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Tutorial to prepare for practical classes in the Faculty of surgery for the students of the course 4 medical, Pediatric, medical-preventive and dental faculties

**CHOLECYSTITIS**

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Cholecystitis is one of the most common surgical diseases of the abdomen, often combined and complicating jelchnokamennouu disease.

In this manual sets out the modern views on etiology and pathogenesis of cholecystitis, addressed questions to the clinic and diagnostic of the disease, provided modern methods of conservative and surgical treatment of cholecystitis and its complications.

The manual is intended to prepare for practical classes in the Faculty of Surgery students 4 course medical, Pediatric, medical-preventive and dental faculties.

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Tutorial considered and recommended for printing FIGURE OrGMA.

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**introduction**

Cholecystitis-non-specific inflammation of the gallbladder, almost always caused by cholelithiasis (GSD) and in most cases developing after blockage of gallbladder duct stone.

GSD suffer from 10 to 20% of the total population of the globe, up to 40% of persons over the age of 60let and up to 50% are older than 70 years (Savel'ev b. Since 2006). In Europe and America GSD occurs in 20-30% of adult women and slightly more than 10% in men.

Among all acute abdominal disease acute cholecystitis takes 2-w-e, and according to recent statistics even rank 1, representing 20-25% of patients.

Despite significant advances in the diagnosis and treatment of cholecystitis, mortality remains high, accounting for 6-12%. Particularly high mortality in patients of elderly and senile age.

History of teachings on cholecystitis directly linked to cholelithiasis. The inflammatory changes of the gallbladder at that first drew the attention of the D. Morgagni (1760) and m. Gemsbah (1856). B. Naunin (1892) and P. S.Ikonnikov (1906) were seen as the cause of the formation of concrements in the lumen of gallbladder inflammation.

B. Riedel (1903) described the acute cholecystitis caused without stones. A great contribution to the study of the problem had made Russian clinicians: N.v. Sklifosofskij, a.t. Bogaevsky, a. Ignatov, N.d. Monastery, S.p. Fedorov, a.p. Martynov, a. Vishnevskiy, B.v. Petrovski, e.v., Smirnov B.a. Korolyov, D.l. Pikovskij, Vladimir Rodionov, A. A. Shalimov, V.s. Saveliev. Foreign scientists-Coeur, l. Aschoff, Shoffar, Kerte, Finsterer, etc.

In 1735 g. Petit first performed three holecistostomii, Sims and T . Kocher this operation was repeated in 1787, 2010.

First performed, 1882 in holecistjektomiju. Langenbuch, and in Russia in 1886,. -U.f. Kossinskij and in the 1895 g. -A.f. Heels. Holecistostomiju in Russia in 1884 g. E.v. in 1890, Pavlov-N.v. Sklifosovsky. First holecistojenterostomija was made in 1887 g. N.d. Monastery.

First laparoscopic holecistjektomiju complied with f. Moore (Lyon) in 1988.

Within this tutorial assumes development of students following competencies in accordance with the requirements of the GEF 3 generation: OK-1, PC-5, 17, 19, 20, 27.

**The purpose of the study topics**

To acquaint students with one of the most frequent and severe diseases of the abdominal cavity. Assist them in the development of etiology and pathogenesis of cholecystitis, peculiarities of its clinics, differential diagnosis, complications and treatment.

**Brief anatomic-physiological**

**features biliary ducts system**

Liver (hepar) is the main body of biliary ducts system and is located in the upper division of the abdominal cavity, asymmetrically midline of the body, most of it takes the right hypochondrium and nadchrevnuju area, and smaller is placed in the left hypochondrium.

The upper surface of the liver is completely covered with peritoneum, on the lower surface of the brjushinnyj cover is absent only in the location of furrows, rear surface devoid of peritoneal cover at a considerable distance.

Covering the liver peritoneum goes on neighbouring organs, and in places of transition forms bundles (beauty Guide, serpovidnuju, left and right triangular, liver-kidney, liver, renal and hepatic gastric duodenal). All of them except Hepatorenal are doubled sheets of peritoneum.

Blood enters the liver through hepatic artery and vein vorotnuju.

Hepatic Portal vein (v. portae) collects blood from almost the entire intestine, stomach, pancreas and spleen. The volume of blood entering the liver via the vorotnuju vein 2/3 reaches the entire circulating blood in that body. It is rich in chemicals that form the basis of the synthesis process of digestion.

Hepatic Portal vein is formed behind the pancreas, on the border of transition heads into the body of the gland, respectively (I) loin vertebra and its roots most often are the upper bryzheechnaja and selezenochnaja veins.

Hepatic veins (was hepaticae) that flow into the lower hollow vein near passing through the aperture, is carried out by the outflow of venous blood from the liver.

Secretion is the specific function of the liver. Per day are normal in humans from 500 to 1200 ml. bile (up to 4000 ml.).

Bile is involved in intestinal digestion: neutralizes acid food gruel from the stomach into the duodenum, breakdown (hydrolysis) and absorption of fat and fat-soluble vitamins, excitingly operates on irritative colon.

Bile produced by the liver cells and secreted into the tone of chajshie channels, which represent first simple slit between cells, merging with each other. these cracks gradually hundred become wider, appears the epithelium and they become zhelch s ' ducts, which increase in caliber, joined and eventually form a two barrel: left and right hepatic ducts. Poach in 95% of cases left and right hepatic ducts merge outside of the liver at a distance of up to 0.75 1.5 cm. from its surface Diameter Le first liver duct larger than the right.

After the merger is formed common hepatic duct behind the loose retroperitoneal tissue and has a diameter of 4 mm, length from 2.5 to 5 cm. He lies ahead of the right edge of the portal vein is often in front of his perekreshhiva em cystic artery (right-to-left - ductus, venae, arteriae - d. (v) . (a) . - "two").

From the place where the common hepatic duct joins the gallbladder duct, common bile duct begins-holedoh. For surgeons it is important to keep in mind and on the relationship between puzyrnoj artery puzyrnym flow and common hepatic flow-triangle Callot (Callot).

Gallbladder (vesica fellea) *(fig. 1)* is located on the visceral surface of liver in front of the right sagittal sulcus. Fabric liver he most often associated areolar cloth bottom gall bladder is projected onto the front abdominal wall in the area of the angle formed by the outer edge of the right rectus and costal arch.

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**Figure. 1. vnepechenochnoj zhjolchevydelenija system schematic**

Gallbladder is pear-shaped, its length 6-12 cm, width - 3-5 cm. capacity - average 50-60 ml. It distinguishes the bottom (fundus), body (corpus), and bevel narrowed Division - neck (collum). Neck of gallbladder enters the cystic duct. In place of the transition there are often meshkovidnoe Diverticulum, called Pocket Hartmann (Hartmann). Bubble wall consists of three layers: serous, muscular and mucous. Underdeveloped muscular layer. Between muscle fibers deeply penetrates the Mucosa, it may even be serous. Formed cracks or sinuses are called Sines Rokitansky syndrome-Ashoffa. Sometimes they form ducts penetrate through the wall of the bladder in the liver (where there is a serous shell) and combined with hepatic ducts (Ljushka strokes). Gallbladder mucosa of yellowy-brown colour, mesh, lined by uniform cylindrical epithelium, possessing great suction power.

The gall bladder is usually covered with peritoneum on three sides (mezoperitonealno), but sometimes from all sides (intraperitonealno) - "hanging gallbladder and rarely with only one hand (jekstraperitonealno).

Blood supply of the gallbladder is via the puzyrnuju artery (a. cystica), which in 90% of cases deviated from the right hepatic artery. The artery is often located in close proximity to puzyrnym flow, pathological processes which can be accompanied by her thrombosis and evolution of gangrene. This artery atherosclerotic changes in seniors and the elderly can also be accompanied by gangrene.

Venous outflow is carried out based on the Vienna vorotnuju, flowing into a vein.

Gall bladder has a well-developed network of lymph, which anastomose with the lymphatic vessels of the pancreas, stomach, spleen, intestine and right kidney.

The function of the gallbladder is directly related to the function of the liver, pancreas, and duodenum. First of all, it regulates the circulation of bile from the liver in gastrointestinal tract. Gall bladder fills with bile secretory pressure influenced the liver, that reaches 300 mm. waters. Church. In bladder bile is concentrated in 7-10 times, its relative density rises from 1010 to 1026. Thus, the first function of the gallbladder is concentration.

The second function - motor, regulates emptying of the gall bladder, which portion of the bile comes to participate in digestion in strictly defined periods. Motor function is carried out at the expense of tone and motility of the wall of the bladder, the ducts and the apparatus of the obturator gallbladder and common bile duct.

The primary reaction depends on the emptying reflex of the oral cavity, oesophagus, stomach and duodenum. In the future, an important role in regulation of motility of gall bladder and Pepsi ways plays the character of a food. Throwing away bile into the duodenum coincides with the passage of Peristaltic waves through the pylorus. The duration of the reduction depends on the content of fat in food.

Regulation of the functions of the gallbladder is carried out by neurohumoral. In addition the Act food and reflexes passing food of great importance are hormones the duodenum and jejunum. Cholecystokinin wall contraction of the gallbladder. In the regulation of bile production and biliary excretion play a role SECRETIN, corticosteroids, thyroxine, adrenaline. Hormones influence via the autonomic nervous system.

The gall bladder is part of vnepechenochnoj bile system and closely connected anatomically and functionally with the liver and, above all, with its ductal system as well - with the pancreas *(fig. 2)* .

**Figure. 2. Scheme of the anatomical structure of gepatikobiliarno-pancreatoduodenal zones: 1-2, liver-gall bladder, 3-cystic duct 4-common hepatic duct, common bile duct-5, 6-7, pancreas-main pancreatic duct, 8-duodenum**

The average length is descended from the gall bladder gallbladder duct (ductus cysticus) is 3-5 cm, diameter 2-3 mm, but can be significant deviations in size. Often cystic duct coming to common hepatic pass under a small acute angle and into his right side. There may be a variety of options: connect it with one of the hepatic ducts, duct extension, parallel and spiral relationship with General bilious channel, absence of gallbladder duct *(fig. 3).*

**Figure. 3. Variants of the anatomical structure of gallbladder duct**

Common bile duct (ductus choledochus) has a length of 7-8 cm, diameter of 0.5 cm. Increasing its diameter more than 1.0 cm is considered to be pathologic extension and presents an obstacle to the smooth passage of bile.

In General bilious channel *(fig. 4)* there are four divisions:

1) supraduodenalnyj-above the duodenum

2) retroduodenalnyj-behind the duodenum

3) pancreatic-between the wall of the duodenum and the head of the pancreas (sometimes in the thick of the pancreas)

4)-duodenal wall of duodenum

**Figure. 4. General Divisions**

**bile duct.**

*1-Supraduodenalnyj Department.*

*2-Retroduodenalnyj Department.*

*3-Pancreatic Division.*

*4-Duodenal Division.*

*5-duodenum.*

*6-Pancreatic duct.*

*7-the head of the pancreas.*

Common bile duct opens into the lumen of the duodenum in the descending portion, where there is at the confluence of the big duodenal nipple (Vatery). Often a joint pankreaticheskim with Confluence flow *(fig. 5-a)*, although it is possible to separate elevations *(fig. 5-b)*. If both duct flow together, then formed USD (60-75%) May fall into the common bile duct with pancreatic *(fig. 5)*.

**Figure. 5. options for certain common bile and main**

**pancreatic duct**

The wall of the common bile duct is the mucous and muscular shells and sphincters, Chief of which is the sphincter of Oddi. The sphincter of Oddi is composed of three parts that form a single functional zamykatelnyj apparatus: the most powerful sphincter the duct, sphincter pancreatic duct sphincter and one for both ERCP.

**Etiology and pathogenesis acute cholecystitis**

Currently, there are several theories to explain the occurrence of inflammation in the gallbladder.

1. the infectious theory: it is believed that the penetration of infection in the gall bladder, especially slabovirulentnoj, which causes the bladder mucosa epithelium sluschivaetsya. Lumps of the epithelium on the background of bile serve kernel around and OSiE produce bile lime and cholesterol. Infection in the gall bladder can fall: from the KDP, on channels, limfogennym and hematogenic osteomyelitis waysandoften is e. coli, Staphylococcus aureus, and strepto the uccc, etc.

2. theory of bile, as the cause of stone formation, nominated by l. Ashof POF in 1924 according to contribute to this local conditions - stagnation of bile, local inflammatory process.

3. Pon the theory developed by Shoffarom in 1924. , the formation of gallstone formation is investigated for problems throughout the body -metabolic disorders, in particular when cholesterol significantly increases the number of holesteri on the blood. Confirmation of this theory can be seen in the fact that during periods when normally increases cholesterol levels in the blood ( pregnancy, after childbirth, menstrual period), as well as with abundant nutrition products, contain many cholesterol (egg yolks, fat, lamb, moz GI, liver, cauliflower, carrots, etc.) appear for the first time or frequent bouts of GSD. The increase of cholesterol management not only in blood but also in bile.

4. hereditary predisposition to various diseases and, in particular, emphasized by many authors GSD. Talking about pre disposition to violations of metabolic processes, in this case, the holesterinovomu Exchange.

None of these theories is not exhaustive, it is most likely an acute cholecystitis due to the action of not one, but several Etiologic factors but the leading role belongs to the infection.

Bacteriological basis of acute cholecystitis are different microbes and their associations. Among them are the main value of Esherichia coli group bacteria gram-negative and Gram-positive bacteria of the genus Staphilococcus and Sterptococcus. Other organisms that cause inflammation of the gallbladder, are extremely rare. gall bladder infection spreads three ways: hematogenic osteomyelitis, jenterogennym and limfogennym.

When applied at the way the infection gets into the gallbladder from the general circulation on the system of the common hepatic artery or from the intestinal tract of Portal vein in the liver. Only by reducing the Phagocytic activity of liver microbes pass through cell membranes in bile capillaries and then in the gall bladder.

Limfogennyj path of infection is possible due to the extensive hit due to the lymphatic system of the liver and gall bladder with the organs of the abdominal cavity. Jenterogennyj (ascending)-the path of infection is possible with the terminal disease of the common bile duct, functional disorders of the it sfinkternogo apparatus when infected duodenal contents can shooting in bilious paths. This way the least probable.

Inflammation of the gall bladder infection does not occur by ingestion, unless broken its drainage function and there is no delay of bile. In case of violation of the drainage function of the conditions necessary for the development of inflammatory process. Factors the breach outflow of bile out of the bubble: molar excess or extended izvitogo duct, its contraction.

In the pathogenesis of acute cholecystitis are important vascular changes in the wall of the gallbladder. From circulatory disorders in the bladder due to thrombosis puzyrnoj artery depend on the rate of development of the inflammatory process and the severity of the disease. A consequence of vascular disorders are the foci of necrosis and perforation of the wall of the bladder. In elderly patients with vascular disorders associated with age-related changes can cause the development of destructive forms of acute cholecystitis (primary gangrene of the gallbladder).

Have value and chronic changes of the gallbladder in the form of sclerosis and atrophy of the elements of the walls of the bladder.

Acute cholecystitis, arising on the grounds of cholelithiasis is 85-90%. The main place of biliary calculus is zhelch th bubble, in rare cases, jelchne ways.

Requires a number of conditions conducive to the formation of stones in the zhelch Nome, the leading ones are: 1) the presence of infection; 2) stagnation of bile; 3) glut of bile bilirubinom and cholesterol.

Formation of gallstones in the gallbladder occurs as a result of the deposition of dense particles Tata bile. the majority of stones (70%)consists of cholesterol, bilirubin and calcium salts.

*Cholesterol stones* gallbladder stones: most forms of cholesterol settles of bile oversaturated (especially at night, during the period of maximum concentration in a bubble). Women's risk of gallstones increases the use of oral contraceptives, rapid weight loss, the presence of diabetes mellitus, resection of the ileum. Cholesterol stones are large, with a smooth surface, yellow, often lighter than water and bile. When the ULTRASOUND detect symptom of floating stones. Increasing the concentration of cholesterol and bile salts or reduction of the concentration of lecithin contributes to the formation of stones holesterinovykh. Theoretically, increasing the concentration of leci Tina and biliary salts in bile must prevent the formation of Ho lesterinovyh stones. At 13% of patients receiving inside bile acids (for example, henodezoksiholevuju) for 2 years, the stones are analysed fully in 41% of cases is partially dissolving stones.

*Pigment stones* gallbladder, predominantly of calcium bilirubinata, find in patients with chronic GE molizom (for example, when sickle cell anemia or sferocitoze). Infection of bile microorganisms, synthesizing betagljukuronidazu, also contributes to the formation of pigmental stones as leading to increased content in bile direct (unassociated leg) bilirubin. Pigment stones have a smooth surface, see lenyj or black color.

*Mixed stones* often formed against the background of the inflammation of the biliary tract - infection based processes increase in bile calcium content and beta-glucuronidase deficiency (enzyme converting associated bilirubin in freedoms NYY). Calcium, would unite with free bilirubinom, settles in as stones (calcium salt of bilirubin).

While reducing gallbladder calculus migrate. Obturation stone gallbladder duct leads to shutdown of the gall bladder and the emergence of obturacionnogo cholecystitis, dropsy gall Pu zyrja.

5. As a result of anatomical and physiological connection with biliary outlet ducts of the pancreas may develop enzymatic cholecystitis. Their appearance is not the action of microbial factor and with heating pancreatic juice in the gall bladder and the damaging effect of pancreatic enzymes in the tissue of the bladder. Generally, the form data is combined with symptoms of acute pancreatitis. Combined forms of acute pancreatitis and cholecystitis treated as an independent disease, called "cholecysto-pancreatitis.

**Classification of cholecystitis**

The classification of cholecystitis, in addition to the theoretical value, is of great practical significance. Rational composed classification gives the surgeon the key not only to properly include some form of a particular group, but to choose the appropriate tactics in the preoperative period and during surgery.

There are many classifications of cholecystitis. One of the most used is the classification of Prof. A.t., (1963), according to which all cholecystitis are divided into **calculous and incalculary**.

Among them are:

1. Primary Acute cholecystitis:

Catarrhal

Flegmonoznyj

Gangrenous

2. Recurrent cholecystitis.

3. Primary chronic cholecystitis.

4. Secondarily-chronic cholecystitis (the traumas of acute).

5. Sclerosing chronic cholecystitis.

In the classification **of acute cholecystitis**normally lies clinico-morphological principle is dependence disease clinical manifestations of pathological changes in the gallbladder, abdominal cavity and the nature of the changes in extrahepatic bile ducts.

In surgical practice also applies the classification proposed by A.m. Dzhavdjanom and P.b. Krylov (1976), in which there are two groups of acute cholecystitis: **uncomplicated and complicated**.

I. Uncomplicated cholecystitis:

1. Catarrhal (simple) holetsistit (calculous or acalculous), primary or exacerbation of chronic relapsing.

2. Destructive cholecystitis (calculous or acalculous), primary or exacerbation of chronic relapsing:

and flegmonoznyj, flegmonozno)-ulcerative

b) gangrenous.

II. Acute cholecystitis:

1. Occlusive (obturazionny), cholecystitis (infected dropsy, Phlegmon, empiema gallbladder, gangrene), periholetsistit.

2. Probodnoj cholecystitis with local or General peritonitis.

3. Acute cholecystitis, complicated bile duct lesion:

a) choledocholithiasis, cholangitis

b) stricture exeresis, papillit, stenoses faterova nipple.

4. acute cholecystopancreatitis.

5. Acute cholecystitis, oslojnenny propotnym bilious peritonitis.

By neoslozhnennomu acute holecistitu all identification forms of inflammation of the gallbladder, routinely encountered in clinical practice is a catarrhal, flegmonoznyj and gangrenous cholecystitis. Each of these forms should be seen as a natural development of the inflammatory process, step-by-step transition from catarrhal inflammation to gangrene. The exception to this pattern is the primary gangrenous cholecystitis because mechanism of its development lies the primary thrombosis puzyrnoj artery.

Acute inflammation of the gallbladder can occur if there are stones in its lumen and without them. The decision taken by the Division for acute cholecystitis and acalculous calculous is conditional, because regardless of whether there are stones in the bladder or they do not exist, the clinical picture of the disease and therapeutic tactics are almost the same when each form cholecystitis.

Cholecystitis complicated Group account for complications that are directly associated with inflammation of the gallbladder and infection beyond. These complications include: okolopuzyrnyj infiltration and abscess, periholetsistit, CPMSR gall bladder, jelchne prevalence varying peritonitis fistulas, acute pancreatitis, and the most frequent complication-obstructive jaundice and cholangitis. complicated forms occur in 15-20% of cases.

**In the pathologoanatomic respect are distinguished:**

Among the acute cholecystitis -

1) simple (catarrhal) cholecystitis

2) destructive-flegmonoznyj, gangrenous, perforativnyj.

Among chronic cholecystitis -

1) Hypertrophic

2) atrophic

3) hydrops of the gallbladder.

**Clinical presentation and diagnosis of acute cholecystitis**

The clinical picture of cholecystitis varied, depending on the pathology of a form of inflammation of the gallbladder, availability and incidence of peritonitis and related changes in the biliary ducts. Due to the diversity of the clinic diseases arise diagnostic difficulties and errors.

**Acute cholecystitis** usually begins suddenly. Development of acute inflammation in the gallbladder is usually preceded by a bout of biliary (liver) caused by occlusion of the gallbladder colic. duct stone acute pain attack can kupirovatsja on his own, but mostly just after receiving case preparations. Often, a few hours after the attack heavily hepatic colic, resumes clinic acute cholecystitis.

In the clinic of acute cholecystitis are three leading syndrome:

1) pain

2) dyspeptic

3) endogenous intoxication

***1. Pain Syndrome***

The leading symptom of acute cholecystitis is severe and constant pain in the abdomen, the intensity of which as the illness progresses. Is characterized by acute onset, usually after errors in the diet. A distinctive feature is its localization of pain in the right podreberie radiating to the right supraclavicular region, shoulder, shoulder or in right lumbar region.

Irradiation illusion is possible pain behind the sternum and the heart (cholecysto-cardiac syndrome S.p. Botkin). Distribution of pain stomach left reveals the accession of acute pancreatitis.

The elderly may be a discrepancy of clinical manifestations of acute cholecystitis and severity of inflammatory changes in the gallbladder.

Development gangrenoznyh changes in the wall of the gallbladder can clinically manifest the so-called period of imaginary well-being - decreasing pain due to necrosis of receptors sensitive apparatus.

***2. Dyspeptic syndrome****.*

Persistent symptoms of acute cholecystitis are nausea and repeated vomiting, not bringing facilitate patient.

***3. endogenous intoxication Syndrome****.*

Increased body temperature (from subfebrile to high) notes from the early days of the disease. The nature of her many depends on the depth of the pathological changes in the gallbladder. When destructive cholecystitis low quickly reaches 380C and higher.

Tachycardia, sweating and shivering. Pulse rate ranges from 80 to 120 strokes in 1 min and above. Frequent pulse is a symptom indicating deep heavy intoxication and morphological changes in the abdominal cavity.

The condition of the patient happens to be different, depending on the severity of the disease. Normal skin colour. Moderate scleral occurs when a local hepatitis and if inflammatory infiltration of the extrahepatic bile ducts with stagnation of bile in them.

Due to holedoholitiaza or cholangitis, can occur **mechanical jaundice** manifested zheltushnostju skin and sclera. Jaundice occurs in 20-40% of patients.

The emergence of bright jaundice skin and sclera indicates a mechanical obstacle normal drain bile in the intestines, which may be associated with occlusion of bile duct stone or with Terminal Burns stricture of the common bile duct.

Language is usually dry, with white or brownish coating. By palpation is determined by the sharp pain and muscle strain in the right upper abdomen, especially square sharp pain in the area of the gall bladder. In the transition process in the parietalnuju the peritoneum arise voltage abdominal muscles are a symptom of Schetkina-Bljumberga. Gallbladder unable palpated by when he grows in size and becomes dense (with destructive forms of acute cholecystitis). However, when significant muscle tension gauge it is not always possible.

During the examination the patient identifies the following specific symptoms: acute cholecystitis

With imptom ORTNER-GREKOVA - soreness when pokolachivanii Palm edge along the edge of the right rib arc.

With imptom MURPHY - involuntary apnea breathing at pressing on the projection area of the gallbladder in the right podreberie.

With imptom MUSSY-ST GEORGE - frenikus-a symptom is a sharp pain at the pressure between the legs right grudinno-kljuchichno-mastoid muscles.

With KERA imptom - emergence or increased pain during inhalation by palpation in the right podreberie in gallbladder point (point kera).

With imptom ZACHARIN - soreness when tapped with fingers crossing right rectus with rib bow (projection of the gallbladder).

With imptom ShOFFARA- pain by palpation in the Connections pane right clavicle to sternum.

With imptom BAKERY - pain when pressing on the xiphoid process of the sternum

With imptomy IRRITATION of the PERITONEUM are positive when the destructive forms of acute cholecystitis (flegmonoznom or gangrenoznom).

**Diagnosis of acute cholecystitis** in cases of a typical course of the disease is not difficult. Is characterized by pain in epigastria (the right podreberie) radiating in right shoulder, shoulder blade, the supraclavicular region. Sometimes pain is accompanied by reflex angina (cholecysto-cardiac syndrome S.p. Botkin). pain increases with the slightest physical tension is talking, breathing, coughing.

Pain is often the nature of hepatic colic-very sharp, in which patients are restless, tossing, changing the position of the body, most often in the GSD, with blockage of the duct or gallbladder choledochitis stone less mucus or pus. In other cases, the pain increasing gradually, patients lie, afraid to move, "roll" that occurs during the ascendancy of the inflammatory process, stretching the bladder inflammatory exudate and integration in the process of peritoneum.

Body temperature-when colic is normal, if there is inflammation ascends to high numbers, when complications holangitom there are shivers. Even if the elderly have destructive forms of temperature can remain normal.

Belly limited participates in breathing in the upper division, painful and tense in the right podreberie, when destructive forms indicated protective muscle tension, positive symptoms Shchyotkina-Bljumberga and Mendel.

Jaundice-occurs more frequently in kalkuleznyh forms when it is in the nature of obturative, mechanical. It may be the result of secondary hepatitis or concomitant pancreatitis, cholangitis as well-then it happens parenhimatoznoj. Obturative jaundice is Genesis usually precedes an attack of hepatic colic, she can wear remitirujushhij nature (in contrast to obstructive jaundice tumour origin, which develops slowly and progressively increases). When complete obturation choledochitis in addition to intensive colouring of urine (due to the presence of bilirubin)-"colors of beer", "strong tea", becomes discolored feces-no stercobilin is yellow with a white man "faeces".

The liver increases but splenomegaly (unlike the hemolytic jaundice). With prolonged jaundice comes the death of liver cells, secreted by white bile ", develops liver failure with the transition into a coma. Rapidly progressing and moving into a destructive form of enzymatic and vascular cholecystitis.

Sometimes it can be positive symptom Courvoisier is palpated enlarged gall bladder, painless or peripuzyrnyj infiltration (although this symptom described in cancer of the head of the pancreas and, strictly speaking, is not a symptom cholecystitis).

Can be determined by symptom Boas-pain by palpation okolopozvonochnoj zone at the level of the 9th-11th thoracic vertebrae and at 3 cm. to the right of the spine. The presence of pain in this place in cholecystitis associated with zones hyperesthesia Zaharin-Gaede.

**Uncomplicated cholecystitis:**

***Catarrhal (or simple) cholecystitis*** calculous may be or beskamennym, primary or as the exacerbation of chronic relapsing. Clinically it in most cases quietly flows. The pain is usually a dull, appears gradually in the upper abdomen; amplifying localized in the right podreberie. Language is usually wet, multiple subject.

By palpation indicated pain in the area of the gallbladder, ibid. defined moderately positive symptoms Ortner-Grekova, Murphy, Kera, Zacharin. Peritoneal symptoms are absent, the number of leukocytes within -10 8.0,0x109/l, temperature0C 37.6, rarely up to 380C, oznobov No.

Bouts of pain usually continues for several days, but after conservative treatment.

***Acute destructive cholecystitis*** may also be beskamennym or, calculous primary or acute exacerbation of chronic relapsing.

Destruction can be flegmonoznyj, flegmonozno-ulcerative or even gangrenous nature.

*When flegmonoznom cholecystitis* pain of a permanent nature, intense dry language, repeated vomiting can be a small scleral, soft palate, due to infiltration of gepatoduodenalnoj ligament and inflammatory swelling of the mucous membrane of the Urine bile ducts. dark brown in color. Patients lie on your back or on the right side, afraid to change body position, because in this case the pain is amplified. By palpation of the abdomen there is sharp tension of muscles of the anterior abdominal wall in right hypochondrium region, there have been positive symptoms Ortner-Grekova, Murphy, Zaharin, Schetkina-temperature Bljumberga reaches 380C and higher, leucocytosis, -16 12.00x109/l with lejkovina shift formula left. When distributing an inflammatory process in the entire gall bladder and accumulation of pus in it formed empiema gallbladder.

Sometimes flegmonoznyj cholecystitis with loss of infection and blockage of the gallbladder duct may become vodjanku gallbladder. And then the patient by palpation in the right podreberie is determined by the enlarged gall bladder, painless (with-m Courvoisier).

*Gangrenous cholecystitis* in most cases, is the transition form flegmonoznogo, but can also arise as a separate disease as primary gangrenous cholecystitis vascular Genesis.

The clinic initially corresponds to flegmonoznomu inflammation, then there may be a so-called imaginary well-being: reduces pain, less pronounced symptoms of irritation of the peritoneum, dropping temperature. However, this growing phenomenon common intoxication: frequent pulse, dry tongue, repeated vomiting, sharp facial features dramatically tummy is strained by palpation painful in the right podreberie, defining positive symptoms Ortner, Kera, Zaharin, Murphy, Shchetkina-Bljumberga.

Primary gangrenous cholecystitis, from its very beginning, is booming with symptoms of intoxication and peritonitis.

**Acute cholecystitis** . 15-25 have complications are% (A.t. Lida) and even up to 45% (Vs Majat) patients.

***Occlusive (obturazionny) holetsistit*** develops at HM konkrementom duct obstruction and is manifested initially, a typical picture of Biliary colic, which is the most characteristic feature of cholelithiasis. Sharp pain occurs suddenly in the right podreberie with irradiation right shoulder, shoulder blade, in the heart area and over the sternum. Patients behave nervously, at an altitude of attack appears vomiting, sometimes multiple. The belly may be mild, but in the right podreberie palpated sharply painful, enlarged gall bladder, and intense.

Attack bile colic can last a few hours or 1-2 days and at reverse othozdenia stone in gallbladder suddenly fade away. With prolonged blockage of the gallbladder duct and attach the infection develops destructive cholecystitis.

***Probodnoj cholecystitis*** usually runs with a local or General peritonitis. Time of perforation of the gallbladder may be left to the patient. If a bilious bubble soldered neighbouring organs peritoneum, gepatoduodenalnaja ligament, Cross-colon and its mesentery, i.e. process are delimited, then develop complications such as podpechenochnyj or subphrenic abscess, limited peritonitis.

***Complicated acute cholecystitis, bile duct lesion,*** can be holedoholitiaza with clinical manifestations, cholangitis, stricture, papillita exeresis, faterova stenosis nipple. The main symptom of this form of mechanical jaundice, which is the most frequent cause of concrements General bile duct, obturirujushhie his clearance.

When obstruction of the common bile duct stone disease begins with acute pain characteristic of acute cholecystitis is typical with radiating. Then a few hours later or the next day appears obturazionnaya jaundice, acquiring resistant nature, accompanied by strong skin itching, dark urine and discolored (aholichnym) zamazkoobraznym feces.

As a result of the accession of infection and spread it on bile duct develops clinic of acute cholangitis. For acute purulent cholangitis is characterized by phenomena of severe intoxication of general weakness, loss of appetite, yellow coloring of the skin and mucous membranes.

Constant dull pain in the right podreberie radiating at right half back, the heaviness in the area of the right hypochondrium, with pokolachivanii on the right rib arc-sharp pain. Body temperature rises to remittirujushhemu type, with abundant sweating and oznobami. Charcot's triad: pain in the right hypochondrium, fever, jaundice. The tongue dry, hedged. The liver is enlarged by palpation, painful, soft consistency. Is marked leucocytosis with shift lejkovina the formula to the left. When the biochemical study of blood observed increase of direct bilirubin and lowering the content of prothrombin in the blood plasma. The disease can lead to life-threatening holemicheskimi bleeding and liver failure.

**Laboratory examination methods:**

*1. Clinical blood analysis* -in patients with acute cholecystitis are identified: Leukocytosis, ESR, neitrofilny shift to the left.

*2. General urine analysis* for differential diagnosis with urological pathology (elements, protein) and detection of bile pigments.

*3. biochemical blood test for bilirubin and its fractions prothrombin index, cholesterol, sugar, protein and its fractions. As a matter of urgency, define amylase blood and urine diastase.*

When zheltuhah is in the urine is explored in the urobilin Calais stercobilin.

**Instrumental methods of diagnosis of cholecystitis**

**1. Ultrasound examination of the abdomen** -the modern the most accessible and informative method, is very valuable and should be done in the first place.

Identifies: the presence of stones, okolopuzyrnogo infiltration (abscess), consistency of content, the width of the duct . Allows you to define the dimensions of the gall bladder and the thickness of its walls (signs of inflammation, dvuhkonturnost).

**Figure. 6. acute calculous cholecystitis "double contour" wall of the gall bladder** (arrow)**, «zamazkoobraznaja» bile** (two black arrows).

**2. Esophagogastroduodenoscopy (FGS)** is shown in the presence of jaundice-gives the opportunity to see the papillu see the bile or lack of faterova nipple, as well as find vklinivshijsja it konkrement.

**3. computer (CT) and magnetic resonance (MRI) imaging** -diagnostic methods are quite expensive, highly informative and to identify formations in the gall bladder and biliary ducts, condition and dimensions of ducts, retroperitoneal lymph nodes, pancreas, liver, other organs BRjushnoj cavity and retroperitoneal space.

**Fig. 7. Calculous cholecystitis. CT-picture of concrements in the gallbladder**

**4. X-ray methods** for many years was the only way to detect gallstones and biliary tract. Study biliary tract in cholecystitis and calculous allows you to install incalculary form Select patients with nefunkcionirujushhim (disconnected) a bilious bubble.

Currently known and apply the following types of holecistoholangiografii: oral, intravenous, intravenously infusion, endoscopic retrograde percutaneous transhepatic cholangiography(JeRPHG), percutaneous (controlled by a laparoscopy or ultrasound), percutaneous-chrezpechjonochnaja , intraoperative and fistuloho-langiografija.

Distinguish between ***direct and indirect holecistoholangiografii*** *.*

**A) direct methods** involve the introduction of contrast material directly in the gallbladder or biliary track.

**B) Indirect methods** are based on the ability of liver cells to secrete bile with a contrast dye, which, once in the bile path, allows you to get their picture on radiographs. Not effective when the obstruction gallbladder and other ducts.

*Direct holecistoholangiografija* apply for suspected mechanical jaundice to identify the causes of cholestasis. When conducting research can reveal concrements in the gall bladder and biliary tract, determine the nature of the changes of bile ducts (stenosis due to compression of the enlarged pancreas head tumor, stricture, expansion of intra-and extrahepatic bile ducts, anatomical abnormalities, etc.).

Contrast (bilignost, bilitrast, holegrafin, jendografin, etc.) can be entered in the following ways:

 When kanjuljacii major duodenal papilla during ERCP execution

 through percutaneous liver puncture directly in advanced vnutripechenochnye bile ducts- percutaneous-chrespechjonochnaja holangiografia (ChChHG)

 a puncture of the gallbladder controlled by a laparoscopy or ultrasound

 intraoperatively (intraoperative c cholangiogram (IOHG)), through the introduction of contrast material through a stump gallbladder duct, common bile duct cannulation, the introduction of contrast agent in drainage, installed in a bilious channel -fistuloholangiografija (possibly and in aftercare period).

**Fig. 8 . Percutaneous-chrezpechjonochnaja c cholangiogram with cholecystolithiasis. Kontrastirovan konkrement, obturirujushhij common bile duct.**

**Figure. 9. JeRPHG. Radiograph. Retrograde holangiogramma. On the direct and kosobokovoj projections render concrements in the General bilious channel and part of the cavity of the gallbladder, free of concrements.**

*Indirect holecistoholangiografija*

Depending on the method of introduction of iodinated contrast indirect holecistoholangiografiju divided into **oral, intravenous, and infusion.**

Diagnostic accuracy of oral holetsistografii later 10-15 h. After taking the drug a contrast is low. The most important condition for conducting oral holetsistografii is the lack of obstruction gallbladder duct and other ducts.

YOU CANNOT PERFORM a STUDY in ACUTE INFLAMMATORY process in the MECHANICAL JAUNDICE when CONCENTRATIONS of DIRECT BILIRUBIN EXCEEDS 3 MG% (50 mmol/l).

If extrahepatic biliary study ways to kontrastirujutsja, and the bubble is not defined, then one can speak of "disconnected" gall bladder (obliteration gallbladder duct, corking his stone, clot bile or phlegm).

**Holetsistografia (oral or intravenous) informative only with shopping are duct and gall bladder operation.**

The oral route of administration of contrast material used: bilitrast, holevid, jopagnost, telepak, bilimin etc.

For intravenous cholangiography used contrasting substances with high gepatotropnostju and contain plenty of iodine (holegrafin, jendografin, verografin, bilivpetan, etc.). X-rays make for an hour every 15 min after the introduction of the entire dosage, then through 1.5-2:00 contrast of bile ducts occurs in 15-th, and gall bladder for 30-60 minutes. Maximum intensity of shadows bubble is a 1.5-2:00 after the introduction of bilignosta. After taking sick two egg yolks examines the contractile ability of the gall bladder.

**5. Laparoscopy**.

In unclear cases, diagnostic laparoscopy is shown, which gives a positive result in 95% of cases.

It allows you to evaluate the presence and severity of inflammatory changes in the gallbladder, the presence of complications hold the differential diagnosis with other acute surgical diseases of the abdominal cavity organs (for example, delete podpechenochnoe the location of the vermiform process or tumor lesions), allows for the color and appearance of the liver, as the gall bladder to hold the differential diagnosis jaundices. Greenish coloration of the liver, increased in size gallbladder indicate mechanical jaundice, cholestasis vnepechenochnom.

During laparoscopy can be made a puncture of the gallbladder and perform direct holecistoholangiografiju, holecistostomu, if necessary, take a biopsy.

**Fig. 10. Laparoscopic painting acute cholecystitis.**

**6. Special methods of investigation** of the gallbladder and bile ducts are applied when diskenezijah biliary ducts system and chronic cholecystitis: chromatic duodenal sounding (colorful PROBA Febresa) and oral, intravenous or intravenous holegrafii.

When the duodenal sounding with use of colourful samples for patient Febresa 2:00 pm to sensing give oral 0.15 g. methylene blue and during this time prohibited eating and drinking. Metilenovaja Xin entered inside, displays partial kidneys, partly by the liver. When you select from the liver it becomes colorless, but gallstones once again turns into hromogen and puzyrnuju bile in bluish-greenish color, portions of "a" and "c" are the usual yellow.

An important role is played by the laboratory and microscopic examination of the received portions of bile ("a", "b", "c").

**Standard survey**

1. Clinical examination

2. **laboratory examination**:

-General blood analysis

-Urinalysis

-Blood on the RW

-Blood Biochemistry (bilirubin, amylase, sugar, AST, ALT, etc.)

-Determination of blood group.

3.**ECG**

4. **ULTRASOUND** -score the liver; gall bladder (dimensions, wall thickness, dual circuit, the layering of wall, content);

-paravezikalnogo space (fluid infiltration);

-intra-and extrahepatic bile ducts; the pancreas; the kidneys.

5. **GASTRODUODENOSCOPY** -in the presence of jaundice (a condition of stomach and DUODENUM; score OBD, the presence and nature of bile in the DUODENUM).

6. Consult related professionals-in the presence of concomitant pathology.

**Differential diagnosis**

**Acute cholecystitis**

Recognition of acute cholecystitis in typical clinical course and timely hospitalization does not represent great difficulties.

Diagnosis becomes difficult when atypical, when there is no match between the patomorfologicheskimi changes and their clinical manifestations, as well as with complicated forms.

Diagnostic errors occur in 10-15% of cases. The most frequently erroneous diagnoses are: acute appendicitis, acute pancreatitis, perforation of gastroduodenal ulcers, acute ileus, right-sided kidney colic and pyelonephritis, right-sided nizhnedolevaja pneumonia, myocardial infarction.

Differential diagnosis of acute cholecystitis *with acute appendicitis* often presents a challenge.

It happens at lower location of the gall bladder, where it descends down to the right iliac region and inflammation It simulates acute appendicitis and, conversely, high podpechenochnom location, vermiform process inflammation clinically differs very little from acute cholecystitis. To distinguish these two diseases should take into account the details of medical patients acute cholecystitis frequently point out that the pain in the right podreberie were before, and they usually occur after reception of oily and spicy food. in some cases, patients directly reported suffering gallstone disease. Pain in acute cholecystitis are more intense with distinctive radiating in right shoulder blade and supraclavicular region.

Symptoms of intoxication and General projavleniija inflammation in acute cholecystitis are more pronounced than in acute appendicitis. By palpation of the abdomen there is an opportunity to more clearly identify the localization of pain and tension of the abdominal wall, characteristic for each of the diseases. Great importance has discovered an enlarged gall bladder. In acute appendicitis are determined by positive symptoms: appendikuljarnye Karavaevoj, Sitkovskogo Valley, Rovzinga, V.razdolskiy, Voskresensky, Bartome-Mihelsona, Obraztsova. Performed ultrasound can detect signs of acute cholecystitis and its complications. In the most sophisticated diagnostic situations diagnostic laparoscopy allows you to resolve all doubts.

*When atypical throughout its ulcers stomach or duodenal ulcer* when perforativnoe the hole turns out to be disguised, the clinical picture may resemble such acute cholecystitis.

In these cases, should take into account specific to Togo and another disease data. For its ill ulcers are not characterized by vomiting and General signs of inflammation in early disease.

Perforativnaja gastric and duodenal ulcers begins with pain in epigastria, who then pushed right ileum area. However, unlike acute cholecystitis, when its ulcer pain significantly stronger, "how to kick the knife" (""). In anamnesis in patients usually includes instructions on ulcer disease. Notes expressed weakness, nausea, stool and gas delay. The overall condition of the patient is significantly heavier than in acute cholecystitis: facial expression afraid, suffering, position in bed-on the back or on the side of the legs to the stomach (pose "the embryo"). In the first hours of determined aetiology (50-55 beats/min), then a tachycardia. Blood pressure drops to 90/40 mm Hg. The tongue dry, lined with white bloom. Retracted belly (scaphoid), anterior abdominal wall of the abdomen in breathing does not participate, sharply strained-doskoobraznyj "belly".

You should always remember about triad of symptoms: "" pain "," doskoobraznyj belly, ulcerative anamnesis (triad-Knigina-Mondor). Defines a positive symptom dramatically Shchyotkina-Bljumberga around the stomach. Perkutorno liver dullness is reduced or not defined (a symptom of Spizharnogo). The sloping ground belly taped free liquid. Abdominal x-rays determined free gas in the form of a Crescent strips under right dome diaphragm.

In the blood indicated pronounced Leukocytosis with a shift to the left lejkoformuly, high ESR. It should be remembered that through 8-10 hours of onset pain subsides, the patient noted improvement, but this is an apparent period of "well-being". The phenomenon of increasing intoxication, clinic of peritonitis progresses (language dry, swollen belly, boleznenen dramatically in all departments, tachycardia, gases do not depart, no Chair), blood leucocytosis, under fluoroscopy-Bowl Klojbera, there is no stomach gas bubble . The differential diagnosis must use ultrasound, laparoscopy.

There are many similarities in the clinical picture of acute cholecystitis and *acute pancreatitis*, so much so that the combination of these diseases. When both diseases start their patients associated with errors in diet, there was pain in epigastria, repeated vomiting. A distinctive feature of acute pancreatitis is Tinea nature of pain. By palpation the greatest pain is determined in the left hypochondrium and epigastrium in the right podreberie it less evident than in acute cholecystitis, detected an increase in gall bladder.

In acute pancreatitis is marked swelling of the upper half of the radiating Pain in your abdomen. back pain syndrome accompanied with acute dispepticheskimi disorders in the form of nausea and repeated, not facilitate, condition of patients. progressively getting worse: the skin of the face is pale grey, dry language, with greyish-Brown. The abdomen is moderately swollen bowel motility is weak or not listening, not depart- phenomena of dynamic ileus. Determined by positive symptoms, Voskresensky Kerte, Mayo-Robson, Cullen,-Mondor, Grey-Turner. Notes the shortness of breath, tachycardia, reduction in blood pressure.

For acute pancreatitis is characterized by increasing content in plasma amylase and also diastazurija. Great importance in differential diagnosis and ULTRASOUND diagnostic laparoscopy are the latest in difficult diagnostic situations is crucial. In addition, it allows for confirmation or other diagnosis treatment challenge, performing adequate operation.

Due to the fact that when cholecystitis sometimes very pronounced gastrointestinal tract disorder-repeated vomiting, flatulence, bowel paresis with delay gases and Chair-have to differential diagnosis of *acute intestinal obstruction*.

Especially in cases where the pain is localized in the right abdomen, e.g. when ileum intussusception in blind (often children). There is the emergence of pain shvatkoobraznogo character, nausea, vomiting, a delay of flatus and stool. The belly is usually swollen, but there is no abdominal palpation of its tension. In the ileocecal region is defined by maloboleznennoe, kolbasovidnoe, mobile, education-invaginat. Percussion of the abdomen-timpanit. Quite often when rectal study find mucus with blood-symptom of "raspberry jelly.

Acute intestinal obstruction in adults is usually preceded by diet, for example-receiving abundant, rough food after the previous prolonged fasting. Therefore, acute intestinal obstruction, especially stranguljacionnuju, called "disease wars". History can be abdominal operation.

Bowel obstruction can be caused by a tumor, helminthic invasion, the inversion of the intestines, uzloobrazovaniem or invaginaciej. Patients complain of sharp, cramping in the abdomen without explicit localization, nausea, vomiting repeatedly. In the final stage in the development of peritonitis, vomiting is "kalovyj". For intestinal obstruction characterized by asymmetric bloating, lack of stool and gas. Determined by positive symptoms Valya, Hose, Sklyarov (succussion), Spasokukockogo, Obukhiv hospital. When the review of abdominal radiography detected Bowl Klojbera.

The clinical picture of acute cholecystitis can simulate

*right renal colic* or inflammatory diseases of right kidney (pyelonephritis, paranefrit). Pain in the lumbar region, specific to these diseases, can irradiirovat in the right podreberie. soreness can be determined by palpation of the abdomen in the right podreberie and to the right of the navel. For acute illnesses right kidney is characterized by pain in the lumbar region on the pokolachivanii on the right, positive symptom of Pasternackogo. After examination of the patient should pay attention to the anamnesticheskim data about the presence of urological diseases, urine analysis, which allows to identify gematuriju or changes of inflammation (protein, lejkocituriju, etc.). In some cases excretory urography, useful to an ultrasound scan, hromocistoskopiju.

*Severe right-sided pneumonia and Pleurisy* characterized by cough, chest pain associated with breathing movements. In the differential diagnosis of help data auscultation and percussion of the chest. It identifies specific to pneumonia and Pleurisy easing breathing, wheezing, fatigue perkutornogo tone. Chest x-ray will reveal infiltration of lung tissue, the presence of fluid in the pleural cavity.

Differential diagnosis *with acute myocardial infarction* is based on clinical and electrocardiographic data. Unlike acute cholecystitis, acute myocardial infarct pain localized in the sternum and into the left side of the chest, violations hemodynamics. You do not have common and local signs of inflammation. Crucial changes on ECG dynamics.

**Treatment ACUTE Cholecystitis**

Treatment of patients with acute cholecystitis with first hour admission to the clinic must begin with an intensive integrated pathogenetic therapy aimed at both the underlying condition, and a possible decrease in the severity of the condition of the patient, associated with the presence of age or co-morbidity (which need to be identified during this period).

**Tactics when octpom holecictite.**

**phase 1:** SIGNS OF PERITONITIS IN TIME

America-emergency opepacija

-conservative treatment

**2 stage:** as a result of conservative treatment

CLINIC: acute cholecystitis

-ppogpeccipuet-cpochnaja (6-12 hours) opepacija

-pegpeccipuet-koncepvativnoe treatment to continue

-not pegpeccipuet during 24-48 hours-opepacija

**stage 3:** SURVEY AFTER ATTACK HEAVILY

America rocks-opepacija 3-4 week after scheduled

stones-koncepvativnoe treatment dicpancepnoe.

**Koncepvativnoe treatment of acute cholecystitis:**

**The purpose of the** -kupipovat pain ppictup.

**Tasks:**

1) creation of functional of rest (hunger 3-5 days, then table 1A, 1, 5A, poctelnyj mode).

2) reduction of bile gipeptenzii:

a) miotpopnye cpazmolitiki (papavepin, Spa, nitpoglicepin)

b) m-holinolitiki (platifillin)

3) with pain cindpoma:

a) nenapkoticheckie analgesics (Baralgin, etc.)

b) ppomedol *(papaveretum, and mopfin cannot be, because they cause spasm of the sphincter of Oddi)*

in) while the embargo:

-papanefpalnaja (A.v. Vishnevckomu) cppava 80-100 ml. 0.25% solution

-kpugloj liver cvjazki (Dr. Blagovidovu) -60-80 ml 0.25%

-vnutpivennoe introduction 100-120 ml. 0.25% novokaina solution

4) dezintokcikacionnaja therapy: polidez, etc.

5) decencibilizacija-antigictaminnye drugs (dimedrol, pipolfen)

6) bopba c infection: antibiotics (Penicillins, polucinteticheckie cefalocpopiny, aminoglikozida), metponidazol (metpogil), diokcidin

7) koppekcija BEC based 30-40 ml. on 1 kg. body weight (potepi: pvota, lihopadka, effusion)- -3 2.5 l. in 24 hours

8) liver nopmalizacija: 5-10% glucose, vitamins c, b,

glutamic acid, methionine, jeccenciale.

Holding conservative therapy in full and in the early stages of the disease usually allows you to stop inflammation in the gallbladder and eliminate the need for immediate surgical intervention, and at the big duration of disease to prepare the patient for surgery.

If pain ppictup acute cholecystitis coppovozhdaetcja mehanicheckoj jaundice, indications for operation ctanovjatcja more nactojatelnymi.

**Surgical treatment of acute cholecystitis:**

Indications for operative treatment are:

• complications of acute cholecystitis,

• the inefficiency of conservative therapy for 24-48 hours.

Time-bound execution of operational intervention (A.v. vishnevsky I. Vinogradov, B.v. Petrovski, A.a. Shalimov, v.s. Saveliev, etc.) are distinguished:

*a) Emergency (emergency) surgery*, in the first hours after admission, the patient presents with perforation, peritonitis. Preoperative preparation is carried out on the operating table. In other cases, patients appointed complex intensive therapy that is both preoperative preparation, survey, including ultrasound examination.

*b) emergency surgery* is indicated, if conservative treatment for 24-48 hours does not give effect, usually performed on 2-3 day from the date of the onset of the disease.

*in)* If conservative therapy leads to eliminate the acute process, operation better produce *in its deferred period (through the 8-14 days*), not writing out patient. After this preconditioning, and surveys.

**Analgesia.** In modern conditions the main type of anesthesia during operations over the acute cholecystitis and its complications is an endotracheal anesthesia with relaksantami. In conditions of general anaesthesia is shortened, facilitated manipulation at the General bilious channel, provides prevention of intraoperative complications. Local anaesthesia can be applied only when applying the holecistostomy.

**Hipupgicheckie doctupy**:

To access the bilious pozyrju and extrahepatic bilious channels invited a lot of abdominal incisions but the greatest distribution have received cuts Kocher, Fedorova and verhnesredinnaja laparotomy *(fig. 11).* . Optimal are cuts in the right podreberie on Koheru and Fedorov. They provide good access to the neck of the gallbladder and trunk bilious channels, as well as convenient for surgery on the big duodenal sosochke is rather live.

**Figure. 11. 1-section of Koheru, 2-laparotomy, verhnesredinnaja**

**3-section of Fedorov**

**Intpaopepacionnaja tactics when cholecystitis:**

**1 stage** : THE GENERAL CONDITION OF THE PATIENT

-udovletvopitelnoe, cpednej tjazhecti- *holecictjektomija*

-heavy- *holecictoctomija*

**2 stage:** mandatory intpaopepacionaja pevizija extrahepatic bile ppotokov to identify kocvennyh ppiznakov konkpementov:

1) ocmotp-diametp choledochitis in nopme up to 10 mm.

2) palpation

3) ULTRASOUND

4) intpaopepacionnaja holangiogpafija

**stage 3:** If you have konkpementov SHOWS and removing stones CHOLEDOCHOTOMY, pus, PuTTY, pecka

**stage 4:** mandatory kontpol completeness konkpementov removal:

1) zondipovanie buzhami

2) fibpoholedohockopija

3) povtopnaja intpaopepacionnaja holangiogpafija, ultrasound

**step 5:** decision voppoca on the dpenipovanii exeresis:

-octpyj America purulent cholangitis-only **outdoor dpenipovanie**

-No octpogo purulent cholangitis:

        holedoh not pacshipen, but there is a single stone- **outdoor dpenipovanie**

        holedoh pacshipen:

and single stones neckolko) **napuzhnoe dpenipovanie**

b) "vkolochennyj" stone in OBD, OBD ctenoz coputctvujushhij pankpeatit- **papillocfinktepotomija (PST).**

**Types of interventions:**

**1. Laparotomy and cholecystectomy (traditional cholecystectomy-"gold standard").**

Is performed in the following cases:

and) absence of laparoscopic technique and trained professionals

b) conversion during laparoscopic operations

in) complications acute cholecystitis (peritonitis, choledocholithiasis, obstructive jaundice, cholangitis, gallstone obstruction, fistula, intestinal cystic-Mirizzi syndrome).

**2. Laparoscopic cholecystectomy**.

**3. Cholecystectomy of mini access**

In 80-85% cannot perform laparoscopic holecistjektomiju. First laparoscopic holecistjektomiju complied with *Phillip Mouret (Lyon)* in 1988 year.

**Figure. 12. Diagram of laparoscopic and open (laparotomnoj) cholecystectomy**

Indications for conversion can be:

and infiltration in the area) the existence of hepatic-gastrointestinal ligament and triangle Calo, not allowing to differentiate cystic duct and artery puzyrnuju

b) c bleeding that cannot be stopped by laparoscopy

in) expressed stiff adhesive seams in the upper floor of the abdominal cavity.

**Cholecystectomy**.

Removal of the gallbladder is the basic operation for acute cholecystitis, leading to full recovery of the patient. Apply, as it is known, two ways of cholecystectomy is from the neck and from the bottom *(fig. 13, 14).*

**Figure. 13. Cholecystectomy way "from the bottom"**

**Figure. 14. Cholecystectomy way "from the neck»**

Advantages has a way of removing from necks. With this method, the allocation of the gallbladder from the liver bed start after crossing and gallbladder duct ligation and artery puzyrnoj. Apart from the gall bladder bile ducts is a measure preventing the migration of stones from the bladder into the ducts, and preliminary ligation arteries provides bloodless removal of the bladder. Remove the gallbladder from the bottom of the resort when there is infiltration in the area of the neck of the bladder and the liver the duodenum. The selection of the gallbladder from the bottom allows orienting the location of gallbladder duct and artery and install topographic relationship them to elements of the hepatic-gastrointestinal ligament.

Processing of HM's stump the duct length should not exceed 1 cm, produced by not immediately after removal of the bladder, and once held intraoperative c cholangiogram and sensing the bile ducts, using for this purpose a stump the duct. Dress her need to double, kapronom, and 1 time with proshivaniem.

Liver gallbladder bed superior hemostasis achieved previously catgut suture it by electrocautery bleeding blood vessels. Bed bladder need deceit thus well adapted to the edges of the entire liver wound surface and not formed cavity.

**Holecistostomija.**

Despite the palliative nature of the operation, she now has lost its practical significance. How is miniinvasive, operation holecistostomija applies the most heavy and weakened patients, where the degree of operational risk is particularly high.

**Operations on extrahepatic biliary ducts**.

The combination of acute cholecystitis with lesions of the extrahepatic bile ducts requires increased surgical intervention, including the opening of the common bile duct.

Currently, indications for closure are clearly defined, and they are: 1) mechanical jaundice on admission and at the time of the operation; 2) cholangitis; 3) expansion of the extrahepatic bile ducts; 4) bile duct stones, defined by palpation, holangiogrammah, when ULTRASOUND; 5) Division terminalnogol stricture of the common bile duct, confirmed the results of intaroperacionnoj cholangiography and sensing major duodenal papilla.

Dissection of the common bile duct produced in supraduodenalnom Division, it is closer to the duodenum. Advanced bilious channel produced as longitudinal and transverse incisions.

In the presence of stones in the biliary ducts, you must remove them and wash the ducts of the solution novokaina, and then carefully make an audit of the Terminal part of the common bile duct, the major duodenal papilla, where most often the stones visible. To detect stones in a large sosochke is rather live viral (disadvantaged, flotirujushhih) should mobilize the duodenum on Koheru and palpate papilla on the probe. To exclude the major duodenal papilla stenosis check its permeability probe diameter 3-4 mm. If there is no stenosis probe passes the lumen of the gut and easily palpated through her wall.

An important step is choosing the operation completion method choledochotomy. There are various ways to end closure: 1) wound closure bile duct tightly; 2) external drainage duct; 3) establishment of bile and intestinal soustja by formation of holedohoduodenoanastomoza or transduodenalnoj papillosfinkterotomii.

Each choledochotomy, undertaken with cholecystitis with diagnostic or therapeutic purposes, must be terminated with external drainage if it is free. External drainage duct is made more often gall shared in the following ways: 1) by Abbe-polyethylene catheter placed through a stump gallbladder duct; 2) at Keru-t-shaped LaTeX drainage; 3) by a. Vishnevsky-drainage-siphon. To the choice of method of drainage are suitable, taking into account the pathology in the ducts and the nature of the surgery *(fig. 15).*

A B C

**Figure. 15. options for external drainage of the common bile duct and - drainage vishnevsky, b -drenazh on Keru**

All operations on biliary tract ends mandatory venting of podpechenochnogo space. Drainage changes, usually on day 4, removed individually. Drainage from choledochitis retrieves no sooner 16-18 the day after the compulsory fistuloholangiografii and step-by-step training cord.

**The postoperative period.** Keeping patients in the postoperative period must be strictly individualized. It is necessary to continue intensive therapy aimed at correcting the disturbed metabolic processes, and to take measures for prevention of postoperative complications.

Foundation treatment of the postoperative period is, intravenous infusion therapy, including introduction of salt and protein solutions 5 and 10% solutions of glucose, b vitamins and vitamin c to improve the rheological State of blood and Microcirculation in vital organs (liver, kidney) designate introduction reopoligliukina (400 ml.) and polideza. With the trend to oliguria, which happens to be associated with kidney failure, it is necessary to stimulate diuresis introduction laziksa. In order to improve the function of the liver is injected sirepar or essentiale.

Infusion therapy in a volume of 2.5 l -3. the liquid should be held during 3-4 days, and as the condition of the patient and the disappearance of intoxication volume entered parenteral liquid reduces.

Drink sick are permitted on 3-4 day (when you see peristalsis). Postoperative (broth, jelly) is appointed for 4 day up to 200 ml., 1-and table-on 5 day, then as patient diet expands to 1 and 5 of the table.

Prevention of nagnoitelnyh processes in the abdominal cavity and the operating wound is conducted both during the operation and the postoperative period. The most important activities of this plan are: washing podpechenochnogo space solutions of antiseptic (chlorhexidine) and a broad-spectrum antibiotics (cephalosporins, gold price hike give impulse, kanamycin, gentamicin, etc.).

In the elderly, take measures for the prevention of venous trombozov and thromboembolic complications, which are often causes of deaths. To this end, it is important from the very first days after surgery to strengthen patient, conduct therapeutic exercises, lower limbs elastic bandage bandages, recommend their exalted position. You must assign antikoagulyantnuu therapy (heparin), but preference should be given to molecular geparinam (clexane, fraksiparin, "FRAGMIN", etc.), under the supervision of thrombelastogram INR, APTT.

Sit ill allow the second-third, to stand up is on the fourth-fifth day. Remove stitches after about 10-12 days. Rubber-gauze graduate (Penrose drain) of podpechenochnogo space is tightened to 6-7, and removed on day 8.

The drainage tube from under the liver area (like Penrose drain is to lodge a remote gallbladder) retrieved on 4-5 day. Term extract sick individual, on average-18-21 day.

Lethality varies widely depending on the timing of the operation, the age of the patients, Comorbidities and complications on average it ranges from 4 to 10% in elderly-10-26%.

**Chronic cholecystitis**

Chronic cholecystitis-chronic inflammation of the gallbladder, usually is fatal, acute cholecystitis, but can proceed from the outset as a chronic process.

***Etiopathogenesis.*** Causes, conditions of infection of bile, pathways of pathogenic organisms in a bilious bubble are the same as with the development of acute cholecystitis.

Important role in the development of chronic cholecystitis play violations of motor-evacuation function of gallbladder, leading to stagnation of bile and slow down its evacuation (a congenital breach of buildings of the gallbladder, reducing its strength, physical inactivity). Given the leading role of the CENTRAL NERVOUS SYSTEM in the regulation of contractile function of the gallbladder and bile ducts, any neuroses and stressful situations can lead to the development of dysfunctional disorders of the biliary system and predispose the occurrence and chronicity inflammation in the gallbladder.

In addition, the development of chronic cholecystitis: contribute to the omission of those or other abdominal organs, pregnancy (factors predisposing to mechanical stagnation of bile); violations of the diet (overeating, obesity, regular consumption of spicy, greasy foods, alcoholism); intestinal parasites (Giardia, amoebas, ascarids, opistorhes); cholelithiasis, migrated earlier hepatitis and dysentery.

If chronic inflammation in the gallbladder develops against the backdrop of zhjolchno stone disease (GSD), chronic acalculous cholecystitis treated as physico-chemical stage of development is a process and requires the appropriate the therapeutic approach in order to prevent the development of CHOLELITHIASIS. Particular care should be observed for patients with holestaticheskimi forms of psoriasis biliary tract (congested gall bladder in conjunction with spasm of the sphincter of Oddi).

Universally accepted classification of chronic cholecystitis No. In clinical practice, one of the most convenient is the ***classification of chronic cholecystitis,*** proposed by A.m. Nogallerom:

1. For severity: mild, moderate, severe.

2. the stages of the disease: aggravation, exacerbation, beset remission (and constant).

3. the presence of complications: not complicated, complicated.

4. the nature of currents: recurrent, monotonous, intermittently.

*With mild* pain syndrome expressed not sharply, aggravation there are 1-2 times a year, duration of the aggravation of not more than 2-3 weeks. Pain localized in the right podreberie, 40-90 occur minutes after mistakes in diet (eating spicy, greasy, fried, abundant food), for up to 30 minutes are often on their own. Often pain arise or are amplified for long term stays in a sitting position (behind the wheel of the car, behind the computer, etc.). Pain can irradiirovat up, right shoulder and neck, right shoulder, different monotonous. The mechanism of pain increasingly spastic type of Biliary colic have. Despepsiceskie phenomenon exist. Liver function is usually not affected.

In chronic cholecystitis *moderate* is characterized by persistent pain syndrome. The pain expressed, with typical irradiation, associated with the slightest error in diet, small physical and emotional surge. Often concerned about belching, heartburn, metallic taste in the mouth, may be nausea, vomiting bile, food at an altitude of pain.

Sick note intestinal syndrome dyspepsia (flatulence, alternating constipation and diarrhea). Often decreased performance, irritability, insomnia. Aggravation are more frequently (5-6 times per year), long. On examination, the patient noted moderate muscle strain in the right podreberie, moderate symptoms Ortner, Zaharin, Murphy.

*When severe* dramatically expressed pain syndrome and despepsiceskie phenomenon, there are frequent (1-2 times a month and more often) and prolonged Biliary colic. Drug therapy ineffective. frequently develop complications (periholetsistit, holangit, perforation hydrops of the gallbladder, bladder, empiema).

In acute cholecystitis increase pain and dyspepsia phenomena show signs of inflammation (fever, leukocytosis with left shift, acceleration of ERYTHROCYTE SEDIMENTATION RATE), the level of direct (bound) bilirubin.

When examining a patient in times of increasing its passive consciousness clear. Normal skin colour. The patient often increased supply. Swollen belly evenly or predominantly in the upper half. The liver increases and becomes painful by palpation, is determined by the soreness at the gallbladder projection. Muscular resistance abdominal wall in the right podreberie moderate. Identifies positive symptoms: Ortner, Murphy, Kera, Zaharin, Lida (reduced resistance for mild abdominal palpation in the right podreberie compared with left podreberem).

In the period of remission are missing signs of inflammation, pain and dyspeptic syndromes disappear completely, often somewhat diminished. Symptoms of Ortner, Mussy, Murphy, negative. The liver is not increased, the edge is smooth, painless. The gall bladder is not palpated.

***To complications*** chronic cholecystitis are: development of chronic inflammation of the bile ducts (cholangitis), perforation of the wall of the gallbladder (abscesses), purulent inflammation of the bladder (empyema), edema, obstructive jaundice, periholetsistit, Jet hepatitis.

***When diagnosing*** chronic cholecystitis identify factors contributing to its emergence is the stagnation of bile and violation of bladder motility, congenital and acquired defects of organs, leading to difficulty of circulation of bile, gipodinamichnyj way of life characteristic of food habits (addicted to spicy, spicy food, the heaviest stroke, alcohol). Cholecystitis can be a complication of parasitic diseases of the bowel and liver.

When scanning the patient and palpation of the anterior abdominal wall to identify characteristics and localization of pain. define the characteristic inflammation of the gall bladder symptoms: Murphy, Mussy, Shoffara, Zaharin, Kera, etc.

When the laboratory study of blood in times of increasing signs of nonspecific inflammation (increased ERYTHROCYTE SEDIMENTATION RATE, leukocytosis). Biochemical blood analysis reveals increase in liver enzymes (ALT, AST, alkaline phosphatase).

The most informative in the diagnosis of chronic cholecystitis methods of instrumental Diagnostics: ultrasound examination of abdominal cavity organs, holetsistografia, holangiografia, duodenal sounding. When the gallbladder ultrasound determine the size, wall thickness, possible deformation and the presence of stones in the bladder. There are also spikes, advanced bile duct of the liver, impaired bladder motility.

When the duodenal sounding note violation of gallbladder motility, take an analysis of bile. When planting bile may determine the pathogen testing culture sensitivity to antibiotics for the optimal choice of antibacterial means.

***Treatment of chronic cholecystitis***

Nekalkuleznogo treatment of chronic cholecystitis are almost always conservative. In times of increasing it is aimed at removing the acute symptoms, sanitation of the hearth of bacterial infection using broad-spectrum antibiotics (usually group cephalosporin), detoxification of the body (infusion solutions of glucose, sodium chloride), restoring digestive function (enzyme preparations-Creon, panzinorm, etc.), removing the spasm smooth muscles.

To eliminate bile used drugs that contribute to increasing peristalsis of the biliary tract (olive oil, Sea buckthorn, magnesia). Choleretic (drugs that increase bile secretion) used with caution so as not to cause increased pain and aggravation of stagnation.

During the period of exacerbation of a chronic neoslozhnjonnogo cholecystitis used decoctions of herbs (Peppermint, Valerian, dandelion, camomile, calendula).

After weakening symptoms exacerbation and remission of the disease in transition need to diet, magnesium tjubazhi, xylitol or sorbite. Fitoterapeija is hiring broths tansy, Buckthorn, ALTHEA, yarrow. Viewed sanatorium-and-spa treatment in balneological resorts.

In chronic kalkuljoznom cholecystitis shows surgical removal of an inflamed gallbladder-source education concrements. In the arsenal of a surgeon today, there are three main technologies:

-traditional cholecystectomy

-laparoscopic cholecystectomy (LHJe)

-cholecystectomy of mini Access Kit Tools "Assistant" *(fig. 16.).*

**A B C**

**Figure. 16. Cholecystectomy of mini access.**

**And-operating wounds (see 3-4.)**

**B-phase of the operation in HAE-laparotomnogo access.**

Intraoperative audit methods extrahepatic biliary tracts, including intraoperacionnuju holangiografiju, intra-operative ultrasonography, holedohotomiju with holedohoskopiej.

For the weak and elderly patients-holecistostomija (laparotomnaja, from mini-percutaneous laporoskopa under control) to generate an alternative route of outflow of bile.

In chronic calculous cholecystitis in case of contraindications to intervention you can try nonsurgical method of crushing stones by using extracorporeal shock-wave lithotripsy, however it is worth remembering that the the destruction of the stones does not always lead to healing and quite often they are regenerating.

There are methods of drug destruction of stones using drugs ursodezoksiholievoj and salts henodezoksiholievoj acids (henofalk, henohol, rovahol, lipofalk, etc.), but this treatment takes a very long time (2 years) and also does not lead to complete recovery and does not guarantee that the stones do not emerge over time again.

*Traditional cholecystectomy* (TAE) in combination with sufficient access laparotomnym, the most adequate surgical intervention (the "**gold standard**").

Disadvantages of this method.

-operating trauma leading to bowel paresis, violations of respiratory function, limit physical activity of the patient

-a significant injury of the anterior abdominal wall structures (in some variations of access

-violation of blood supply and innervation of the muscles of the anterior abdominal wall, a large number of early and late trauma complications (particularly postoperative ventral hernias)

-significant cosmetic defect

-longest period poslenarkoznoj and postoperative rehabilitation and disability.

*Videolaparoscopic cholecystectomy* (LHJe)-modern-art, low traumatic method of surgical intervention, through which runs about 85-90% of operations.

However, LHJe has some limitations.

Contraindications:

-cardio-pulmonary violations

-nekorrigiruemye human blood clotting

-diffuse peritonitis

-inflammatory changes of the anterior abdominal wall

-the later stages of pregnancy (p-III trimester)

-Obesity IV degree

-acute cholecystitis after 48 h. from the onset of the disease

-obstructive jaundice

-surgeries of the abdominal cavity on the top floor.

During the execution of LHJe, you might need to move to traditional rapid access (conversion). These operations are most often used in cases of detection of inflammatory infiltrate, dense adhesions, internal fistula, the uncertainty of the location of anatomical structures, impossibility of performance of holedoholitotomii intraoperative complications (damage to blood vessels of the abdominal wall, bleeding from the artery puzyrnoj, hollow organ perforation, damage overall liver or common bile duct etc.), which is not possible during laparoscopic surgery.

The main complications are considered LHJe of bleeding, trauma of hollow organs and retroperitoneal space vessels, injury of bile ducts.

The method of choice in patients with chronic cholecystitis is *cholecystectomy of mini access laparotomnogo with elements of "open" laparoscopy OLHJe.*

Using the Toolbox "mini-Assistant" you can aspect the abdominal wall with a length of 3-5 cm. get in podpechenochnom space zone operational steps required to perform a cholecystectomy and interventions on the biliary ducts.

Indications for OLHJe:

-holecistolitiaz, choledocholithiasis, unauthorized endoscopically

-technical difficulties in LHJe.

Contraindications to OLHJe:

-the need to audit the abdominal organs

-diffuse peritonitis.

Advantages of OLHJe access.

-minimal trauma to the anterior abdominal wall

-adequate access to bilious bubble, common hepatic and bilious channels

-ability to perform intervention in patients undergoing abdominal surgery previously,

-lack of pneumoperitoneum

-relatively low cost equipment

-direct visual control and use of traditional techniques of surgical dissection of tissues allow relatively safe to manipulate the conditions expressed infiltration

-separating operating fields from free abdominal cavity allows you to completely empty the gallbladder and not be afraid of its perforation during the operation. Complete emptying of the bladder and remove large stones from his neck greatly facilitates access to triangle Calo

-perhaps allocation of the gallbladder from the bottom

-It is possible to carry out an audit of intraoperative extrahepatic bile ducts practically in all clinical forms is cholecystitis.

About 60% of patients with cholecystitis may be operated on mini-laparotomnym.

 *Holecistostomija.* This operation should be considered a standard surgical treatment of patients with cholecystitis, which run the risk of cholecystectomy excessively large.

Pathogenetic substantiation of expediency holecistostomii run is the withdrawal of hypertension in the gall bladder and bile moves infected outwards, which eliminates the violation of blood flow in his wall, thus preventing further progression of destructive changes. Decompression of the gall bladder is a necessary condition for the inflammatory process in the gall bladder.

Holecistostomija can be done in three ways: by chrezkozhnogo gall bladder drainage under ultrasound control, using laparoscopy and open laparotomiej.

***Nutrition***

All patients with chronic cholecystitis prescribed a special diet and must be strict adherence to a particular diet. In chronic cholecystitis patients assigned diet (table 5 in remission and table 5-and an exacerbation of the disease).

Meals are needed every 3-4 hours in small portions (float food), with restriction of certain products: fatty, fried, spicy, spicy dishes, sodas, alcohol.

Forbidden to eat egg yolks, raw vegetables, from fancy pastry products, oil and creamy creams, nuts, ice cream. As the recommended freshly prepared steamed or boiled foods in the form of heat. Fruits and vegetables are allowed sick period without exacerbation: Dried apricots, carrots, watermelon and cantaloupe, raisins, prunes. These products normalizes motility of the gallbladder and relieve constipation.

Violation of the principles of therapeutic feeding patients leads to the development and progression of disease exacerbation of the destructive processes in the wall of the gallbladder.

***Prevention***

Primary prevention cholecystitis is keeping a healthy lifestyle, an exception in the admission of alcohol, limiting unhealthy food habits (overeating, addicted to spicy and oily foods), a physically active life. In the presence of congenital anomalies of the internal organs is the timely identification and correction of stagnant phenomena in the gall bladder. Timely treatment of gallstones and parasitic infections of the bowel and liver.

For the prevention of acute patients chronic cholecystitis diet should be followed and the principles of fractional power, avoid inactivity, stress and hypothermia, heavy physical exertion. Patients chronic cholecystitis in outpatients must stand and be screened twice a year. IM showing regular sanatorium-and-spa treatment.

**CONCLUSION**

Acute and chronic cholecystitis are often clinical manifestations zhjolchnokamennoj disease, remain frequent acute surgical pathology of abdominal cavity organs.

Despite the obvious progress in the diagnosis and treatment of complications of acute and chronic cholecystitis brought many experiences surgeons especially urgent service. Therefore, knowledge of the etiopathogenesis, clinical, differential diagnosis and possibilities of modern surgery in the selection of an adequate method of treatment is an important component in the complex education and training students.

We hope that this tutorial will be useful not only to students of 4-th, but senior courses, both in the preparations for the practical exercises, and in subsequent practice.

**Inpolls for self-study**

1. Give a definition of the term "cholecystitis".

2. Etiology of acute and chronic cholecystitis.

3. To lassifikacija cholecystitis.

4. To linicheskaja painting acute cholecystitis.

5. To linicheskaja painting chronic cholecystitis.

6. Differential diagnosis of acute cholecystitis with:

(a)) acute appendicitis

(b)) its ulcer of stomach and duodenum

(c)) acute pancreatitis

(d)) acute ileus.

7. List the basic techniques paraklinichesk wow about bsledovani I applied in diagnosis of cholecystitis.

8. Basic principles of conservative treatment of acute cholecystitis.

9. Indications for surgical treatment of acute cholecystitis.

10. Differential diagnosis chronic cholecystitis.

11. Basic principles of conservative treatment of chronic cholecystitis.

12. Complications of chronic cholecystitis.

13. Indications for operative treatment of chronic cholecystitis.

14. Modern methods of surgical treatment of acute and chronic cholecystitis.

15. What are the methods of the drainage of the exeresis.

16. Name n osleoperacionnye complications of acute cholecystitis

**TEST TASKS**

Select one or more correct answers.

**1.** the most common cause of obstructive jaundice is:

1) tumor of pancreas head

2) choledocholithiasis

3) biliary tract stricture

4) biliary tract tumor

5) constrictive papillit

**2.** the most optimal and least aggressive method of research to establish the nature of jaundice in the patient with obstructive jaundice is:

1) oral holetsistografia

2) intravenous holetsistografia

3) ULTRASOUND

4) Retrograde Cholangiopancreatography

5) chrezkozhno-chrezpechjonochnaja c cholangiogram

**3.** acute calculous cholecystitis disconnected obstruction is located at:

1) intrahepatic biliary passages

2) body of gallbladder

3) at the level of the exeresis

4) at the level of hepatic duct

5) at the level of the cervical or gallbladder duct

**4.** DEVELOPMENT of ACUTE CHOLECYSTITIS is enhanced by:

1) stones in the gallbladder

2) gallbladder infection

3) vkolochennyj stone bladder neck

4) chronic gastritis

5) chronic pancreatitis

**5.** Drainage choledochitis drainage in the form of a "t", a short branch which is in holedohe and length branch outward displays, is the name of:

1) Dr. Lannie

2) Kera

3) Quetelet

4) Walker

5) Duval

**6.** the main sign of differences between obstructive jaundice caused by stone, from jaundice cancerous nature is:

1) jaundice expressed against the background of pain

2) aholichnyj stools and dark urine

3) the appearance of jaundice after Biliary colic

4) itching on the background of jaundice

5) peremezhajushhaja temperature

**7.** for acute cholecystitis complicated by local peritonitis is characterized by the following clinical signs:

1) Murphy

2) Kerte

3) Mendel-V.razdolskiy

4) Shchetkina-Bljumberga

5) Ortner

**8.** Which of the following characteristics apply to laparoscopic holecist-jektomii?

1) minimal postoperative pain

2) postoperative hospitalization-9-10 days

3) cosmetic effect scars

4) recovery through 6 weeks

5) recovery through 3 weeks

**9.** in the case of Jaundice holedoholitiaza harakterizutsja:

1) after the advent of itching

2) disappears quickly or slowly simultaneously with

kupirovaniem pain

3) combined with aholichnym Chair

4) appears after Biliary colic

5) combined with temperature

**10.** acute calculous cholecystitis accompanied with pain:

1) the disappearance of liver dullness

2) allergic shock

3) inflammatory syndrome

4) restriction of breathing movements

5) subikterichnostju skler

**11.** in acute calculous cholecystitis pain:

1) have the character of hepatic colic

2) have Herpes nature

3) cease after antispasmodic agents

4) appear after jaundice

**12.** the triad of clinical symptoms (jaundice, fever, pain in the right podreberie) characteristic:

1) probodnoj ulcer

2) cirrhosis of the liver

3) cholangitis

4) holedoholitiaza

5) acute pancreatitis

**13.** an enlarged gall bladder protruding from under the rib edge, and the presence of jaundice testifies:

1) cholecystolithiasis

2) tumor papily Vater

3) liver cancer

4) gall bladder cancer

5) pancreatic head cancer

**14.** What diagnosis it is assumed with a combination of the following clinical signs: jaundice, fever, chills, pain in the right podreberie, dark urine, aholichnyj Chair?

1) chronic calculous cholecystitis

2) acute calculous cholecystitis

3) pancreatic head cancer

4) choledocholithiasis

5) duodenal ulcer penetration in lig. hepatoduodenalis

**15.** Select the clinical signs characteristic of cholangitis:

1) jaundice

2) pain in the right hypochondrium

3) fever, chills

4) diarrhea

5) abdominal muscle tension

**STANDARDS of the RESPONSES to the test tasks**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **NO.** | Response | **NO.** | Response | **NO.** | Response |
| **1** | 2 | **6** | 3 | **11** | 1.3 |
| **2** | 3 | **7** | 1, 3, 4, 5 | **12** | 3.4 |
| **3** | 5 | **8** | 1, 3, 5 | **13** | 1, 2, 5 |
| **4** | 1, 2, 3 | **9** | 3, 4, 5 | **14** | 3.4 |
| **5** | 2 | **10** | 3, 4, 5 | **15** | 1, 2, 3  |

**Situational tasks**

**Objective No. 1**

52 years of patient complains of pain with paroxysmal character that appears periodically in the right podreberie radiating in right shoulder and shoulder blade, with fever to 39-39, 50c, torrential potami during the last year. Over the last month such attacks have become more frequent and have started to appear every 2-3 days. Sometimes the attacks have been accompanied by jaundice, which quickly disappeared, and then appeared again. General condition remained good. Noted some weakness. Belly normal shape, soft. The liver is increased. The gall bladder is not palpated. Pain in the area epigastralna by palpation. Leukocytes in the blood 9.2 × 109/l, ESR 38 mm/hour. When ULTRASONOGRAPHY gall bladder calculus contains the normal size, a dilatation intrahepatic ducts, holedoh 1.2 cm.

1) What diagnosis you put?

2) what is the tactic of additional examination and treatment?

**Task No. 2**

Ill 69 years, fat woman suffers cholelithiasis, chronic calculous cholecystitis, severe diabetes, myocardial insufficiency of blood circulation IIA degree. Attacks of cholecystitis ill come 3-4 times a year. Two days ago after errors in the diet began another pain attack radiating pain in the right shoulder and shoulder blade, nausea, repeated vomiting, not relief. When entering a State of moderate severity, defined by soreness in the right podreberie, positive symptoms Ortner, Kera, frenikus-symptom. ULTRASOUND EXAMINATION for admission — gallbladder 146 × 72 mm, wall-8мм, in the area of the bladder neck fixed konkrement 41 × 32 mm, holedoh mm. Started by conservative therapy. Dynamic ULTRASOUND later day ultrasound former semiotics.

1) What diagnosis the patient, which confirms the diagnosis?

2) principles of conservative therapy?

3) tactics.

**Task No. 3**

65 years of patient suffering bouts of cholelithiasis, another fit kupirovalsja finally. Within 2 months the patient continued to celebrate the dull aching pain in the right podreberie, which bothered her constantly. By palpation in the right podreberie defined size plotnojelasticheskoe painless education with a smooth surface. Symptoms of irritation of the peritoneum is not. All this time the body temperature remained normal, leucocytosis, shift leukocyte formula no. When the gall bladder ultrasound 123 × 63 mm, 4 mm, wall in the area of cervical fixed konkrement 23 × 18 mm, holedoh mm.

1) your diagnosis and treatment?

**Task No. 4**

46 years of patient after taking fatty foods first appeared in the right podreberie severe pain radiating to the right shoulder and right shoulder. Body temperature increased to 37.80c was repeated vomiting. By palpation of the right hypochondrium determined bottom painful gallbladder, positive symptoms Ortner, Kera. Symptom Shchyotkina-negative Bljumberga. Upon receipt of completed USI-gallbladder 115 × 63 mm, 3 mm, in its lumen defined concrements. After the appointment of conservative therapy has improved, the temperature dropped to normal, pain diminished a day after receipt of tuataras stopped palpirovatsja, remained a pain at the point of the gall bladder. Dynamic ULTRASOUND-gallbladder 82 × 59 mm, 3 mm, holedoh mm. However, after a short pain attack appeared patient skin ikterichnost, cium indicators began to grow.

1) your diagnosis?

2) what should be the diagnostic and therapeutic algorithm tactics?

**Task No. 5**

Sick 42 years for the third time in the past year brought to the clinic with the attack of acute cholecystitis. The last time the pain in the right podreberie appeared two days ago for medical treatment, did not self-medicate. For 3:00 until stomach pain spilled nature, become more on the right flank, notes to hyperthermia 390c. Came with irritation of the peritoneum, which gradually builds up, pronounced Leukocytosis with shift nejtrofilnoj the formula to the left.

1) what is the complication of acute cholecystitis u sick?

2) what additional methods of instrumental Diagnostics, you must apply for verification of diagnosis?

3) what is the therapeutic tactics?

**Task No. 6**

Sick 48 years came with the clinical picture and the phenomena of acute cholecystitis local peritonitis. The patient is assigned to conservative treatment. After six hours of income appeared severe abdominal pain, cold sweats, the pulse is 120 BPM. in minutes, dramatically intense and painful stomach in all departments, positive symptom Shchyotkina-Bljumberga in all departments.

What complication developed patient? What tactics?

**Task No. 7**

49 years old patient, urgently operated on acute flegmonoznogo cholecystitis and obstructive jaundice, bile duct extension detected operation up to 13 mm clearance from it through a stump molar flow goes turbid bile with flakes of fibrin and bilious sand. The intraoperative cholangiography marked good passability Terminal exeresis.

Any pathological process in the extrahepatic bile ducts, and that should be taken in connection with his presence?

**Task No. 8**

57 years old patient during an operation on acute flegmonoznogo cholecystitis revealed a dense inflammatory infiltrate in the cervical area of the gall bladder and gepatoduodenalnoj ligament, in which elements of the ligaments are not differentiated. How better to make holecistjektomiju?

**Task No. 9**

The patient had 68 years 3 days ago was an attack of sharp pains in the right podreberie, who quickly yourself kupirovalsja. Through 10:00 the pain resurfaced in the right podreberie, adopting a permanent and progressive in nature. Was repeated vomiting bile. The temperature had risen to 380c. previously, ULTRASOUND EXAMINATION identified concrements in the gall bladder. Moderate patient's condition, pulse 98 BPM. in mines. Language suhovat, lined with white bloom. The abdomen is moderately intense and painful in the right podreberie, where palpated bottom gall bladder. Symptoms of Ortner-Grekova and Mussy are positive symptom Shchyotkina-Bljumberga is positive only in the right podreberie.

Your diagnosis and therapeutic tactics?

**Task No. 10**

Sick 48 years she entered the clinic on the third day of the illness with complaints of pain in the right hypochondrium, nausea, repeated vomiting bile, increase temperature to 380c. Suffers bronchial asthma with respiratory failure. The State of the ailing heavy number of breaths-30 per minute, pulse 110 BPM. in mines. The tongue dry, lined with white bloom. Abdomen tense and sharply painful in the right podreberie, where palpated bottom gall bladder. Ibid. defined symptom Shchyotkina-Bljumberga, positive symptoms Ortner-Grekova, Mussy and Murphy. Leucocytosis-18 × 109/l. Against the backdrop of conservative therapy for 12:00 patient condition has not improved, fever, leukocytosis increased.

About what diseases it is necessary to operate the sick?

**Task No. 11**

During the operation on acute flegmonoznogo cholecystitis surgeon noted that bile duct width-15 mm, it shall be determined by palpation of ureteral stones 2. The intraoperative cholangiography marked a good reset contrast solution into duodenum. After gallbladder removal from stump gallbladder duct out muddy bile with flakes of fibrin.

How should we assess the changes in holedohe and that therefore the surgeon should take?

**Task No. 12**

Ill received at the clinic with acute cholecystitis in the next 3 days appeared shivers, the temperature had risen to 380c, became increasing jaundice. Abdominal pain is not increased, the phenomena of peritonitis is not rose. Bilirubin blood-80 µm/l, leukocytes blood-18 × 109/l.

What complications can think? What tactics?

**Task No.** 13

Ill received at the clinic with a picture of acute calculouse colecystitis, 3-th day after the anti-inflammatory therapy emerged shivering, fever up to 38° c, skin and sclera stained yellow. Abdominal pain is not increased.

What complications cholecystitis should think?

**Task No. 14**

49 years of patient during surgery for flegmonoznogo cholecystitis and obstructive jaundice, discovered the expansion of the common bile duct to 13 mm, from stump gallbladder duct stands out muddy bile with flakes of fibrin. Operating holangiogramme in the distal common bile duct visible defect filling the oval shape and the narrowing of the duct. Contrast solution into the duodenum.

Specify the clinical diagnosis.

**Task No. 15**

Patient 24 years on 3-th day after laparoscopic cholecystectomy appeared biased yellow skin and sclera. According to ultrasound, performed before the operation, pathological changes in the gall duct.

What kind of postoperative complications, you can think of?

**Standards to answer situational tasks**

**Objective No. 1**

1) there is a complication of cholelithiasis-cholangitis.

2) to perform endoscopic retrograde pankreatoholan-giografii (JeRPHG) and endoscopic papillosfinkterotomii (ENDOSCOPIC PAPILLOSPHINCTEROTOMY) to address the causes of cholangitis-holedoholitiaza or/and stenosis of the big duodenal nipple (OBD), after performing cholecystectomy.

**Task No. 2**

1) Acute calculous cholecystitis obturazionny, as evidenced by clinical and ULTRASOUND data.

2) during 24-48 hours after receipt is held conservative therapy (antibiotics, antispasmodics, infusion therapy).

3) ineffectiveness of conservative therapy for 24-48 hours is indication for urgent surgery, given the accompanying pathology, you need to perform minimally invasive surgery (holecistostomija under ultrasound control, open holecistostomija under intravenous anesthesia).

**Task No. 3**

1) holds a complication-hydrops of the gallbladder, shows an operation-cholecystectomy.

**Task No. 4**

1) Acute calculous cholecystitis, mechanical jaundice.

2) given that the attack of acute cholecystitis kupirovalsja (clinical picture and data dynamic ULTRASOUND) but ill appeared mechanical jaundice (dilatation of the bile duct by ultrasound), you must perform the ENDOSCOPIC PAPILLOSPHINCTEROTOMY, JeRPHG, then holecistjektomiju.

**Task No. 5**

1) holds a complication of acute cholecystitis is-biliary peritonitis.

2) For verification of diagnosis you can apply ultrasound, laparoscopy.

3) shows the emergency operation.

**Task No. 6**

U sick gallbladder perforation occurred with the development of a peritonitis. Ill need urgently to operate, produce holecistjektomiju, sanitize and drain the abdominal cavity.

**Task No. 7**

Selection of bile duct stenosis in cavity of bile and gall sand reveals patient purulent cholangitis. In this regard must be taken supraduodenalnaja choledochotomy, washing eRCP, holedohostomija.

**Task No. 8**

If it is not possible to differentiate elements gepatoduodenalnoj ligament in the context of the inflammatory infiltrate holecistjektomiju to perform better from the bottom. This will avoid such serious complications as random intersection of extrahepatic, the common hepatic artery ligation.

**Task No. 9**

The patient had acute flegmonoznyj cholecystitis with local peritonitis. Shows how to perform emergency cholecystectomy.

**Task No. 10**

The patient had acute flegmonoznyj cholecystitis. The increasing festering intoxication patient shows an emergency operation.

**Task No. 11**

In a patient with acute cholecystitis has choledocholithiasis and cholangitis. Holedohotomiju should be conducted, remove stones, complete holedohostomiej operation.

**Task No. 12**

Patient with acute flegmonoznym cholecystitis choledocholithiasis arose and developed purulent cholangitis. The patient shows emergency endoscopic papillosphincterotomy with litojekstrakciej.

**Task No. 13**

In the presence of oznobov, temperature rises to 380c, the colour of skin and sclera in yellow and the absence of pain in the abdomen, should think of cholecystolithiasis with holangitom.

**Task No. 14**

Flegmonoznyj holetsistit, purulent cholangitis choledocholithiasis, stenosis, major duodenal papilla. How to execute with choledochotomy and litojekstrakciej acid transduodenalnoj papillosfinkterotomiej.

**Task No. 15**

As to the operation of pathological changes in bilious channel has been found, you should think about the klippirovanii of the common bile duct. The patient shown performing the laparoscopy and delete clips.

**Recommended literature**

**Main:**

1. Surgical diseases. Tutorial ed. Saveleva V. S., Kiriyenko A.i. m., GEOTAR-Media, 2006, vol. 1.

2. Lecture of the Chair.

**Additional:**

3. Differential diagnosis of important surgical diseases. Ed. Nuzova b.g., Orenburg, 2008.

4. Guide to emergency surgery of abdominal cavity organs. Ed. Saveleva V. S., m., 2006.

5. 50 lectures on surgery instruments. Ed. Saveleva V. S., m., 2006.