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Improving the Method of Cholecystectomia from Minilaparotomic Access with Increased Operational Risk

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Abstract This work is based on the results of examination and treatment of 967 patients with chronic calculous cholecystitis in the period from 2015 to 2020, who were treated in the surgical department of the 1st clinic of the Samarkand Medical Institute. In order to select the method of cholecystectomy in patients with chronic calculous cholecystitis with an increased operational risk, the results of treatment of 296 patients of this category were analyzed. In 23 cases, they underwent open cholecystectomy, in 46 - laparoscopic cholecystectomy, in 227 - minilaparotomic cholecystectomy. Performing open or laparoscopic cholecystectomy in patients with chronic calculous cholecystitis with an increased operational risk is associated with a number of complications from the cardiovascular and respiratory systems, reaching 23.5% and 15%, respectively.

Keywords General surgery, Cholecystectomy, Minilaparotomic cholecystectomy

1. Introduction

For many years, medicine has been studying the problem of gallstone disease. The advances in her diagnosis and treatment are obvious. At the same time, despite the high level of modern medicine, the number of patients with complicated forms of this disease, unfortunately, is not decreasing. And this, in turn, leads to undesirable outcomes of surgical treatment of gallstone disease. [1-6]

The limited performance of laparoscopic operations, in such cases as adhesions in the upper floor of the abdominal cavity, with the severity of functional disorders of the cardiovascular system and respiratory systems, in the detection of an inflammatory infiltrate, according to some authors, determines the relevance of a wider use of mini-approaches for cholecystectomy [7,9-12]. The aforementioned advantages of minilaparotomic cholecystectomy could possibly allow it to be recommended as the method of choice for cholecystectomy in patients with an increased operational risk [8,13-17].

The above questions determine the urgency of this problem and dictate the need for deeper research in this direction.

2. Materials and Methods

This work is based on the results of examination and treatment of 967 patients with chronic calculous cholecystitis in the period from 2015 to 2020, who were treated in the surgical department of the 1st clinic of the Samarkand Medical Institute.

In order to select the method of cholecystectomy in patients with chronic calculous cholecystitis with an increased operational risk, the results of treatment of 296 patients of this category were analyzed. In 23 cases, they underwent open cholecystectomy, in 46 - laparoscopic cholecystectomy, in 227 - minilaparotomic cholecystectomy.

All these patients were divided by sex and age according to the classification of age groups adopted in Kiev (1962) at a regional seminar of the World Health Organization.

87 (29.4%) patients under the age of 60 were operated, 209 (70.6%) patients were over 60 years old. The average age of the patients was 64.5 ± 3.5 years, and their age ranged from 45 to 85 years. It is noteworthy that mainly chronic calculous cholecystitis was observed in women - 214 (72.3%) patients, and 82 (27.7%) men.

Diseases of the cardiovascular system were encountered in almost every patient with an increased operational risk. Respiratory diseases were noted in 87 (29.3%) patients, and diabetes mellitus in 29 (9.8%). Without a doubt, the presence of so many diseases put them in the group of increased operational risk.

All patients were assessed the degree of operational risk according to the classification of V.A. Gologorsky. It was revealed that all patients had 4 degrees of operational and anesthetic risk [17-18].

For a comparative assessment of the degree of trauma of each of the three types of access used and the surgical interventions performed, we studied the state of stress hormones in 97 patients. Thus, stress hormones were studied

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in 11 (11.3%) cases during open cholecystectomy, 42 (43.2%) - laparoscopic cholecystectomy, and 44 (45.5%) - minilaparotomic cholecystectomy.

3. Results and Discussion

We analyzed the results of treatment of 227 patients with chronic calculous cholecystitis, who underwent minilaparotomic cholecystectomy. At the same time, I would like to note that we divided the use of this technique in this contingent of patients into 2 stages: 1 stage (subgroup "A"), when the standard minilaparotomic cholecystectomy was applied according to the method of M.I. Prudkov using the MiniAssistant equipment in 104 patients from 2015 to 2017; Stage 2 (subgroup "B"), when we applied the improved minilaparotomic cholecystectomy technique in 123 patients from 2018 to 2020.

In general, according to our data, when assessing the immediate results of operations from the minilaparotomic approach, it was found that they are quite favorable: during the minilaparotomic cholecystectomy, complications were observed in 3 patients. In the postoperative period, in another 9 (3.9%) cases, we noted various complications.

Specific complications identified in 4 (1.7%) patients were those that were directly related to the performance of minilaparotomic cholecystectomy: bile leakage along the drainage from the subhepatic space and exacerbation of chronic pancreatitis. Moreover, none of these cases required relaparotomy.

In the immediate postoperative period, 215 (94.7%) of the discharged patients recovered, 12 (5.2%) showed significant improvement (cessation of pain attacks while maintaining severity in the right hypochondrium).

When performing a standard minilaparotomic cholecystectomy according to M.I. Prudkov, traction behind the bottom of the gallbladder and its removal into the wound significantly impaired visualization of the area of the gallbladder neck and hepatoduodenal ligament, which led to an increase in the duration of the operation.

Therefore, when performing minilaparotomic cholecystectomy in patients in subgroup "B", we used a new technical technique improved by us, which greatly facilitates the operation.

So, after making a minilaparotomy, through an additional puncture on the anterior abdominal wall, lateral to the minilaparotomy wound, a soft clamp with long branches is inserted at the site of the supposed counterperture to install a drainage tube. The clamp captures the neck of the gallbladder and traction is carried out laterally upward. At the same time, the surgeon clearly sees the area of the gallbladder neck, hepatoduodenal ligament and duodenum, which is especially necessary when performing a "difficult" cholecystectomy. After crossing the cystic duct and artery, the gallbladder is removed from the minilaparotomic wound. The drainage tube is inserted into the subhepatic region and pulled out from the previously imposed puncture on the anterior abdominal wall.

Thus, the average duration of minilaparotomic cholecystectomy according to the improved technique, performed in patients of subgroup "B", was 36 ± 3.1 minutes, and in most patients (81.7%) it did not exceed 40 minutes.

Thus, as the study showed, minilaparotomic cholecystectomy should be the operation of choice in chronic calculous cholecystitis in patients with an increased operational risk. At the same time, the use of an improved version of minilaparotomic cholecystectomy helped to reliably reduce the number of postoperative complications from 5% to 0.5% of cases.

4. Conclusions

1. Performing open or laparoscopic cholecystectomy in patients with chronic calculous cholecystitis with an increased operational risk is associated with a number of complications from the cardiovascular and respiratory systems, reaching 23.5% and 15%, respectively.
2. Assessment of the level of stress hormones during operations on the biliary tract showed that operations from the minilaparotomic access, according to the degree of surgical aggression, can be classified as minimally invasive.
3. The level of "stress" hormones is directly proportional to the duration of the operation - the longer the operation, the more aggression relative to its average value.
4. Minilaparotomic cholecystectomy according to M.I. Prudkov in patients with chronic calculous cholecystitis with an increased operational risk is effective for any category of severity of the operation, while the complication rate is 6.4% and, as a rule, it is associated with performing a "difficult" cholecystectomy.
5. The use of improved minilaparotomic cholecystectomy, especially in the case of "difficult" cholecystectomy, can reduce the complication rate to 0.5%.

Mini cholecystectomy is effective and related with less patient’s uneasiness in terms of post-operative pain and infection as well as with less hospital stay.

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Consent

Written informed consent was obtained from all

participants of the research for publication of this paper and any accompanying information related to this study.

REFERENCES

[1] Atadzhanov SH.K. Puti snizheniya oslozhneniy laparoskopicheskoy kholetsistektomii pri ostrom kholetsistite // Khirurgiya. 2007. - № 12. - S. 26-29, s. 28.

[2] Ataliyev A.Ye., Madaminov R.M., Stupin V.V., Rakhimov B.K. Mezhmyshechnyy kosoy minidostup pri patologii zhelchnogo puzyrya. // Tretiy kongress assotsiatsii khirurgov imeni N.I. Pirogova. 2003. S. 35-37.

[3] Bystorov S.A., Zhukov B.N., Bizyarin V.O. Miniinvazivnyye operatsii v lechenii zhelchnokamennoy bolezni u patsiyentov s povyshennym operatsionnym riskom. Khirurgiya. 2010; 7: 55.

[4] Beburishvili A.G., Prudkov M.I., Sovtsov S.A., Sazhin A.V., Shulutko A.M., Natroshvili A.G. Natsional'nyye klinicheskiye rekomendatsii «Ostryy kholetsistit». Prinyaty na XII S"yezde khirurgov Rossii «Aktual'nyye voprosy khirurgii», 2015.20 s.

[5] Sultan A. I., Hussein K. K. Comparative Study between Muscle-Split Versus the Classical Muscle-Cut Subcostal Incision for Open Cholecystectomy // Indian Journal of Public Health Research & Development. – 2019. – Т. 10. – №. 7. – С. 938-942.

[6] Usenko A. YU., Yareshko V. G.,. Nichitaylo M. Ye,. Mikheyev, YU. A. Andreyeshchev S.A. TG13: obnovlennyye Tokiyskiye klinicheskiye rekomendatsii po lecheniyu ostrogo kholangita i kholetsistita // Klichna mrurpya. 2015. № 10. S.5-10.

[7] Raimzhanova A.B. Sravnitel'naya otsenka razlichnykh sposobov kholetsistektomiy // Nauka i zdravookhraneniye. 2016, №1. S.40-53.

[8] Sovtsov S.A., Prilepina Ye.V. Kholetsistit u bol'nykh vysokogo riska // Zhurnal im. N.I. Pirogova. 2013. № 12. S.18-23.

[9] Kanikovsky O. Y. et al. Improving the results of the laparoscopic cholecystectomy in patients with complicated course of the calculous cholecystitis. – 2019.

[10] Lima D. L., Carvalho G. L., Cordeiro R. N. Twenty years of mini-laparoscopy in Brazil: What we have learned so far //Journal of Minimal Access Surgery. – 2020.

[11] Shulutko A.M., Prudkov M.I., Timerbulatov V.M., Vetshev P.S., Beburishvili A.G., Garipov R.M., Agadzhanov B.G. i dr. Minilaparotomnyye tekhnologii pri zhelchekamennoy bolezni: sistemnyy podkhod ili khirurgicheskaya ekvilibristika? // Annaly khirurgicheskoy gepatologii. 2012. T. 17. № 2. C. 34-4.

[12] Brooks K.R., Scarborough J.E., Vaslef S.N., Shapiro M.L. No need to wait: An analysis of the timing of cholecystectomy during admission for acute cholecystitis using the American College of Surgeons National Surgical Quality Improvement Program database // J Trauma Acute Care Surg. 2013; 74(1): 167-73. 173-4.

[13] Johner A., Haymakers A., Wiseman S.M. Cost utility of early versus delayed laparoscopic cholecystectomy for acute cholecystitis // Surg Endosc. 2013; 27(1): 256-62.

[14] Kiewiet J.J., Leeuwenburgh M.M., Bipat S, Bossuyt P.M., Stoker J., Boermeester M.A. A systematic review and meta-Analysis of diagnostic performance of imaging in acute cholecystitis // Radiology. 2012; 264: 708-20.

[15] Zafar S.N., Obirize A., Adesibikan B., Cornwell E.E., Fullum T.M., Tran D.D. Optimal Time for Early Laparoscopic Cholecystectomy for Acute Cholecystitis. JAMA. 2015; 150(2): 129-36.

[16] Qazi A.R., Solangi R.A., Shah P.S., Memon G.A. Reasons for conversion from laparoscopic to open cholecystectomy // Medical Forum Monthly. 2010; 21: 3. 13-17.

[17] Yamashita Y., Takada T., Strasberg S.M., Pitt H.A., Gouma D.J., Garden O.J., et al. TG13 surgical management of acute cholecystitis. J Hepatobiliary Pancreat Sci. 2013; 20: 89-96.

[18] Qasrani U. K. et al. COMPARISON OF MINI CHOLECYSTECTOMY VERSUS OPEN CHOLECYSTECTOMY IN PATIENTS WITH CHOLELITHIASIS // Journal of University Medical & Dental College. – 2020. – Т. 11. – №. 2. – С. 34-42.