh day after an operative measure decrease expressiveness of a pain syndrome on VAS, both in comparison with previous evaluation stages, and with the presurgical period was observed.

On third day after an operative measure indicators of a physical state at patients of the I clinical group were lower (p<0.05) than in II. Differences (p<0.05) between indicators of a physical state at the sick clinical groups participating in a research for the fifth and seventh day after an operative measure it was not revealed. In the II clinical group on third day after an operative measure increase (p<0.05) indicators of a physical state in comparison with the presurgical period is observed. For the fifth day after an operative measure at patients of the I clinical group increase (p<0.05) indicators of a physical state in comparison with the previous evaluation stage was noted. In all clinical groups, indicators of a physical state for the fifth and seventh day after an operative measure were higher (p<0.05), than during the presurgical period.

Differences between indicators of the social status and the general assessment of health and wellbeing at sick clinical groups at one evaluation stage during observation were not revealed. In dynamics of a research indicators of the social status and the general assessment of health and wellbeing remained stable with patients of all clinical groups.

Indicators of an emotional background on third day after an operative measure at patients of the I clinical group were lower (p<0.05) than in II. Differences (p<0.05) between indicators of an emotional background at the sick clinical groups participating in a research for the fifth and seventh day after an operative measure it was not revealed. On third day after an operative measure in at sick all clinical groups increase (p<0.05) indicators of an emotional background in comparison with the presurgical period was observed. At patients of the I clinical group for the fifth day after an operative measure increase (p<0.05) indicators of an emotional background in comparison with the previous evaluation stage was noted. In all clinical groups, indicators of an emotional background for the fifth and seventh day after an operative measure were higher (p<0.05), than during the presurgical period.

Time of performance of a laparoscopic cholecystectomy through four port access was 42.71±2.54 minutes, and through uniform access – 56.13±2.95 minutes. Complications in the early postoperative period after performance of laparoscopic cholecystectomy at patients were not revealed.

Thus, performance of a cholecystectomy with use of laparoscopic technologies through uniform access in treatment of GD does not lead after operation to decrease in indicators of the social status and the general assessment of health and wellbeing in comparison with a technique of four-port access. Expeditious treatment of GD at children by means of use of technology of uniform access in comparison with four-port, leads to lengthening of time of operation.

Conclusion
The choice of laparoscopic technology of uniform access for expeditious treatment from gallstone disease at children is represented to us the most optimum as provides earlier decrease in expressiveness of a postoperative pain syndrome and restoration of a physical state, and also emotional background of the patient in the early postoperative period, thereby keeping higher «quality of life» of patients in the early postoperative period in comparison by a technique four port access.

No conflict of interest was declared by the authors.

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ДО УВАГИ ВИДАВЦЯ!

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