

**INTRAABDOMINAL BLEEDINGS AFTER VARIOUS OPTIONS OF CHOLECYSTECTOMY**

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**ВНУТРИАБДОМИНАЛЬНЫЕ КРОВОТЕЧЕНИЯ ПОСЛЕ РАЗЛИЧНЫХ ВАРИАНТОВ ХОЛЕЦИСТЭКТОМИИ**

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**ХОЛЕЦИСТЭКТОМИЯНИНГ ТУРЛИ ВАРИАНТЛАРИДАН СЎНГ ҚОРИН БЎШЛИҒИДАГИ ҚОН КЕТИШ**

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Как показал обзор литературы, ведущее место среди внутрибрюшных осложнений после различных вариантов холецистэктомии занимают послеоперационные кровотечения, в структуре послеоперационных осложнений составляющие около 4%. Причины возникновения внутрибрюшных кровотечений после холецистэктомии различны, однако наиболее часто ими становятся плохое качество и техника выполнения оперативных вмешательств, недостаточно тщательный и надежный интраоперационный гемостаз. Отечественные и зарубежные авторы отмечают, что признаки внутрибрюшных кровотечений в билиарной хирургии наиболее легко выявляются с помощью эхографии, которая благодаря своей неинвазивности, скорости выполнения, высокой чувствительности считается методом скрининга. Точность установления наличия внутрибрюшных кровотечений и гематом после холецистэктомии во много раз возрастает при применении КТ и МСКТ в режиме 3D-реконструкции.

**Ключевые слова:** острый обтурационный калькулезный холецистит, холецистэктомия, внутрибрюшные кровотечения, диагностика, лечение.

Ҳар-хил вариантдаги холецистэктомиядан кейин қўп учрайдиган асорталардан бири – бу операциядан кейинги ички қон кетиш, барча операциядан кейинги асорталарнинг ўртача 4 % ни ташкил этади. Операциядан кейинги қорин бўшлиғи ичи қон кетиши ривожланишининг сабаблари турлича. Қўпчилик авторларнинг маълумотларига кўра энг асосий сабаблардан операцияни бажариллиши техника ва сифати настилиги, интраоперацион бажарилган гемостазнинг ва эътибор етарлича эмаслигидир. Ҳам маҳаллий, ҳам хорижий муаллифларнинг таъкидлашича билиар жаароҳликда қон кетиш белгилари эхография ёрдамида нисбатан осон аниқланади, эхография ўзининг ноинвазивлиги, бажариллиши тезлиги, қулайлиги, юқори сезувчанлиги туфайли скрининг усули ҳисобланади. Холецистэктомиядан кейинги қорин бўшлиғи ичи қон кетиши ва гематомаларини аниқлаш аниқлиги КТ ва МСКТ 3D-реконструкция режимида фойдаланилганда бир неча баробарга ошади.

**Калит сўзлар:** ўткир обтурацион калькулёз холецистит, холецистэктомия, қорин бўшлиғи ичи қон кетиши, клиник кўриниши, диагностика, даволаш.

The incidence of a cholelithiasis (CLT), in particular the cases of acute obstructive cholecystitis (AOCh) for the last decades considerably raised and continues to grow [16, 35].

Now AOCh is one of the most frequent diseases in surgical gastroenterology and makes from 7 to 20% of total number of urgent pathology [2, 22, 25, 38].

Large majority in AOCh cases comes from destructive forms of this pathology requiring urgent Cholecystectomy (ChCEc)[1, 5, 13, 39].

According to literary, proceedings authors count about 120 thousand variations of ChCEc performed annually nowadays in CIS countries and from 8 to 10 thousand in the Republic of Uzbekistan, and more than a half of them caused by destructive forms of AOCh at that [2, 3, 22, 39].

Moreover, besides traditional Cholecystectomy (TChCEc) the low-invasive methods as laparoscopic cholecystectomy (LChCEc) and minilaparotomic cholecystectomy (MChCEc) are widely applied as well [23, 34, 38, 51].

Outcoming increase in number of surgeries fulfilled at specialized clinics as well as in regional medical institutions in recent years, led to increase of incidence of postoperative intra-abdominal complications following cholecystectomy.

Thus, the complications following TChCEc, those need re-intervention are observed in 0,7-4,6% of cases [3, 29, 31, 53]. That of after laparoscopic cholecystectomy (LChCEc) makes 1,0-5,1% [25, 33, 38, 56]. At these are indicators ratio of patients category with the highest index of a lethal outcome varying from 9.4 to 37.0% [4, 6, 18, 23, 36, 37].

The leading indexes among intraabdominal complications following diverse variations of ChCEc shown by postoperative bleedings, composing about 4% of postoperative complications at all [5, 25, 39].

**Etiopathogenesis**

Massive intraabdominal bleeding is followed by severe hemodynamic disorders and development of hemorrhagic shock or a syndrome named as "hypoperfusion" in modern literature manifested in various its degrees [17, 46, 52].

In response to severe blood loss in an organism of the patient the compensatory sympathetic catecholamine reaction, that cause abrupt release of vasopressors in large amount. The latest induce spasm of peripheral vessels resulting in disorders in tissue microcirculation and decrease in their oxygenation. Consequently, tissue metabolism goes in anaerobic way instead of aerobic [19, 24, 42].

The anaerobic metabolism processes with increase of level of carbonic acid and accumulation of maloxidized waste metabolites that results in metabolic acidosis [11, 35, 46].

If blood loss proceeds, accruing metabolic acidosis considerably worsens function of vitals that really threatens life of the patient [32, 47, 56].

Even if bleeding will appear less intensive it leads to a congestion in an abdominal cavity of hemorrhagic contents, at infection the last can be transformed in is purulent - septic complication in a look, either widespread peritonitis, or limited abscess of an abdominal cavity. At both options the volume of

medical algorithm considerably extends, and forecasting of its end results are represented rather problematic [21, 24, 43, 45].

The reasons of emergence of intraabdominal bleedings after ChCEc are various. According to the majority of authors the leading place among them is taken by low quality and technique in performance of the surgeries, insufficient care and reliability of the carried-out intraoperative hemostasis [11, 24, 46].

In addition, the authors indicate big variability of passing of blood vessels, gall bladder and biliar ducts, including all abnormal anatomic options as the reasons of development of intraabdominal bleedings [32, 35, 47, 56].

At last, number of authors note also existence of intraoperative inflammatory and infiltrative or cicatricial changes in area of a neck of a gall bladder, a ductus cystica and the hepatoduodenal sheaf which are sharply changing topography in a zone of operation as the reason of development of intraabdominal bleedings [12, 15, 48].

Authors emphasize that if when carrying out planned ChCEc concerning chronic cholecystitis number of complications of technical character (including intraabdominal bleedings) make from 0,56% to 3,2%, the probability of development of similar complications many times over increases when carrying out transactions of emergency and urgent indications at patients with the AOCh destructive forms with paravesical infiltrates. So at destructive options of AOCh of complication arise from 9 to 14% of cases, and in the presence the paravesical infiltrates depending on prescription of an attack to 20% [3, 15, 35, 52].

As the most frequent sources of intraabdominal bleeding after various options of ChCEc the majority of authors refer to a bed of a remote gall bladder or insolvency of a cystic artery [38, 42].

Along with it sources of intraabdominal bleedings may dissected adhesion or intraoperative damages of a big epiploon [11, 51].

Intraabdominal bleeding after ChCEc can be a consequence of a puncture of a wall of an artery of a abdominal wall at the time of establishment of drainage tubes [1, 5, 17, 30, 46].

All above-mentioned sources of bleeding arise owing to insufficiently careful carried-out hemostasis of a bed of a gallbladder, adhesions, a penetrated cut or sliding of a ligature, a relaxation or insolvency clips imposed on a cystic artery or the damaged amentum during traditional and laparoscopic operations [15, 45].

**Diagnosis**

Timely diagnosis for intraabdominal bleedings after ChCEc and definition of indications to carrying out repeated surgical intervention are one of the most complex and actual problems in modern urgent biliar surgery [11, 26, 54].

Diagnosis of intraabdominal bleedings after various options of ChCEc is based on identification of clinical signs and symptoms, carrying out laboratory and instrumental methods of research [19, 49].

Clinical diagnostics at postoperative intraabdominal bleedings is based in timely detection of instability of the central haemodynamics, symptoms of acute anemia, and also local signs in the form of hemorrhagic allocations from drainage tubes and obtusion of sloping places of a abdomen [10, 24].

Laboratory diagnostics of intraabdominal bleedings after ChCEc includes clinical and biochemical blood tests. Thus, a number of authors consider that in blood of these patients there are the essential changes connected with acute blood loss and the corresponding stressful reaction of an organism [12].

Both local, and foreign authors note that symptoms of intraabdominal bleedings in biliary surgery most easily come to light by means of an echography which thanks to the not invasiveness, speed of performance, high sensitivity is considered a method of screening [9, 14, 20, 40, 57].

Ultrasonography of an abdominal cavity gives the chance to find not only availability of blood in an abdominal cavity, but also its quantity. If necessary under ultrasonologic control this method allows to make puncture medical and diagnostic actions [8, 41, 44, 50].

Accuracy of establishment of existence of intraabdominal bleedings and hematomas after ChCEc many times over increases at CT and MSCT application in the 3D mode - reconstruction [55].

In recent years, in literature the number of publications of the postoperative intraabdominal bleedings devoted to diagnostics and hematomas a magnetic and resonant tomography (MRT) cornerstone at the heart of which use unlike ionizing radiation is a X-ray analysis of the strong magnetic field harmless to the person [18, 36] increased.

The video laparoscopy (VLS) is now the most widespread method of identification of the majority of postoperative complications, including intraabdominal bleedings after various options of ChCEc [4, 5, 17, 23, 25, 27, 35, 39].

Cardinally differing from traditional methods, VLS unites in itself unique diagnostic and medical opportunities [5, 7, 15, 24].

At VLS the visual assessment of structures of an abdominal cavity with establishment of existence, quantity, character and a primary arrangement of blood and clots in an abdominal cavity [17, 38] is carried out.

Except that VLS creates possibility of definition of a source of bleeding and to carry out the corresponding reliable hemostasis, sanitation and drainage of an abdominal cavity [1, 5, 7, 36, 37].

**Treatment**

Intraabdominal bleedings after various options of ChCEc in most cases require repeated surgical interventions in the form of relaparotomy or relaparoscopy [2, 23, 42].

The main objective carried out during these interventions is work of a reliable hemostasis of a source of bleeding, careful sanitation and adequate drainage of an abdominal cavity [7, 11, 24, 39, 51].

Along with surgical interventions at patients with intraabdominal bleedings, the majority of authors emphasize need of carrying out intensive conservative therapy [3, 11, 54].

Thus, conservative therapy has to be directed first on completion of volume of the lost blood and plasma, secondly on stimulation of blood coagulation system, in the third on restoration of an internal homeostasis and immunological balance in an organism of the patient [4, 19, 26, 45, 52].

The above-sounded tasks are carried out by carrying out haemo and plazmotransfusion, infusion of crystalloidal and colloidal solutions, use of haemostatic medications, and also angioprotectors and substances improving rheological properties of blood [1, 17, 32, 35, 47, 56].

Analyzing results of repeated operations on intraabdominal bleedings after ChCEc, authors paid attention that insufficiency of a hemostasis on bed of gallbladder, dissected adhesions generally dealt with technical shortcomings of a method most often applied – electrocoagulations. They are limited dot influence, difficulties of forecasting and management of the direction and depth of penetration of electric current, sticking of a coagulative film to an active electrode [28].

It demanded researches for improvement of methods of an intraoperative hemostasis. Search of new ways of a contactless supply of high-energy heat to an operational field led to creation of plasma surgical installations in the form of the argono-plasma coagulator (APC) [28].

From proceedings of official medical literatures, authors based on experimental and clinical trials came to opinion that the APC is one of the best ways of a hemostasis who allows

reducing twice extent of blood loss at emergency the biliary surgeries [28, 32].

APC can effectively be applied for coagulation of a bed of a gallbladder, injuries of the hepatic parenchyma, and all disconnected adhesions during ChCEc providing a reliable hemostasis. Thus, the reliable hemostasis at moderate thermal damage of biotissue and sterilization of a zone of application prevents development of intraabdominal bleeding and provides an uncomplicated flow the reparative of processes [28].

### Conclusions

Thus, concluding the review of literature it is possible to conclude that questions of diagnostics and treatment of postoperative intraabdominal bleedings after various options of ChCEc continue to remain an actual problem.

Number of intraabdominal bleeding cases among postoperative complications observed after different types of ChCEc is rather great. Hence, accumulating on a background of those heavy pathophysiological changes caused by the operation, it is considerable worsens postoperative condition of the patient and negatively influences the result of surgical treatment of patients with AOCh.

Recently, for correction of intraabdominal bleedings after ChCEc along with traditional surgeries the mini-invasive interventions have been widely performed with an aim of compulsory surgical elimination of a source of bleeding, careful sanitation and drainage of an abdominal cavity.

In addition, the analysis of literature showed the further research on and development of improvement of ways of a reliable intraoperative hemostasis are essential.

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#### INTRAABDOMINAL BLEEDINGS AFTER VARIOUS OPTIONS OF CHOLECYSTECTOMY

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*As the review of literature has shown, the leading place among intra-abdominal complications after various variants of cholecystectomy is postoperative bleeding, which is about 4% in the structure of postoperative complications. The causes of intra-abdominal bleedings after cholecystectomy are different, but most often they are poor quality and technique of performing surgical interventions, insufficiently thorough and reliable intraoperative hemostasis. Domestic and foreign authors note that signs of intraabdominal bleedings in biliary surgery are most easily detected with the help of echography, which due to its non-invasiveness, speed of execution, high sensitivity is considered as a screening method. The use of CT and MSCT in 3D reconstruction much more increases accuracy of establishing the presence of intra-abdominal bleedings and hematomas after cholecystectomy.*

**Key words:** acute obturation calculous cholecystitis, cholecystectomy, intra-abdominal bleedings, diagnosis, treatment.