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DIFFERENTIAL DIAGNOSTICS OF IMPORTANT

SURGICAL DISEASES. PART 1

Manual for 4th year students of foreign faculty

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"Differential diagnosis of important surgical diseases."

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*Annotation:*

In the educational-methodical manual for students differential diagnosis of major surgical diseases is presented .

It is the division of differential diagnosis that causes difficulties among students in preparing for practical classes at the faculty surgery department.

The educational-methodical manual contains the basic clinical data, necessary for students of 4 courses of medical universities to prepare for practical training in faculty surgery and especially during work with supervised patients. In each topic under discussion, the authors provide: a) objectives; b) the amount of knowledge required to assimilate the material (the student must know, understand and be able to); c) theoretical background, briefly characterizing this pathology and allowing differential diagnostics with similar diseases in the clinic; d) control questions; e) tests for self-monitoring of quality of out-of-class independent work. Such methodical construction of the manual will allow students to more clearly present the algorithm of thinking, necessary for the diagnosis. We believe that the information given will be useful for senior students of medical universities.

The list of literature contains the necessary sources, the study of which will help to fully prepare for classes.

*Reviewers:*

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**The theme of lessons: "HERNIA OF THE STOMACH»**

**The purpose of the lesson:** to learn at the level of reproduction in memory etiology, pathogenesis, classification, clinical picture of various forms of abdominal hernias on the basis of medical history, data of physical examination, differential diagnosis of hernias of different localization.

**Students must:**

1. Know the classification, clinical picture of uncomplicated and complicated hernias, methods of their diagnosis.

2. Understand the dangers associated with complications of hernias, mechanisms of their development and the need for timely treatment.

3. Be able to collect anamnesis, describe the clinical picture, symptoms of uncomplicated and complicated hernias.

4. Know the differential diagnosis of testicular hydrocele shells, inguinal lymphadenitis, varicose great saphenous vein and varicose veins of the spermatic cord (varicocele), benign tumors and cancer metastases in the abdominal wall and the navel, tuberculosis abscess.

**Theoretical reference.**

Hernias are the passage of internal organs covered with peritoneum via natural or artificial abnormal opening in the adjacent cavities or under the skin. If organs protrude under the skin or outside, not covered with parietal peritoneum, this pathology is called eventration (subcutaneous or total) or about a hernia.

**Classification:**

1. At the place of formation, hernias are divided into external and internal. External include: inguinal, femoral, umbilical, hernias the white line of the abdomen, lumbar, sciatic, perineal, postoperative ventral.

2. According to the etiology hernia can be congenital and acquired.

3. In the clinical picture they distinguish: reducible hernia, partly reducible hernia, irreducible hernia, complicated and uncomplicated. Complications of hernias include: pinching, inflammation of the hernia (the phlegmon of hernia sac), colonic stasis, neoplasms hernias. In the pathogenesis of acquired hernias play a major role in the combination predisposing and producing causes, the essential value of which has an increase in intra-abdominal pressure. Elements of hernias are: hernial orifice, hernia sac, hernia contents. In cases where one of the elements of the hernia is the wall of the bladder, the caecum and less often the sigmoid intestine-it is called a sliding hernia.

**Clinical picture.** Uncomplicated hernias are characterized by: moderate pain in the area of protrusion, especially reinforcing discomfort during exercise, a positive symptom "cough push". Physical examination of patients is carried out in two positions-lying down and standing still. In case of the most frequent complications- infringement, there is a strong pain in the field of hernial protrusion and the abdomen, irreducible and the voltage previously redible hernia, no symptoms of a cough shock, clinic acute intestinal obstruction.

Laboratory and instrumental diagnostics in hernias does not have independent value, but only allows you to diagnose or complication, either to differentiate the disease.

**Differential diagnosis.**

Inguinal hernia should be differentiated from:

1. Dropsy testicles shells (hydrocele), in which there is also a tumor formation. But it arises and expands gradually, over time, not changing in lying position (disappears when the hernia is fixed), has a dense consistency. There is no indication to physical activity in anamnesis, symptom cough impulse is negative. In recognition of the help method diaphanoscopy.

2. Inguinal lymphadenitis, in which history the presence of inflammatory processes is noted, mainly on the lower limbs. A tight painful new-growth is palpated, bordered from the outer opening of the inguinal canal, the skin above it more often is hyperemic, the overall body temperature increases. In the blood marked leukocytosis, there is increased erythrocyte sedimentation rate, while in patients with uncomplicated herniation these changes are not observed.

3. Varicose veins of the spermatic cord (varicocele), which more common is on the left, in adolescents of pre-conscription age. At a palpation "botryoidal" dilated veins are determined, located along the spermatic cord. Varicocele is sometimes combined with manifestation of proteinuria, microscopic hematuria. Femoral hernia is below occlusive disease bundles, often occurs in women, the following should be differentiated:

1. Benign tumors (lipomas, fibroids) and metastases malignant neoplasm, in which volumetric palpable formation is dense, painless, has clear boundaries, cannot be reduced in the abdominal cavity, hernial orifice is not determined. For the purpose diagnosis or exclusion of pelvic tumors the study of the rectum, of the uterus should be carried out.

2. Varicose veins of the lower limbs where there is significant extension of the big subcutaneous veins in the area of its mouth (oval fossa). But for varicose dilatation it is characteristic to have bluish color of the skin over the protrusion, the absence of the symptom cough shock, varicose veins in the distal part of the leg.

3. Tuberculous abscess, which is from femoral hernia on the characteristic clinical picture of tuberculosis spine – spinal deformity (kyphosis), x-ray changes-wedge-shaped body shape of the affected vertebrae, narrowing the intervertebral slit, a positive tuberculin test.

Hernia white line of the abdomen and the umbilical the following should be differentiated:

1. Pre-abdominal lipoma, in which the tumor formation has clear boundaries, packing and elastic, irreducible, there is no hernial orifice;

2. Metastases of implantation-type gastric cancer in the abdominal wall and the navel. To eliminate cancer pathology endoscopy, x-ray of stomach with barium, ultrasound of the abdomen cavities are conducted. Postoperative ventral hernias occur in the places of earlier performed surgical interventions and depending on the location they can be median (upper and lower), side (top, bottom, left-and right). Postoperative hernias are formed as a result of prolonged tamponade and drainage of wounds or abscesses. In the place of the scar a diverticulum gradually develops, which over time increases, becomes multi-chamber and unrecoverable due to the adhesive process in the hernial sac. Often such hernia is complicated by the infringement.

**Control question:**

1. List the factors contributing to the development of anterior hernias abdominal wall.

2. What are the main clinical manifestations of external abdominal hernia?

3. List the diseases with which inguinal, femoral, and umbilical hernia of the white line of the abdomen should be differentiated .

4. What are the signs of damage to the hernia?

**Tests for self-monitoring: Answers:**

The contents of the hernial sac can be anything but: 3

1. intestine

2. stomach's

3. pancreas

4. livers

5. bladder

With a sliding hernia of one of the walls of the hernia SAC is: 1

1. bladder

2. greateromentum

3. stomach

4. kidney

5.intestine

When hernia is unstrangulated, 2

the correct action will be:

1. immediate operation

2. dynamic observation

3. antibioticotherapia

4. laparoscopy

5. all of these

For differential diagnosis of inguinal hernia and shells testicle it is indicated: 4

1. radiography

2. finger examination of the rectum

3. ultrasonic investigation

4. transillumination

5. all answers are incorrect

**The theme of lessons:"ACUTE APPENDICITIS»**

**The purpose of the lesson**: to learn at the level of reproduction in memory etiology, pathogenesis, classification, features of clinical manifestations, course and characteristic complications of acute appendicitis, conduct differential diagnosis of acute appendicitis with the most common, similar on clinic, diseases.

**To the lesson the student must:**

1. Know the classification, clinical features and features of the course of acute appendicitis, instrumental and laboratory methods of diagnosis most frequently encountered in the prehospital complications.

2. Understand the causes and mechanism of the disease, the essential clinical manifestations depending on the pathologic anatomical forms of disease or complications.

3. Be able to collect complaints and find out the medical history of the disease, to determine objective symptoms, correct evaluation of laboratory data and instrumental methods of research.

4. Know the differential diagnosis of acute appendicitis, acute cholecystitis, acute pancreatitis, perforated gastric ulcer and duodenal ulcer, right-sided renal colic, ectopic pregnancy, acute intestinal obstruction, acute adnexitis.

**Theoretical reference.**

the worm-like process of the caecum. Acute appendicitis is the most common acute organ disease of the abdominal cavity. Its clinical picture is not always typical and depends on the nature of the inflammatory process, its duration, reactivity of the body of the patient. The disease has its own characteristics in the manifestations among children, pregnant women, elderly people.

**Classification.**

According to the classification proposed by KolesovV.I., there are the following forms of acute appendicitis:

1. Appendicular colic

2. A simple (superficial) appendicitis

3. Destructive appendicitis: phlegmonous, gangrenous, perforative

4. Complicated appendicitis: by appendicular infiltration, appendicular abscess, pylephlebitis, purulent peritonitis, interstitial abscesses, pelvic abscess, sepsis, etc.

**The clinical picture** of the disease is diverse, so surgeons often call it "chameleon-like disease". Acute appendicitis usually begins suddenly, in full health, with the emergence of pains in the epigastric, around the navel or across the abdomen. The pain is accompanied by nausea, double vomiting. In process of development of pathological process, 2-3 hours later (depending on the reactivity of the body) pain shifts to right iliac fossa (symptom of Kocher-Volkovich), worsens when walking, radiating to the right leg, right lumbar region.

During the first hours of disease (catarrhal appendicitis) the patient’s condition is satisfactory. The temperature is subfebrile (37,4-37,8°С), the heart rate is 80-90 beats/min. Blood pressure is not changed. Tongue is wet, slightly overlaid with a whitish fur, the abdomen is not swollen, the anterior abdominal wall is soft, involved in breathing, but painful when palpation in the right iliac area is conducted. Positive symptoms of: Sudkovsky, Rousing, Bartome-Michelson.

In phlegmonous appendicitis the patient's state is of moderate severity: the febrile temperature (38,0-38,5°С), the patient is restless, tries to move less. The heart rate is 90-100 beats/min. Tongue is covered with coated white fur. At palpation muscle tension and sharp pain in the right iliac area are observed. There are positive symptoms of: Karavaeva, Dolin, Sitkovsky, Rousing, Razdolsky, Voskresensky, Bartome-Michelson, Obraztsov, Shchetkin-Blumberg.

With gangrenous appendicitis, the patient's condition is usually, heavy. He was sluggish, trying to take a comfortable position, not to strengthen abdominal pain, body temperature is 38,5-39,0°С, pulse 100-120 beats/min, tongue is dry, densely lined with gray incrustation. The stomach is practically not involved in the breathing, anterior abdominal wall is sharply painful in the right half, where muscle tension is noted. Sharply positive symptoms of appendicitis and irritation of the peritoneum (Razdolsky, Karavaeva, Voskresensky, Bartome-Michelson, Obraztsov, Shchetkin – Blumberg et al.).

Acute destructive appendicitis may be complicated by appendicular infiltration, peritonitis, abscesses (periappendicular, subphrenic, subhepatic, interintestinal and pelvic), pylephlebitis, sepsis.

In the diagnosis of acute appendicitis (in addition to finding the medical history and complaints, the results of examination of the patient, in which rectal examination is obligatory) laboratory data is of great importance because it shows the development of the inflammatory process, the phenomenon of intoxication: in the blood there is an increase in the level of leukocytes and the shift of the leukocyte formula to the left, accelerated ESR. In peritonitis leukocytosis increase up to 25-30х109 /L.

**Differential diagnosis.**

Differential diagnosis of acute appendicitis is necessary to conduct: with perforated gastric ulcer and duodenal ulcer, acute cholecystitis, acute pancreatitis, acute intestinal obstruction, right-sided renal colic, ectopic pregnancy, acute adnexitis.

Perforated stomach ulcer and duodenal ulcer can remind clinic acute appendicitis, starting with pain in the epigastrium, which then moves to the right iliac region. However, in contrast to acute appendicitis, perforated ulcer pain is much stronger, "stabbing pain". In the history of patients there are indications of ulcer. Marked weakness, nausea, stool retention and gases. The overall condition of the patient is much heavier than in acute appendicitis: the facial expression is scared, pained, position in bed - on the back or on the side with legs pressed to stomach (fetal position). In the early hours bradycardia is determined (50-55 beats/min), then the tachycardia. Blood pressure drops to 90/40 mm.Hg.art. Tongue dry, covered with white fur. Stomach (navicular), the anterior abdominal wall of the abdomen is not involved in breathing, it is sharply tense –"wooden belly". You should always remember about this triad of symptoms: "stabbing pain","wooden belly", ulcerative anamnesis (triad Knigin-Mondor). Sharp positive symptom of Shchetkin-Blumberg's all over the stomach are determined. Percussion hepatic dullness is reduced or not determined (symptom of Spigarsky). In sloping areas of the abdomen free liquid is detected. With radiography in the abdominal cavity is determined by the free gas in the form of sickle-shaped strips under the right dome of the diaphragm. In the blood, there is a pronounced leukocytosis with leucoformula shift to the left, high ESR. It should be remembered that after 8-10 hours from the beginning of the disease, the pain subsides, the patient notes an improvement in condition, but it is a period of "imaginary well–being." Symptoms of intoxication grow, peritonitis clinic progresses (tongue dry, belly swollen, sharply painful in all departments, tachycardia, gases do not depart, stool retention), blood – leukocytosis, fluoroscopy – Kloyber`sbowls, missing gas bubble stomach. The patient must be urgently operated on.

Acute cholecystitis often resembles a picture of acute appendicitis, also starting with pain in the upper abdomen. This is possible with high, obstructive location of vermiform appendix, or in pregnant women, when the process moves upwards, as well as at low location of the bottom of the gallbladder – "hanging gallbladder". All of these options are difficult to diagnose.

It should be remembered that acute cholecystitis usually begins after taking a large amount of spicy and fat food, at night, with the appearance of acute pain, accompanied by nausea and repeated vomiting with bile, a little relieving the condition of a sick person. Pain is shifting in right upper quadrant and is located here. Acute cholecystitis is more often observed in overweight women, older than 45-50 years. Characteristic irradiation of pain (which is not in acute appendicitis) in the right hand, shoulder, shoulder girdle and shoulder blade. In patients, the body temperature rises rapidly (to 38º and above), there is weakness, malaise. Possible scleral icterus and skin when stone enters the common bile duct. The tongue is moist in the first hours, then dry and covered with brownish raid. Abdomen is not swollen, at palpation of the anterior abdominal wall painfulness and muscle tension in the right upper quadrant are observed, where one can often detect a pasty induration – a palpated gallbladder. One determines positive symptoms of Ortner, Murphy, Ker, Zakharyin, Mussy-George, Pekarsky. At the expressed process in the right hypochondrium there is a protective muscle tension. In peripheral blood one reveales leukocytosis with a shift of leucoformula the left, high ESR, increasing the level of bilirubin (which does not happen with appendicitis). At ultrasound: one finds stones in the gallbladder, layering of the wall and other signs of damage of the gallbladder wall.

Acute pancreatitis is also characterized by the appearance of pain in the epigastrium, but unlike acute appendicitis, the intensity of the pain is much stronger. The pain is irradiated in the back, has a girdle character. Before the pain syndrome violation of the diet is observed – a large amount of spicy and fat food, alcohol.

The pain syndrome accompanied by severe diarrhea disorders in the form of nausea and repeated, not bringing relief, vomiting. The condition of patients progressively deteriorates: the skin of the face pale gets gray, dry tongue, overlaid with grayish-brown coating. Stomach moderately distended, peristalsis is sluggish or is not listened, gases do not depart, phenomena of dynamic intestinal obstruction. One defines positive symptoms of Voskresensky, Kerte, Mayo-Robson, Schetkin-Blumberg, Cullen, Mondor, Gray-Turner. Dyspnea, tachycardia, decreased blood pressure are noted.

Laboratory examination of the blood reveals leukocytosis with leucoformula shift to the left, high ESR. In biochemical analysis - hyperglycemia, hypocalcemia, increased blood amylase.

There is an increase to high numbers (512,1024, etc.) of urine diastase.

Ultrasound reveals characteristic signs of acute pancreatitis, often liquid in the omental sac, and the abdominal cavity. At x-ray examination the reduction of the excursion diaphragm, the presence of liquid in the abdominal and pleural cavities are determined.

Acute intestinal obstruction has to be differentiated from acute appendicitis in cases where the pain syndrome is localized in the right abdomen that is, for example, when intussusception the ileum in the blind (often in children). Under this the pain is cramping in nature, there is nausea, vomiting, retention of gases and stool. The abdomen is usually swollen, but with palpation the anterior abdominal wall has no tension. In the ileocecal region a not painful, movable «sausage-like» mass is determined – invaginate. Percussion of the abdomen – thympanitis. Quite often under rectal examination one finds mucus with blood - a symptom of "raspberry jelly».

Acute intestinal obstruction in adults is usually preceded by violation of the diet, for example – rich, coarse food after previous starvation. Therefore, acute intestinal obstruction, especially strangulation, is called a "disease wars." In history there may be surgery on abdominal organs.

Intestinal obstruction can be caused by a tumor, leafy invasion, volvulus, or intussusception nodulation. Patient complains of sharp, cramping abdominal pain without clear localization, nausea, multiple vomiting. In the final stage, with the development of peritonitis, vomiting has a "fecal" character. For intestinal obstruction asymmetric distension of the abdomen, stool and gas retention are characteristic. There are positive symptoms of Val`, Shlange, Sklyarov(splashing), Spasokukotsky, Obukhov hospital. When the overview x-ray of abdominal cavity is conducted Klowber`s bowls are found.

Renal colic. For right-sided renal colic it is characteristic to have a sharp lower back pain irradiating to the right groin area, restless behavior of the patient, frequent urination with cutting and pain, in small portions mixed with blood. Under palpation - pain on the course of the ureter. Positive symptom of Pasternatsky. Symptoms of peritoneal irritation do not occur. In urine - protein and fresh red blood cells are found. Radiography of the kidneys and ureters – the shade of the stones. At cystochromoscopy indigo carmine is delayed or does not occur at all. Ultrasound: stones and symptoms of kidney hypertensions are found.

Ectopic pregnancy in contrast to acute appendicitis is characterized by strong, cutting pain in the lower abdomen above the bosom, accompanied by dizziness, weakness, nausea, vomiting, short-term fainting. There is a missed period, bloody discharge from the vagina. The skin is pale. Pulse frequent, weak filling. Blood pressure down. Stomach moderately swollen, not involved in the act of respiration. There can be defined tense rectal muscles of the abdomen. A positive symptom of Schetkin-Blumberg. Percussion - presence of free fluid in the abdominal cavities. Puncture of the posterior arch confirms or excludes the diagnosis of ectopic pregnancy. Ultrasound: free liquid in the abdominal cavity (blood).

Acute adnexitis as well as acute appendicitis is characterized by pain at the bottom abdomen, fever. Unlike appendicitis, adnexitis pain is irradiating in the sacrum, lower back. In the anamnesis there are indications of menstrual disorders or previous inflammatory disorders disease of the appendages. Under palpation pain is determined by the bottom belly on both sides. Muscle tension is often absent. At vaginal examination an inflammatory tumor appendages are revealed, which is closely related to the uterus. The positive Promptov`s symptom is determined: pain when moving the cervix during vaginal or rectal examination. Can be defined positive symptom of Zhindrinsky– reducing pain in right iliac region when the patient's position changes (from lying to sitting position).

**Control question:**

1. List the main reasons that contribute to the development of acute

appendicitis's.

2. What are the clinical signs and symptoms of acute appendicitis.

3. Specify laboratory and instrumental methods of research, used for the differential diagnosis of acute appendicitis.

4. Surgeon's tactics in acute appendicitis.

**Tests for self-monitoring:**

 Answers:

Acute appendicitis is not characterized by a symptom: 3

1. Rousing

2. Voskresensky

3. Murphy

4. Obraztsov

5. Bartome-Michelson

Specific to acute appendicitis is a symptom: 5

1. Kocher-Volkovich

2. Rousing

3. Sitkovsky

4. All three symptoms

5. None of them

In acute appendicitis peritoneal symptoms include: 4

1. Voskresensky (symptom of " shirt»)

2. Schetkin-Blumberg

3. Razdolsky

4. All the symptoms mentioned

5. None of them

Acute appendicitis should be differentiated with all the listed diseases, except: 1

1. Glomerulonephritis's

2. Acute pancreatitis

3. Acute adnexitis

4. Acute gastroenteritis

5. Right-sided renal colic

Primary gangrenous appendicitis is most common in: 1

1. Children

2. Critically ill patients

3. Men

4. Women

5. Elderly patients

Decisive in the differential diagnosis of acute 5

appendicitis with impaired ectopic pregnancy is:

1. Symptom Kocher-Volkovich

2. Symptom Promptov

3. Dizziness and fainting

4. Symptom of Bartome-Michelson

5. Puncture of the posterior vaginal vault

**The theme of lessons: "ACUTE CHOLECYSTITIS»**

**The purpose of the lesson:** to learn at the level of reproduction in memory the etiology, pathogenesis, clinical manifestations, methods of diagnosis of acute cholecystitis, to master the technique of determining the symptoms, the ability to evaluate the patient's condition, to carry out the differential diagnosis.

By the lesson the student should:

1. Know the classification, clinical signs of acute cholecystitis.

2. Understand the etiology and pathogenesis of acute cholecystitis.

3. Be able to properly collect medical history and identify the symptoms of acute cholecystitis during examination of the patient, to evaluate the data of laboratory and instrumental methods of research.

4. Know the differential diagnosis of acute cholecystitis: acute

appendicitis, gastric ulcer and duodenal ulcer,

renal colic, acute pancreatitis, acute intestinal

obstruction, dyskinesia of the biliary tract.

**Theoretical reference.**

Acute cholecystitis-acute inflammation of the gallbladder wall. Currently, by frequency acute cholecystitis takes the second place after acute appendicitis. Women are more likely to suffer than men (5:1).

**Classification.** There is uncomplicated and complicated acute cholecystitis. With uncomplicated cholecystitis, catarrhal and destructive (phlegmonous and gangrenous) forms of inflammation are determined.

Acute cholecystitis may be complicated by: pericholecystitis (transition of the inflammatory process onto the neighboring organs), the empyema of the gallbladder, primary dropout, cholangitis, mechanical jaundice, peritonitis, acute cholecystopancreatitis, abdominal abscesses cavities.

**Clinical picture.** Acute cholecystitis manifests itself by an attacking intense pain of a constant nature in the right hypochondrium with irradiation to the right supraclavicular region and the scapula arising usually after the error in the diet (eating spicy and fat food). There is nausea, repeated vomiting. Body temperature rises. Palpation reveals local tenderness in the right hypochondrium,

the symptoms of acute cholecystitis are determined: Ortner, Ker, Zakhar`in, Murphy, George-Mussy, Pekarsky. Catarrhal form of inflammation of the tension of the muscles of the anterior abdominal wall is not present, Schetkin-Blumberg symptom is negative.

In destructive cholecystitis with signs of local or diffuse peritonitis one marks increase in body temperature to 39-40 º C, more frequent pulse rate up to 100-120 beats per minute, dry overlaid tongue, tension of muscles of the anterior abdominal wall, symptoms of Ortner, Ker, Murphy, Zakhar`inare expressed, a positive symptom of Schetkin-Blumberg.

**Differential diagnosis.**

Differential diagnosis is carried out with dyskinesia biliary tract, acuteappendicitis, gastric ulcer and duodenum, acute pancreatitis, acute intestinal obstruction, right-sided renal colic.

Dyskinesia of biliary tract in contrast to acute cholecystitis usually occurs in women under 40 years of age and is characterized by bouts of pain in the right hypochondrium no characteristic of irradiation. Pain can subside after abundant single vomiting, often occur once a day. Condition of patients is satisfactory, the increase in body temperature was observed. The abdomen is slightly painful in the right upper quadrant, sometimes palpable painless, enlarged gall bladder. Blood tests without deviation from norm.

Acute appendicitis in contrast to acute cholecystitis occurs equally often in men and women, predominantly in young and middle-aged. For acute appendicitis is characteristic localization of pain in the right iliac region, where there is a protective muscle tension of anterior abdominal wall, positive symptoms of Kocher-Volkovich, Rousing, Sudkovsky, Obraztsov, Voskresensky, Karavaeva, Bartome-Michelson are defined, and symptom of Schetkin-Blumberg is identified.

Perforated stomach ulcer and duodenal ulcer is more common in men. There is an "ulcer" anamnesis-exacerbation of the process in autumn-spring, increased pain when eating. Very moment perforation is accompanied by sharp pains, comparable to «knife-like pain». Patients try to lie still, often on the right side, with legs pressed against his stomach. Unlike acute cholecystitis, such as usually, there's no vomiting. Tension of anterior abdominal wall muscles is diffuse and expressed much more sharply ("wooden" belly). Positive symptom ofSpigarny – the disappearance or narrowing of the hepatic dullness, x-ray symptom of a sickle – shaped strip of gas under the right the dome of the diaphragm. It is important to remember the triad of Knigin-Mondor: ulcerative history, «stabbing» pain, "wooden" belly. For diagnostic purposes such modern methods as ultrasound, laparoscopy should be used, in which liquid is detected in the abdominal cavity.

Acute pancreatitis manifests itself especially with intense pains in epigastric (left hypochondrium), with irradiation in the back, early indomitable vomiting. There is a swelling of the upper abdomen, pulsation of the abdominal aorta is not determined (a symptom of Voskresensky). Muscle tension there is no anterior abdominal wall, there is painful resistance in epigastric region (a symptom of Kerte). Morbidity is also noted in left costovertebral angle (symptom of Mayo-Robson). Symptoms of Mondor, Cullen, Gray-Turner emerge. In the blood and urine tests there is an increase in the level of amylase and diastase.  X-ray examination allows to establish indirect signs of pancreatitis –the limitation of the left cupula of diaphragm, the liquid in pleural sinus on the left. Ultrasound can show changes in the structure of the pancreas, liquid in theomental bursa can be determined.

Acute intestinal obstruction is characterized by contractile pain, enhanced peristalsis, without irradiation, swelling stomach. There is no tension in the muscles of the anterior abdominal wall, depart gases, there is no stool. Positive symptoms of Val`, Sklyarov, Shlange, Kivul`, Spasokukotsky are defined. On the survey radiograph of the abdominal cavity they find Kloyber`s bowls. When giving water suspension of barium there is a violation of its movements through the intestine.

Renal colic is characterized by acute, subacute pain in the right lumbar region with irradiation to the area of the resulting muscles of the thigh, genitals. Patients are beside themselves from pain, restless. There are frequent urge to urinate, accompanied by sharpness and pain in the urethra. Positive symptom of Pasternatsky is determined. When doing ultrasound and x-ray examination the concrements can be defined. Urine analysis reveals the presence of fresh red blood cells, white blood cells, protein.

**Control question:**

1. What are the reasons leading to the occurrence of acute cholecystitis?

2. Specify the symptoms characteristic of acute cholecystitis.

3. List the complications of acute cholecystitis.

4. What are the diseases with which to differentiate acute cholecystitis.

**Tests for self-monitoring:Answers:**

Acute cholecystitis usually begins with: 3

1. Rise in temperature

2. The emergence of vomiting

3. Pain in the right hypochondrium

4. Stool disorders

5. Heaviness in the epigastric region

The main method of examination of patients with uncomplicated 3

cholecystitis is:

1. Infusion cholegraphy

2. ERCP

3. Ultrasound of the gallbladder

4. Laparoscopy

5. Gastroduodenoscopy

The complications of acute calculous cholecystitis do not include: 1

1. Esophageal varicose veins dilatation

2. Mechanical jaundice

3. Cholangitis

4. Subhepatic abscess

5. Peritonitis

Stone formation in the gallbladder contributes to everything except: 5

1. Stagnation of bile in the bladder

2. Metabolic disorders

3. Inflammatory changes in the gallbladder

4. Dyskinesia of biliary tract

5. Disorders of pancreatic secretion

For clinics of acute cholangitis not characteristic: 5

1. High temperature

2. Pain in the right hypochondrium

3. Jaundice

4. Leukocytosis

5. Unstable loose stools

**The theme of lessons:"ACUTE PANCREATITIS»**

**The purpose of the lesson** – to learn at the level of reproduction in memory etiology, pathogenesis, clinical manifestations, diagnostic methods of acute pancreatitis, consolidate the ability to properly collect complaints, find out anamnesis, to master the technique of determining the symptoms, to appoint a survey and evaluate the obtained data, conduct differential diagnostics.

**By the lesson the student should:**

1. Know the classification, etiology, pathogenesis and clinical manifestations of acute pancreatitis, methods of instrumental and laboratory diagnostics, types of complications.

2. Understand the etiology and pathogenesis of acute pancreatitis, clinical manifestations depending on the form of the disease and complications.

3. Be able to properly collect medical history and complaints, identify the objective the symptoms of the disease, evaluate the data of laboratory and instrumental study.

4. Know the differential diagnosis of acute pancreatitis: with a perforated gastric and duodenal ulcer, acute thrombosis mesenteric vessels, acute intestinal obstruction, acute appendicitis, acute cholecystitis, acute gastritis, left-sided renal colic, myocardial infarction.

**Theoretical reference.**

Acute pancreatitis - acute and phase-flowing autolytic degenerative - inflammatory process of tissues pancreas owing to introduce activation of its proteolytic and lipolytic enzymes characterized by severe disturbances of homeostasis and functions of vital organs and systems of the body.

Among acute surgical diseases of abdominal organs acute pancreatitis currently ranks one of the leading places, women suffer more than men. In most cases, acute pancreatitis is associated with a limited number of etiological factors – biliary, trauma, nutritional (often alcoholic) origins. The mechanism of development has the character of autolysis of tissue of the pancreas owing to introduce activation of its proteolytic and lipolyticproenzymatic systems, capable of disrupting cellular and tissue structures inside and outside its ducts. Activation of enzymes occurs when bile is thrown into the main pancreatic duct (bile acids are activators enzymes), reflux of duodenum in Virung duct – when insufficiency of the Oddi's sphincter, with the enzyme activator is enterokinase (enzyme 12 duodenal ulcer), traumatic damage pancreatoduodenal zone (activator is the enzyme cytokinesis).

**Classification.**There are the following forms of acute pancreatitis:

1. Edematous (interstitial) pancreatitis

2. Pancreatic necrosis, sterile

a) by the nature of necrosis - fatty, hemorrhagic, mixed

b) on the scale of the damage – a small, large-focal, subtotal-total

3. Complications of acute pancreatitis:

a) peripancreatic infiltration

b) infected pancreatonecrosis

c) peritonitis: enzymatic (abacterial), bacterial

d) pancreatic abscess

e) mechanical jaundice

e) pseudocyst: sterile, infected

g) arrosive hemorrhage

h) septicphlegmon of retroperitoneal tissue

I) internal and external digestive fistulas.

**Clinical picture.** The patient complains of cruel, belting pain of constant character in the epigastrium, indomitable vomiting, not bringing relief. In the history of patients there may be an indication of gallstone disease. The disease may occur as a result of errors in diet, frequent consumption of large amounts of alcohol drinks and their surrogates. The pain starts suddenly and radiates to the back, "wrap-around", sometimes intolerable, the patient is restless, tossing. Body temperature normal or subfebrile. Tongue dry, thickly lined with white-brown coating. The pulse is speeded up to 90-110 beats/min., blood pressure is not stable, with progression the disease hypotension develops. Belly is swollen in epigastrium, its involvement in the act of breathing is limited, palpation is determined by the area morbidity and resistance in the epigastric region (symptom of Kerte), irradiation of pain in the left rib - vertebral angle (symptom of Mayo-Robson), sharply weakened or not defined transmission pulsation of the abdominal aorta (symptom of Voskresensky). Cyanosis of the face, trunk (symptom of Mondor), swelling and icteric staining of the skin in the umbilical area (symptom of Cullen), small-point hemorrhages of the abdominal wall (symptom of Gray-Turner) are noted. Percussion-tympanitis in the upper abdomen and blunt in the lateral sloping areas.

At auscultation sluggish peristaltic noises (paresis intestine's) are auscultated. With the progression of the process, there are signs of irritation of the peritoneum (symptom of Schetkin-Blumberg). At formation of the infiltration of the omental bursa tight painful, tumor formation in the epigastrium is palpated, with abscess formation which joins the hectic fever. Purulent pancreatitis occurs extremely difficult. On the background of progression of the disease intoxication (septic condition, peritonitis) is rapidly increasing. In the blood an increase in leukocytosis is revealed, shift of the formula to the left, increased erythrocyte sedimentation rate, marked hyperglycemia, and hypocalcemia. Informative laboratory tests indicating the degree of enzyme toxemia are the determination of blood amylase level and urine diastase which increases or decreases even to 0. Quite often there is an increase in the total and direct bilirubin of blood, in connection with compression of the edematous head of the gland of the common bile duct.

At overview X-ray analysis of the abdomen distention of the transverse colon, the blurred outline of the left psoas muscle (symptom of Tobia), duodenitis and detailed horseshoe of the duodenal ulcer are revealed. Chest x-ray allows you to set the reduction of excursions of the diaphragm, a reactive effusion in the left pleural sinus. In ultrasound, there is an increase in the size of the pancreas, the increase of its echogenicity and swelling, pockets of uneven density, and softening during destruction of the gland tissue, common bile duct dilatation. Concretions in the gallbladder can be detected and biliary ducts. Among additional instrumental methods of diagnostics, allowing to specify the picture of damage, there can be computer tomography and nuclear magnetic resonance (NMR imaging) scanning, diagnostic laparoscopy.

**Differential diagnosis.**

Differential diagnosis should be carried out with: perforated stomach ulcer and duodenal ulcer, acute thrombosis mesenteric vessels, acute intestinal obstruction, acute appendicitis, acute cholecystitis, acute gastritis, left renal colic, myocardial infarction.

During the differential diagnosis of acute pancreatitis and perforated ulcers one should remember that for a perforated stomach ulcer and duodenal ulcer the following is characteristic: typical gastric history, sudden onset, "stabbing pain", triad of Knigin - Mondor, a forced position of the patient lying on his right side with his knees brought to his stomach ("fetal position"), indrawn «wooden» belly, bradycardia, vomiting rare or single. Percussion is determined by the disappearance of hepatic dullness (symptom of Spigarny). At the general x-ray examination of the abdominal cavity gas under the right cupula of the diaphragm is revealed. When covering the perforating hole of a hollow organ there is often a period of «imaginary well-being», characterized by the disappearance of pain, the lack of gas under cupula of diaphragm. To detect a covered perforation with EGD repeated x-ray examination, or diagnostic laparoscopy are indicated.

In acute pancreatitis, pain is noted in the projection of the pancreas, belting. Restless behavior of patients, indomitable vomiting, not bringing relief, tachycardia, bloating with a relatively soft abdominal wall, positive symptoms of Kerte, are revealed. In the blood one reveales an increase in leukocytosis, shift of the formula to the left, increased erythrocyte sedimentation rate, marked hyperglycemia, and hypocalcemia. Informative laboratory tests indicating the degree of enzyme toxemia are the determination of blood amylase level and urine diastase which increases or decreases even to 0. Quite often there is an increase in the total and direct bilirubin of blood, in connection with compression of the edematous head of the gland of the common bile duct.

The overview retinoscopy of the abdomen reveals distention of the transverse colon, the blurred outline of the left psoas muscle (symptom of Tobia), duodenostasis and detailed horseshoe of duodenal ulcer.

Chest x-ray allows you to set the reduction of excursions of the diaphragm, a reactive effusion in the left pleural sinus. In ultrasound, there is an increase in the size of the pancreas, the increase of its echogenicity and swelling, pockets of uneven density, and softening during destruction of the gland tissue, common bile duct dilatation. Concretions in the gallbladder can be detected and biliary ducts. Among additional instrumental methods of diagnostics, allowing to specify a picture of defeat, can be computed tomography (CT) and nuclear magnetic resonance (NMR) scanning, diagnostic laparoscopy.

**Differential diagnosis.**

Differential diagnosis should be carried out: perforated stomach ulcer and duodenal ulcer, acute thrombosis mesenteric vessels, acute intestinal obstruction, acute appendicitis, acute cholecystitis, acute gastritis, left renal colic, myocardial infarction.

During the differential diagnosis of acute pancreatitis and perforated ulcers it should be remembered that for a perforated stomach ulcer and duodenal ulcer the following is typical: gastric history, sudden onset, "stabbing pain", triad of Knigin - Mondor, a forced position of the patient lying on his right side with his knees brought to his stomach ("fetal position"), «wooden»belly, bradycardia, vomiting rare or single. Percussion is determined by the disappearance of hepatic dullness (symptom of Spigarny). At the general x-ray examination of the abdominal cavity gas under the right cupula of the diaphragm is revealed. In the cover for perforating hole of a hollow organ there is often a period of imaginary well-being, characterized by the disappearance of pain, the lack of gas under the cupula of diaphragm. To detect a covered perforation EGD is indicated together with repeated x-ray examination, or diagnostic laparoscopy.

In acute pancreatitis, pain is noted in the projection of the pancreas, belting. Revealed restless behavior of patients, indomitable vomiting, not bringing relief, tachycardia, bloating with a relatively soft abdominal wall, positive symptoms of Kert, Mayo-Robson, Voskresensky, Kullen, Mondor, etc., increase urine diastase, no free gas under the right cupula of diaphragm.

Thrombosis of mesenteric vessels is difficult to differentiate with acute pancreatitis, due to the presence of common symptoms of intoxication, intestinal paresis. Thrombosis develops, as a rule, in elderly patients and senile age, suffering from heart disease, endocarditis, rhythm disturbance, atherosclerotic lesions of the aorta and its visceral (mesenteric) branches. The pain occurs suddenly, has colic-like character, no local pain in the projection of pancreas. There is a liquid stool mixed with blood. Vomiting is rare, sometimes with an admixture of "coffee grounds", which is not typical for acute pancreatitis. In the analysis of blood - increase in clotting activities. Blood amylase and urine diastase, as opposed to acute pancreatitis, is most often not elevated. Crucial for differential diagnostics is diagnostic laparoscopy and selective mesentericography according to Seldinger, diagnostic laparotomy.

Acute intestinal obstruction has a number of common symptoms with acute pancreatitis: multiple vomiting, sudden onset of abdominal pain, bloating, delayed stool and gas. However, the pain has a contractible nature around the belly, while in pancreatitis the pain is localized in the epigastric region, it is encircling, constant. At acute intestinal obstruction positive symptoms of Val`, Sklyarov, Shlange, Spasokukotsky are revealed, at rectal examination there is a gaping anus, an empty dilated ampoule of the rectum (symptom of Obukhov hospital), which is not typical for acute pancreatitis, where dynamic paresis and bloating transverse colon are observed. Overview x-ray study of the abdomen determines Kloyber`s bowls and a violation of passage of barium through the intestines when acute intestinal obstruction.

Acute appendicitis begins with pain in the epigastric region, after 3-4 hours moves to the right iliac region (symptom of Kocher-Volkovych). In acute pancreatitis, pain also occurs in the epigastrium, but not displaced, is brutal, and surround radiating in left costal-vertebral angle (symptom of Mayo - Robson). General condition in appendicitis is usually satisfactory. In acute pancreatitis, particularly destructive, as is always heavy. Vomiting at acute appendicitis is usually a one-time, with pancreatitis frequent, indomitable. Belly with acute appendicitis often does not swell, with pancreatitis is usually bloating in the upper abdomen. For acute appendicitis symptoms of Rovsing, Sudkovsky, Obraztsov, Bartome-Michelson, Razdolsky, Karavaeva are typical. In acute pancreatitis these symptoms are negative, but positive are the symptoms of Kerte, Voskresensky, Mayo-Robson, Mondor, Cullen. Urine diastase in appendicitis is normal, in pancreatitis is elevated. Ultrasound reveals changes in the echogenicity of the gland tissue, increase in its size, the presence of exudate in the omental bursa and abdominal cavity. Under diagnostic laparoscopy is noted: in acute pancreatitis serohemorrhagic exudate, spot steatonecrosis in the abdominal cavity, while in acute appendicitis changes in the worm-like process, exudate serofibrinous or purulent in the right iliac region are revealed.

Acute cholecystitis is also accompanied by frequent vomiting and pronounced pain syndrome. However, the pain is localized in the right hypochondrium, radiates in the right supraclavicular region and blade. Palpation often determines an enlarged, painful gall bladder, positive symptoms of Murphy, George-Mussy, Ker, Zakharyin, Ortner. In acute pancreatitis - epigastric pain belting and spreading all over the stomach. Kerte symptoms are determined, as well as Voskresensky, Mayo-Robson, Mondor, Cullen. Acute cholecystitis, as the rule does not proceed with rapidly increasing signs of intoxication, collapse and shock, and abdominal distension and paralytic intestinal obstruction occurs due to the development of peritonitis after 1-2 days. Unlike pancreatitis ultrasonography detects the vast majority of cases of concrements in the gallbladder and changes in the pancreas is secondary.

Acute gastritis, as well as acute pancreatitis, is characterized by sudden appearance of abdominal pain, vomiting. Pain in pancreatitis is cruel, belting, sometimes patients lose consciousness. When gastritis pain is more often localized, without irradiation, not as sharp as in pancreatitis. On the first plan for gastritis are dyspeptic disorders – burp, poor appetite, nausea, heartburn, vomiting with an unpleasant odor.

The condition of the patient with gastritis is more often satisfactory. The abdomen is soft, moderate pain in the epigastricregion, symptoms of Voskresensky, Mayo - Robson, Shchetkin - Blumberg do not exist. Diastasis in the urine is not increased. Ultrasound does not detecte changes in pancreas. Endoscopy gives a picture of the focal or lesions of the mucous coat of stomach.

Renal colic has a number of common symptoms with acute pancreatitis, especially when the pathological process is localized in the tail area of the pancreas, or in its head. However, the pain of renal colic is sudden and sharp, radiating to the groin, thigh, scrotum, and removed by the introduction of antispasmodics, blockade of the seed rope.

In the anamnesis - indications for pathology of urinary system, urinary stone disease, dysuric disorders. Patient with renal colic is restless, rushes. A sharply positive symptom of Pasternatsky is revealed. In the urine test of a patient with renal colic there are fresh red blood cells, could be protein, cylinders, white blood cells. At cystochromoscopy the release of indigocarmine is slowed or absent on the side of the lesion. Ultrasound of the kidneys shows signs of violation of urodynamics, dilation of renal pelvis, hydronephrosis, dense inclusions in the calices-pelvis system. In case of difficulties in differential diagnosis one should resort to diagnostic laparoscopy.

Myocardial infarction is sometimes accompanied by very severe pain in the epigastric area, following which there may be a shock or collapse. However, in myocardial infarction there is no vomiting, no pain on palpation in the region of the pancreas, there is no paresis intestine, the stomach is not distended. The position of the patient is forced– sitting or lying down. Expressed pallor of the skin, shortness of breath. Pulse is weakened, heart rhythm is disturbed, heart tones are deaf. Unlike this patient with acute pancreatitis is worried, rushing, stomach swollen, painful in the epigastric area, positive symptoms of Kerte, Voskresensky, Mayo-Robson, Kulen, Mondor, and others are determined.

In the study of blood in a patient with acute pancreatitis one observes leukocytosis, toxic formula shift to the left. An increase in urine diastase is revealed, and in myocardial infarction these changes are absent. The myocardial infarction is diagnosed clinically and with the help of electrocardiogram.

**Control question:**

1. What are the causes and mechanism of development of acute pancreatitis.

2. List the main clinical symptoms of acute pancreatitis.

3. What are the reliable methods of laboratory and instrumental diagnosis of acute pancreatitis.

4. Conduct differential diagnosis of acute pancreatitis with other acute surgical and non-surgical diseases.

**Tests for self-monitoring: Answers:**

Tenderness to palpation in left costal-vertebral 2

angle is characteristic for the symptom of:

1. Voskresensky

2. Mayo-Robson

3. Mondor

4. Grey-Turner's

The development of flatulence in patients with acute pancreatitis is due to: 3

1. Compression of the duodenum by the edematous head

pancreas

2. Frequent uncontrollable vomiting

3. Intestinal paresis

4. Deficiency of pancreatic hormones

5. Enzymatic insufficiency of the pancreas

Inability to determine the pulsation of the abdominal aorta 5

in the epigastrium in acute pancreatitis is called a symptom of:

1. Mayo-Robson

2. Mondor

3. Ker

4. Cullen

5. Voskresensky

To acute pancreatitis all forms are related except: 2

1. Hydropic

2. Pseudo-tumor-like pancreatitis

3. Fat pancreatonecrosis

4. Hemorrhagic pancreatic necrosis

The most informative methods of research in acute 3, 4

pancreatitis are:

1. Diagnostic pneumoperitoneum

2. The review radiography of abdominal cavity

3. Laparoscopy

4. Determination of blood amylase and urine diastase, ultrasound

The most common symptom of acute pancreatitis is: 5

1. Nausea and vomiting

2. Hyperthermia

3. Jaundice

4. Abdominal distention

5. Pain in the left upper abdomen

**The theme of lessons: "COMPLICATIONS OF PEPTIC ULCER DISEASE**

**OF THE STOMACH AND DUODENAL ULCER»**

The purpose of the lesson: to learn the level of reproduction of memory complications of gastric ulcer and duodenal ulcer (perforation, piloroduodenal stenosis, gastroduodenal bleeding, malignization, penetration), their causes, clinical course, methods of diagnostic algorithm of examination of patients with complications of peptic ulcer disease necessary for their differential diagnostics.

**By the lesson the student should:**

1. Know the clinical anatomy of the stomach and duodenum, classification of stages of stenosis, severity of blood loss, stages of development and perforation, clinical manifestations of the main complications of peptic ulcer disease, methods of General clinical and instrumental examination of patients.

2. Understand the pathogenesis of General and local disorders in these complications and methods of their correction.

3. Be able to collect anamnesis and to carry out physical inspection of patients with different kinds of complications of peptic ulcer disease, analyze the received information.

4. Know differential diagnosis of diseases, during which similar complications may occur (gastric cancer syndrome, Mallory-Weiss syndrome, lung cancer, acute diseases of abdominal organs).

**Theoretical reference.**

I. GASTRODUODENAL BLEEDING

Acute gastrointestinal bleeding (GIB) is a complication of numerous diseases of the gastrointestinal tract, where the share of gastric ulcer and duodenal ulcer accounts for up to 75-80% of bleeding. It is fundamentally important to distinguish the bleeding of ulcer and non-ulcer genesis. To non-ulcer reasons belong varicose veins of the esophagus at the portal hypertension, the syndrome of Mallory-Weiss tears, disintegrating tumors of the stomach, hemorrhagic gastritis. Intestinal bleeding may occur when non-specific ulcerative colitis, typhoid, tumors of the colon guts of exophytic nature, blood diseases (hemophilia, Werlhof's disease - idiopathic thrombocytopenic purpura), poisoning by arsenic, acids, and alkalis occur.

**The clinical picture** of GIB is characterized by vomiting with blood admixture or "coffee grounds", liquid "tarry" stools (melena), total weakness, dizziness, even loss of consciousness, increasing pale skin and mucous membranes. Typically there are three stages of severity of acute GIB – light, medium and heavy which are determined primarily by subjective and objective state of the patient, the degree of tachycardia and blood pressure (BP). So when the blood loss is up to 500 ml (mild), the patient's condition doesn't change much, there is a weakness during exercise, tachycardia up to 100 beats/min, decrease in systolic BP is not below 100 mmHg.art. Blood loss from 500 ml to 1 liter determines the average degree of gravity: sharp pallor appears, dizziness, noise in the ears, "flickering flies" in the eyes, patients sometimes lose consciousness. Frequency heart rate 100-120 beats/min, the filling and tension on radiation arteries is reduced, sometimes pulse is determined only in the area of carotid arteries, blood pressure is progressively reduced from 100 to 80 mmHg.art. In severe blood loss (more than 1 liter) the patient's condition is severe or extremely severe, consciousness is lost, pronounced pallor, facial features are sharp with an earthy shade, tachycardia is more than 120 UD/ min, systolic blood pressure is below 80 mmHg.art., diastolic may not be determined. Bleeding from gastric ulcer or duodenal ulcer is the most common reason (75%) of gastroduodenal bleeding. The clinical course distinguish between covert and overt (profuse) bleeding. Latent bleeding is manifested by weakness, decrease of working capacity, drowsiness, fatigue, pale skin and mucous membranes. Patients often for several days or even weeks do not seek medical care for a long time. And only the emergence of black stool causes them to come to the doctor. During the examination they have in peripheral blood the revealed signs of iron deficiency anemia (decrease in hemoglobin, hematocrit, red blood cell count, color indicator), and in the study of feces – a positive reaction Gregersen`s. At endoscopy an ulcer is detected.

The majority of patients indicate the presence of ulcer history, symptoms of peptic ulcer disease (heartburn, pain, vomiting, etc.). For clinical pattern of apparent ulcer bleeding a peculiar symptom is characteristic: an increased pain attack before bleeding occurs followed by a rapid decay of Bergman's symptom (the effect of alkalization of the acidic contents of the stomach by the coming blood) and the emergence of vomiting with "coffee grounds". Common symptoms are observed blood loss (hypotension, tachycardia, tarry stools (melena). The severity of symptoms of acute blood loss depends on the number of blood loss, intensity and duration of bleeding. Patient is pale, focused, face is scared. He lays, afraid to move, so as not to cause the resumption of vomiting with blood. A person may be (if significant blood loss) covered with cold, sticky sweat. Pulse frequent (100-120), soft, AD reduced (80-90 mmHg.art.), wet tongue, almost always lined with white bloom, often on the lips, tongue and gums have remains of bloody vomit. The abdomen is not swollen, the anterior abdominal wall is soft and virtually painless in all departments. In the study of peripheral blood a decrease in hemoglobin, hematocrit, red blood cell count, color count is detected. Platelet count is normal. In patients with peptic ulcer bleeding there is no expansion of hemorrhoidal veins and veins of the anterior abdominal wall, as in portal hypertension syndrome, complicated by bleeding from varicose veins of the esophagus. Prior intoxication and increasing cachexia are typical for stomach cancer, and are not observed in gastric ulcer and duodenal ulcer. Finally, the source of bleeding can be determined by EGDS, in which an ulcer or a tumor is detected, a rupture of the mucous membrane or varicose veins of the cardia.

**Differential diagnosis.**

It is necessary to conduct a differential diagnosis with: Mallory-Weiss syndrome, bleeding in stomach cancer, syndrome of portal hypertension, hemorrhagic erosive gastritis, disease, idiopathic thrombocytopenic purpura, pulmonary hemorrhage.

Mallory-Weiss syndrome is more common in perfectly healthy people due to a sharp rise in intragastric pressure (in cases of severe vomiting associated with poisoning with alcohol substitutes, hypertension stroke, epilepsy, motion sickness). Bleeding occurs upon rupture of the mucous membrane and other layers of the cardia of the stomach. Unlike ulcerative bleeding, the main symptom of bleeding in this case is vomiting, initially unchanged gastric contents, followed by the appearance of blood veins and "coffee grounds" in the vomit masses. No ulcer history. At EGDS there are erosion, ruptures of the mucous membrane of the stomach cardia, the absence of ulcers. Bleeding in gastric cancer in the vast majority of cases is observed in the late stages, with the collapse and ulceration of the tumor. Unlike ulcers, stomach cancer is more common: elderly patients, progressive weight loss and cachexia, growing weakness, burp rotten. A bumpy tumor in the projection of the stomach can be palpated, metastatic foci in the left supraclavicular region (Virchov), navel (Joseph metastasis), bubble-rectal depression (Schnitzler), ovary (Krukenberg) are determined.

Profuse bleeding in stomach cancer is preceded by a period of latent bleeding and the appearance of anemia in the patient. Esophagogastroduodenoscopy reveales a dense nodular formation, bleeding, prone to fragmentation. Final verification of the diagnosis is carried out during biopsy and histological examination of biopsy material. Portal hypertension syndrome is characterized by splenomegaly, ascites, violation of the outflow of venous blood and therefore the expansion of portocaval anastomoses. Bleeding occurs when the varicose veins of the lower esophagus and cardia of the stomach rupture. There is a massive rapid, bleeding with open mouth, almost constant bleeding. While in ulcerative bleeding more often are "coffee grounds". With bleeding from varicose veins of the esophagus, there is no ulcer. Visually, the skin is jaundiced, there are "vascular asterisks", "hepatic palms", the expansion of the subcutaneous veins of the anterior abdominalthe walls in the form of "Cruveilhier's sign/ Medusa head ", palpable enlarged liver and spleen, is determined by free fluid in the abdomen (ascites) - these changes do not exist in gastroduodenal hemorrhage of ulcer genesis. If esophagogastroscopy shows expansion of the veins of the esophagus and the place of its transition into the stomach (cardiac), there are no ulcers.

Hemorrhagic erosive gastritis develops against the background of chronic gastritis with the formation of erosions of the gastric mucosa. In some cases, it occurs against the background of long - term use of drugs (steroid and nonsteroidal anti-inflammatory drugs, adrenal cortex hormones). Differential diagnosis is based on the absence of ulcer history and objective signs of peptic ulcer disease. Bleeding in hemorrhagic gastritis has the character of "coffee grounds", there is a black stool. However, unlike ulcerative bleeding, general weakness does not reach the collapse, because bleeding usually does not have a profuse character. The most reliable method of research that allows differentiating this bleeding is fibrogastroscopy, which makes it possible to detect erosion on the stomach mucosa.

Werlhof disease (idiopathic thrombocytopenic purpura) is more common in women at a young age. Unlike gastric ulcer and duodenal ulcer hemorrhage ("spotted disease"), bleeding from mucous membranes (nasal, gingival, etc.) is detected. Characteristic changes in the blood: thrombocytopenia, increased clotting time and bleeding time, violation of blood clot retraction. Unlike peptic ulcer, bleeding in idiopathic thrombocytopenic purpura is not urgent of course and is not accompanied by a collapse of the positive symptoms harness and pinch. Gastrofibroscopy does not detect ulcer in stomach or duodenum.

Pulmonary bleeding is observed in diseases of the heart with the phenomena of stagnation in the small circle of blood circulation, in destructive lung diseases (tuberculosis, abscess, lung cancer, bronchiectasis). Unlike ulcerative, gastrointestinal bleeding, pulmonary cough begins with the release of the first veins of blood in sputum, and then scarlet blood with an admixture of air bubbles, accompanied by severe shortness of breath, cyanosis, no vomiting and melena. X-ray of the chest reveals foci of destruction of lung tissue, lung cancer with decay, increasing the boundaries of the heart.

**Control questions**:

1. What are the causes of gastrointestinal bleeding.

2. Determine the criteria for assessing the severity of gastroduodenal bleeding.

3. What are the main methods of diagnosis of gastroduodenal bleeding.

4. Perform differential diagnosis of various types of gastroduodenal bleeding.

**Tests for self-control Answers:**

Spitting up frothy blood, bright red color, 4

worse when cough is characteristic for:

 1. bleeding ulcers of the stomach

2. tumors of the cardiac

3. Mallory-Weiss syndrome

4. pulmonary hemorrhage

What allows you to determine the source of

gastroduodenal bleeding 5

:

1. x-ray examination of the stomach

2. laparoscopy

3. a nasogastric tube

4. repeated determination of hematocrit and hemoglobin

5.EGDS

Syndrome of Mallory-Weiss is: 3

1. varicose veins of the esophagus and cardia, complicated by bleeding

2. bleeding from mucous membranes on the basis of hemorrhagic vasculitis (disease Randu-Osler)

3. crack in the cardiac department of the stomach with bleeding

4. hemorrhagic erosive gastroduodenitis

Disappearance of pain and the emergence of "melena" under 4

duodenalulcer is characteristic for:

1.pyloroduodenal stenosis

2. the perforation of ulcer

3. malignancy of the ulcer

4. bleeding

5. penetration into the pancreas

For bleeding ulcer of the duodenum is not typical: 2

1. vomiting the color of coffee grounds

2.increased pain in the abdomen

3. the fall in hemoglobin

4. melena

5. the decrease in volume of blood circulation

II. PERFORATED STOMACH ULCER

AND DUODENAL

Perforation – acute violation of the integrity of the wall of the stomach or duodenum.

Perforation occurs in 12-14% of cases of stomach ulcer and duodenal ulcer. Ulcers are more common in men than in women.

**Classification**. Clinically distinguish between:

1. acute penetration into the free abdominal cavity with the formation of widespread peritonitis;

2. perforation with the formation of circumscribed abscesses of the abdominal cavity;

3. atypical perforation in a nearby hollow organs or retroperitoneal cellular spaces space;

4. covered penetration.

**The clinical picture** includes three periods: a) reactive shock - a period of sudden sharp pain, the tension of the sympathoadrenal system, the expressed reaction of the peritoneum; b) imaginary well-being; c) progressive spilled peritonitis.

In the first hours of perforation, there is a sharp "stabbing" pain, characterized by the forced position of the patient on the side, bent, with legs pressed to the abdomen ("fetal position"), bradycardia and hypotension (due to irritation of the vagus). You need to remember about the triad Knigin - Mondor (dagger pain, ulcer history, «wooden» belly). After 2-6 hours, the transition of the chemical (abacterial) phase of peritonitis to bacterial – reduces the pain response, the stomach becomes softer. Subjectively, the patient notes "improvement" and sometimes it can serve as a diagnostic error in the interpretation of clinical symptoms. Especially insidious is the period of imaginary well-being with covered perforation, as pain can completely subside, and only with deep palpation there is rigidity in the upper right quadrant of the abdomen (Ratner-Venner symptom). In the subsequent intoxication progresses, signs of paralytic ileus (abdominal distension) appear. In all periods of the development of perforated ulcer during examination of the abdomen the symptom of Shchetkin-Blumberg is revealed at palpation, and the symptom of Spigarny – at percussion. In perforating ulcers in retroperitoneal tissue, there is a triad of symptoms of retroperitoneal ulcer: pain and rigidity in the lumbar region, pasty skin and thickening of the skin folds in the lumbar region, scoliosis towards the formation of the ulcer. The pattern of the abdomen has long remained calm, and true diagnosis is sometimes possible only after lumbotomy.

The most informative way of diagnosis of perforated ulcer is a review radiography (cluster) of the abdominal cavity, in which free gas is detected in the form of a sickle strip under the right dome of the diaphragm. In the absence of this radiological symptom, in order to establish the diagnosis, a Meyo (introduction of air into the stomach through a probe) or EGDS (with subsequent control review radiography of the abdominal cavity) is used, or diagnostic laparotomy is performed. Perforated ulcer is subject to immediate surgical treatment.

**Differential diagnosis.**

Differential diagnosis should be carried out: with acute appendicitis, acute cholecystitis, acute pancreatitis, hepatic colic, acute violation of mesenteric circulation, myocardial infarction.

Acute appendicitis is characterized initially by moderate pain in the epigastrium, followed by their migration to the right iliac region (a symptom of Kocher-Volkovich). The condition of patients for a long time can remain satisfactory. In the examination of abdominal pain localized in the right iliac region, positive symptoms of Razdolsky, Rousing, Sudkovsky, Karavaeva, Bartome - Michaelson, etc are identified. When fluoroscopy is conducted there is no free gas in the abdominal cavity. In case of doubtful clinical picture the problem is solved in favor of diagnostic laparoscopy.

Acute cholecystitis is more typical for women, overweight, pain is associated with an error in the diet, a history of cholelithiasis can be identified. Characteristic pain in the right hypochondrium, which determines the positive symptoms of Ortner, Murphy, Ker, Zakhar`in, sometimes an enlarged painful gall bladder is palpated. Typical multiple vomiting bile, does not bring relief, which is not typical for perforation of the stomach or duodenum. Ultrasound reveales stones, increase and thickening of the walls of the gallbladder.

Acute pancreatitis-begins as a perforated ulcer with pains in the epigastrium, but they are gradual, growing, do not have a sudden "stabbing pain" in nature, and surrounded. Characterized by multiple, painful vomiting that is not characteristic of perforated ulcers, swelling of the upper part of the abdomen. Symptoms of Kerte, Meyo-Robson, Voskresensky are revealed, with the progression of pancreatic necrosis "color symptoms" can be determined - Cullen, Gray-Turner, Mondor. In ultrasound, the pancreas is enlarged, dense echostructure, free fluid in the gland bag can be detected. In urine – increase of diastase. In doubtful cases one resorts to diagnostic laparoscopy.

Renal colic-characterized by sudden intense pain in the lumbar region with irradiation in the back, groin and genitals, dysuria. The patient is worried, rushing. In contrast, a patient with a perforated ulcer occupies a forced position and lies, pressing his legs to his stomach. Belly of renal colic is often mild, sometimes pseudoperiodicity syndrome is observed, which disappears after novocaine blockade of the spermatic cord at the Lorin-Epstein or paranephral blockade. The urine analysis shows hematuria, ultrasound of the kidney – ureterohydronephrosis, the shade of the stones. Sometimes justified chromatotherapy, intravenous urography. Diagnostic laparoscopy is rarely used.

Acute impairment of mesenteric circulation (cerebral vascular accident) occurs suddenly and sharply, similar to a ruptured ulcer. However, this happens on a soft belly, there is no bradycardia. Patients are restless, tossing from the pain. In history and clinically it is typical to detect atrial fibrillation or, more rarely, other pathologies of the cardiovascular system. With rapidly increasing abdominal distention, a decline and then absence of peristalsis of the intestines, severe intoxication. In the analysis of blood – hyperleucocytosis with a toxic shift. At preservation and increase of a pain syndrome in the first hours diagnostic laparoscopy for the purpose is shown, in-the first – to exclude perforation of hollow body, in-the second – to define a condition of intestines and need of surgical intervention.

Myocardial infarction (abdominal, gastralgic form) is more common in elderly people suffering from coronary heart disease. The general condition is severe. Pulse is frequent, arrhythmia. Low blood pressure. Heart tones are deaf. There is no tension and pain in palpation of the abdomen. On ECG - signs of ischemia and myocardial necrosis. Treatment and monitoring of ECG in the chamber of intensive therapy and resuscitation. Diagnostic laparoscopy is used in very rare cases - with very strong suspicions of a catastrophe in the abdominal cavity (increase in leukocytosis, tension of muscle of the abdominal wall, the presence of free liquid in ultrasound of the abdominal cavity).

**Control questions:**

1. What are the typical symptoms of perforated stomach ulcer and duodenal ulcer.
2. Select the main periods of the clinical course of the perforated ulcer.
3. List the diseases with which to differentiate the perforated ulcer.
4. Specify the instrumental methods used in the diagnosis and differential diagnosis of perforated ulcer.

**Tests for self-control:**

**Answers:**

Perforated ulcer is characterized by: 2

1. belting pain

2. symptom of Spigarny

3. repeated vomiting

4. a sharp abdominal distention

5. symptom of Kocher-Volkovich

In the diagnosis of perforated ulcer is used: 1

1. review radiography of the abdominal cavity

2. intravenous urography

3. x-rays of the gastrointestinal tract with barium

4. angiography

5. novocaine blockade

In the differential diagnosis of perforated ulcer 3

and acute appendicitis the most informative is:

1. blood test

2. a symptom of Schetkin-Blumberg

3. diagnostic laparoscopy

4. finger rectal examination

5. the passage of barium through the intestines

In the clinic of perforated ulcer 6,2,5

the following periods are clasified:

1. hemodynamic disorders

2. imaginary well-being

3. toxic

4. terminal

5. spilled peritonitis

6. shock

III. PYLORODUODENAL STENOSIS

Piloroduodenal stenosis - narrowing of the pyloric part of the stomach or the initial part of the duodenum. This complication develops in 10-40% of patients with peptic ulcer disease. The cause of pyloroduodenal stenosis is more often ulcers of the duodenum, less often pre-pyloric ulcers and ulcers of the pyloric canal. Stenosis of the gatekeeper is one of the 5 complications of gastric ulcer and duodenal ulcer (perforation, penetration, bleeding, stenosis, malignancy).

**Classification**. Depending on the time of occurrence and severity, there are three stages of stenosis:

1. compensated stenosis

2. subcompensated stenosis

3. decompensated stenosis

**Clinical picture**. Patients with pyloroduodenal stenosis complain of weakness, exhaustion, multiple vomiting stagnant gastric contents, which brings temporary relief. They often cause vomiting artificially. In the stage of compensated stenosis, these symptoms are not expressed, patients note only a feeling of overfilling in the stomach, the severity of epigastric. This is accompanied by heartburn, sour belching. In the stage of subcompensated stenosis symptoms increase, burp acquires an unpleasant smell of rotten eggs. Patients are periodically worried about colic pain associated with increased peristalsis of the stomach, weight loss progresses. In the stage of decompensated stenosis, patients are sharply depleted, the skin is dry, the skin fold is thinned. Dehydration and electrolyte losses lead to a serious condition, up to the development of adynamy and clonic convulsions. Vomit masses acquire a fetid character and contain decomposing food masses eaten the day before. A typical symptom in the examination of the abdomen is the "noise of the splash" in the stomach, revealed on an empty stomach. The contours of the large curvature of the stomach are determined significantly below the physiological limits, up to hypogastric. The peristalsis of the stomach auscultation is not listened to (atony of the stomach). There is a small and frequent pulse, decrease arterial pressure, and as a result of violation of water-electrolyte balance – hypokalemia, hypochloremia, metabolic alkalosis, decrease in diuresis. Loss of potassium leads to disruption of cardiac activity, reduce the tone of the vascular wall. In alkalosis in the plasma the level of ionized calcium reduces, resulting in altered neuromuscular excitability, and in severe cases gastrogeniumtetany develops: general convulsions, lockjaw, the fingers of the hands (a symptom of "hands obstetrician" Trousseau), twitching of facial muscles with effleurage in the area of the trunk of the facial nerve (Chvostek symptom). Hypochloremic and hypokalemic alkalosis combined with increasing nitrogen, which aggravates the general condition of patients.

 During the x-ray examination of the stomach with barium, there are phenomena of gastrostasis, delays in the evacuation of barium from the stomach up to 6 hours (compensated stenosis), up to 12-18 hours (subcompensated stenosis) and more than 24 hours (decompensated stenosis).

**Differential diagnosis.**

Differential diagnosis is carried out between stenosis of ulcerative origin and stenosis in cancer of the output part of the stomach. In patients with stenosis of the gatekeeper of ulcer origin, there is a long history of chronic recurrent ulcers, seasonality exacerbations (spring-autumn), a characteristic relationship with food intake – pain: hungry or appearing 15-30 minutes after eating, bearing a daily rhythm, unstable. There may also be anamnetic indications of a previous endoscopic examination of the stomach and duodenum with ulcer detection. In palpation of the left supraclavicular region and finger rectal examination pathological infiltrative formations are not found. Esophagogastroduodenoscopy reveales a chronic ulcer, obstructing distorting the gatekeeper and the duodenum, and biopsy there are no atypical cells.

Unlike ulcerative, stenosis of tumor nature has a shorter history. Attrition comes faster. "Small clinical symptoms" of A.I.Savitsky are revealed: decreased performance, progressive weight loss and depletion, abandonment of food, especially meat products and fish, fatigue and other, pain in contrast to ulcer in the beginning is absent, and then acquires a dull, constant character, not relieved with antispasmodic drugs. Palpation reveales dense, tumor-like formation in the projection of the stomach, sedentary or not shifted. Foci of dissemination in the navel (metastasis Joseph), node in the supraclavicular region on the left (Virchow), in the Douglas Karman (Schnitzler), in the ovary (Krukenberg) can be identified. Metastatic infiltrative foci are detected in liver, spleen and para-aortic area with the help of ultrasound. X-ray of stomach with barium in stenosing cancer of the stomach gives a characteristic picture of the symptom of "hourglass".

 An additional diagnostic step is the endoscopic examination of the stomach with biopsy. At cytological examination of biopsy atypical cells are revealed. These changes are not peculiar to stenosis of ulcer etiology. Often it is very difficult to solve the problem of the nature of pyloroduodenal stenosis (chronic, callous ulcer or cancer) completely. In this case, it is possible to use diagnostic laparoscopy or laparotomy, in which an emergency pathohistological study of the biopsy material is carried out, the operability and the amount of intervention is determined – radical - gastrectomy, gastric resection, or palliative, draining the stomach, operation.

**Control questions:**

1. Give the classification of stenosis of the pylorus.

2. What are the clinical manifestations of pyloroduodenal stenosis according to the stages of its development.

3. List the methods of instrumental and laboratory diagnostics in pyloroduodenal stenosis.

4. Carry out differential diagnostics of stenosis of ulcerative and tumor genesis.

**Tests for self-control**: **Answers:**

The compensated stenosis of the gatekeeper 2

is characterized by:

1. "knife-like" pain after meal

2. dull, aching, pain after meals

3. pain in the lower back

4. constipation

For decompensated stenosis of pylorus is not characteristic: 2,4

1. vomiting of food eaten the day before

2. muscle tension anterior abdominal wall

3. "splashing" in the stomach on an empty stomach

4. jaundice sclera and skin

To diagnose the stenosis of the gatekeeper is *not* used: 1,2,3

1. cholecystography

2. sigmoidoscopy

3. bronchography

4. radiography of the stomach with barium

In the occurrence of the stenosis of the gatekeeper, 4

the main role is played by the disease:

1. acute pancreatitis

2. acute gastritis

3. acute gastroenteritis

4. chronic ulcer of the antral part of the stomach

IV. PENETRATION OF GASTRIC ULCER

Penetration of the ulcer is a complication of the peptic ulcer in the form of the spread of a destructive process from the wall of the stomach or the duodenum into the thickness of the adjacent organ-the head of the pancreas, the hepatic – duodenal ligament, the small gland. Penetration of the ulcer not only possible onto these organs (more often), but also to the liver, gall bladder, transverse colon to form an internal fistula and mesentery of the transverse colon.

**Classification**. In the process of formation of penetration there are three stages: 1. intra-foam; 2. the stage of fibrous adhesions; 3. stage of completed penetration to the adjacent organ.

**The clinical picture** of penetration develops gradually, for a long time. The main feature of the ulcer penetration is a change in the rhythm of pain - it takes a constant character. Moreover, it reflects most often the clinic lesions of the organ in which the ulcer penetrates. So, if the pain is localized over the navel, in the left hypochondrium and is belting, irradiating to the left lumbar region, the ulcer penetrates into the pancreas.

 If the patient performs an x-ray examination of the stomach and duodenum with barium, then a deep "niche" is detected, going beyond the organ. EGDS in case of suspected penetration, as a rule, is not performed, because with the introduction of air into the stomach and an increase in pressure in it, it is possible to separate the area of penetration from the neighboring organ and the occurrence of perforation, which will require immediate surgical treatment. The penetration of the ulcer into the hollow organ, as a rule, leads to the formation of pathological fusion and fistula between the stomach and the transverse colon, duodenum and gallbladder. Clinically, this is accompanied by increased pain syndrome in the projection of the affected organ, the appearance of vomiting with intestinal or bile. X-ray examination with barium or other contrast agent reveals its penetration into the transverse colon through the fistula or the horizontal level of liquid with gas (symptom of aerocholia) in the projection of the gallbladder with barium intake into the gallbladder.

When the ulcer of the duodenum penetrates into the hepatic-duodenal ligament, the appearance of mechanical jaundice is noted due to compression and deformation of the common bile duct, violation of the bile passage into the duodenum. Clinically, this is manifested by increased pain in the right hypochondrium, nausea, vomiting, fever, yellowing of the mucous membranes and skin, dark urine and pale feces. When conducting ultrasound they observe expansion in the diameter of the common bile duct, the change of its contours due to compression of the penetrating ulcer. Penetration of gastric ulcer into the retroperitoneum typically occurs at its location in the "weak" field 12 duodenal ulcer – not covered by peritoneum (the back wall). Clinical symptoms of this complication are characterized by signs of severe purulent-septic process, intoxication (expressed weakness, sweating, high temperature, chills, pain in the lumbar region, anemia, high leukocytosis with a shift to the left, high ESR). Establishing the diagnosis is very difficult - radiography of the stomach and duodenum, ultrasound in dynamics, computer tomography are used.

**Differential diagnosis.**

Differential diagnosis of penetrating ulcer is carried out: with chronic pancreatitis, stomach tumor with germination in the neighboring organs. Chronic pancreatitis is characterized by the connection of pain with the intake of fatty, spicy food, alcohol. The pain is expressed, localized in the projection of the gland, irradiated in the back, wearing a girdle. During exacerbation the pain syndrome rapidly increases, until the pain of shock, in ulcerative process this does not happen: positive symptoms of Kerte, Chukhrienko, Mayo-Robson, Voskresensky, Mondor, Grey-Turner, Cullen. In the blood and urine the high content of amylase and diastase is detected. Ultrasound shows that pancreas is increased in size, changing its echogenicity. In contrast, when the ulcer penetrates into the pancreas, the patient has a prolonged ulcer anamnesis, the pain syndrome is moderate. Pain rhythmical (day, night), associated with the reception of any food, then gradually becomes permanent. As a result of developing secondary pancreatitis, there may be an increase in the level of diastase in the urine. X-ray examination of the stomach and duodenum with barium reveals a deep "niche".

Gastric cancer with invasion into nearby organs, clinically is very difficult to verify. For cancerous lesions of the stomach it is also characteristic to have long-lasting pain syndrome in the epigastric region, the left hypochondrium. The pain is constant, dull, aching, but in contrast to the penetration of the ulcer is not so intense, as a rule it does not have a belting character. In patients, there is a change in the nature of nutrition (refusal from meat food, fish), progressive depletion (cancer cachexia), belching and vomiting rotten.

X-ray examination of the stomach with barium reveals not a deep "niche", but a "filling defect" from the barium depot in it, a break in the folds, the absence of peristalsis in this part of the stomach. EGDS with biopsy confirms the nature of the tumor process (atypical cells), and their absence indicates chronic ulcerative process.

In stomach cancer at palpation a dense, tuberous, sedentary formation in the projection of the stomach is detected. Detection of distant metastases of Virchow, Schnitzler, Krukenberg, in the anterior abdominal wall (navel) also indicates in favor of stomach cancer.

**Control questions:**

1. What are the main types of complications of gastric ulcer and duodenal ulcer.

2. Give the definition of penetrating ulcers.

3. Speak about the clinical picture of penetration.

4. List the examination methods that you can use to confirm penetration.

5. What are the diseases with which it is necessary to differentiate the penetrating ulcer of the stomach or duodenum.

**Tests for self-control: Answers:**

Blunt, aching, tying pain in the 3

lefthypochondrium is characteristic for:

1. acute appendicitis

2. acute pancreatitis

3. chronic pancreatitis

4. perforation of the hollow body

5. ulcer of the duodenum

6. penetration of ulcers in the pancreas

For the diagnosis of penetrating ulcers do not apply: 2,3,4,5

1. radiography of the stomach and duodenum

2. laparoscopy

3. radiography of the skull

4. chest x-ray

5. Endoscopy

6. Ultrasound

Indicate the main clinical signs of ulcer penetration into the pancreas: 3

1. pain when swallowing

2. repeated, debilitating vomiting

3. the pain of a continuing nature, after taking any food, radiating to the lumbar region

4. chest pain

The following radiological signs indicate the penetration of the ulcer: 6

1. defect filling rounded shape in the body of the stomach

2. a small "niche" in the pyloric part of the stomach

3. Kloyber`s blows

4. the crescent-shaped strip of gas under the right dome of the diaphragm

5. gas bubble in stomach fundus

6. deep "niche" beyond the organ.

V. MALIGNANCY

Malignancy of gastric ulcer and duodenal ulcer is a pathological process, which is based on the appearance in the epithelium of ulcerative defects of the foci of cellular proliferation with atypia of the epithelium. This complication is not so rare and ranges from 2 to 35%. The longer the ulcer exists (2-3 years or more), the more proximally it is located, the larger its size (1.5-2 cm or more), the more grounds for suspicion of malignancy. So from chronic," callous" ulcers more than 2 cm in diameter.cancer is formed in more than 10% of cases, and ulcers localized in the cardiac department of the stomach, are malignized in 30-48% of cases.

**Clinical picture.** It is not easy to suspect the transition of the ulcerative process into cancer in patients with peptic ulcer disease. The development of cancer from ulcer is accompanied by a peculiar change of the clinical picture which a careful thoughtful clinician must remember about. First of all the severity of the pain syndrome reduces, which is regarded by the patient as an improvement. Gradually attacks of pain disappear, and pain itself becomes moderate in intensity, but constant. They only slightly increase after a meal. And then the connection of pain with food disappears completely. The cyclicity of the pain syndrome changes according to the time of day, the seasonality of exacerbations (in spring and autumn) also disappears. Heightened or a normal appetite declines, and soon revulsion to food emerges, especially to meat and fish. Quite typical for the transition of ulcers in cancer is the syndrome of "small signs", described by A.I.Savitsky: loss of interest to work, family, environment, causeless (from the point of view of the patient) weakness, fatigue, rapid decline in performance, restless sleep, pallor of the skin. Other symptoms inherent in this process gradually appear: heaviness in the epigastric region, lack of satisfaction from eating, stomach discomfort, unpleasant odor from the mouth, progressive thinning, pallor and earthy complexion.

**Differential diagnosis.**

 Differential diagnosis of ulcers is malignities: chronic anacidic gastritis, gastric cancer.

In chronic gastritis patients note pain in the epigastric region, left hypochondrium, nausea, bad breath, weight loss, weakness. This clinical picture may resemble malignancy of the ulcer. EGDS with biopsy in dynamics against the background of conservative anti-inflammatory therapy is crucial in differential diagnosis. Detection of cancer from the ulcer represents formidableand often insurmountable difficulties. It is unlikely that it is possible to clinically establish a clear line when the ulcerative process ends and cancer arises from the ulcer.

The differential diagnostic algorithm should include the following points:

1. thorough collection of anamnesis, with the clarification of the duration of the disease, treatment methods and their effectiveness;

2. clarification of the complaints and change of their character (the syndrome of "small signs" A.I.Savitsky); examination: generalbloodanalysis, biochemicalbloodanalysis (anemia, hypoproteinemia), a moderate shift of leukocyte formula to the left, accelerated ESR, the analysis of the washings of the stomach on atypical cells;

3. instrumental examination.

 Radiography (with barium) of the stomach can detect, in the presence of a" niche", an edge "filling defect", rigidity of the adjacent mucosa, smoothness of the folds, the absence of peristalsis, serrated edge of the "niche".

Very important and extremely necessary is EGDS in dynamics with mandatory taking of biopsy samples from suspicious places (at least 6-8 sites) for histological examination. But the capabilities of these methods should not be exaggerated – they also give a certain percentage of errors. Only the totality of all clinical symptoms and examination data allows to diagnose. This is certainly the main importance of the orientation and focus of the doctor.

**Control questions:**

1. List the complications of gastric ulcer and duodenal ulcer.

2. What are the main clinical symptoms of peptic ulcer disease.

3. Indicate stomach ulcers, which are often malignities.

4. What are the clinical signs of malignancy.

5. List the diagnostic methods that are most informative in the differential diagnosis of cancer and ulcer.

**Tests for self-control: Answers:**

The main signs of malignization are all but: 1,2,4

1. of Horner's syndrome

2. triads of Knigin-Mondor

3. syndrome of "small signs"

4. Courvoisier syndrome

Following examination techniques should be 4

used for suspected malignancy ulcers:

1. sputum analysis

2. saliva analysis

3. analysis of bile

4. analysis of gastric washings on atypical cells

From the above methods are the most informative in4

the diagnosis of cancer of the ulcer:

1. radiography of the stomach

2. x-ray of the skull

3. fluoroscopy of the lungs

4. Endoscopy with biopsy

Clinical symptoms of malignancy ulcers are: 1,2,3

1. pain in the right hypochondrium

2. headaches

3. pain in calf muscles when walking

4. dull, aching, persistent, not associated with food intake epigastric

5. causeless weakness, malaise, adynamy, aversion to meat, weight loss

6. heaviness in the epigastric region, belching rotten, unpleasant smell from the mouth.

**The theme of lessons: "STOMACH CANCER"**

**The purpose of the lesson**: to learn at the level of reproduction by memory classification, clinical manifestations, methods of laboratory and instrumental diagnostics of stomach cancer, the method of identifying "small" signs of the disease, examination, palpation, percussion of the abdominal cavity, differential diagnosis of this severe disease.

By the lesson the student should:

1. Know the classification and forms of stomach cancer, ways of metastasis and early clinical signs of the disease.

2. Understand the etiology and pathogenesis of gastric cancer, complications, methods of instrumental and laboratory diagnostics.

3. Be able to correctly collect anamnesis, paying attention to early signs of the disease, to identify early symptoms of the disease, to assess the clinical manifestations of the disease, radiological and other methods of instrumental diagnostics.

4. Know differential diagnosis: chronic gastritis, gastric ulcer, polyposis, benign tumors, tuberculosis, actinomycosis.

**Theoretical reference.**

 Stomach cancer ranks first or one of the first places among malignant neoplasms in frequency and mortality in different countries. Men suffer from stomach cancer 3 times more often than women. Most often found in the age of 40-60 years. Classification. In the macroscopic picture they distinguish: 1. Limited growing cancers (exophytic forms): a) polypoid; b) flat, plaque-like or mushroom-like with superficial ulceration. 2. Infiltrative growing cancers (endophytic): a) ulcerative - infiltrative; b) diffuse cancers. 3. Mixed forms-saucer-shaped cancer. On histological structure distinguish between: 1) adenoma; 2) medullary carcinoma; 3) scirrhus (fibrotic cancer); 4) colloidal or slimy, undifferentiated carcinoma.

In stages:

I – the clearly demarcated tumor in the mucous membrane, does not extend beyond the submucosa (carcinoma in situ). There are no regional metastases.

II. – a large tumor that grows in the muscle layer, but not germinating serous cover, and not soldered to the adjacent organs. Stomach's moving. A single moving metastases to regional lymph nodes next.

III art. - the tumor is of a considerable size, sprouts through the entire thickness of the stomach wall, grows into neighboring organs, sharply limits the mobility of the stomach, without metastases. Same tumor or of a smaller size with multiple regional metastases.

Article IV – tumor of any size with the presence of distant metastases.

 There is an international classification system T, N, M.

T – primary tumor; N – regional lymph nodes; M – distant metastases.

T0-primary tumor is not identified.

T1-tumor infiltrates the stomach wall to the submucosa.

T2-tumor infiltrates the stomach wall to the submucosal tunic.

T3-tumor sprouts serous membrane without invasion into adjacent structures.

T4-tumor extends to neighboring structures.

N0-no evidence of metastatic disease.

N1-there are metastases in the gastric lymph nodes no further than 3 cm from the edge of the primary tumor.

 N2 - there is metastasis in the gastric lymph nodes at a distance of more than 3 cm from the edge of the primary tumor or in the lymph nodes located along the left gastric, common hepatic, splenic or ventricular artery.

M0-no distant metastases.

M1-there are distant metastases.

**The clinical picture** of gastric cancer in the early period of the disease is characterized by the syndrome of "small signs" (AI Savitsky): causeless general weakness, reduced ability to work, fatigue, unmotivated persistent decrease in appetite, loss of physiological sense of satisfaction from eating, accompanied by a feeling of overfilling of the stomach, causeless progressive weight loss of the patient, loss of joy of life, interest to others, to work. With the progression of the process-painful constant pain in the epigastrium, vomiting after eating, sometimes "coffee grounds", constipation, cachexia. In cancer of the cardia – the symptoms of obstruction of passage of food, regurgitation. In cancer of the output department clinic stenosis appears, worries foul-smelling eructation /"addle egg". The spread of the tumor to the transverse colon or jejunum can lead to growing symptoms of intestinal obstruction. The growth of the tumor to the gates of the liver and compression of the biliary tract leads to a rapidly increasing jaundice. The spread of the tumor on the peritoneum is accompanied by the development of ascites, manifested by an increase in the abdomen. Patients have a kind of pale skin color with a grayish-earthy shade, a few protruding facial features. The skin becomes dry, easy to assemble into folds. Body weight is significantly reduced. Palpation may reveal a dense, nodular, not painful tumor, which corresponds to the late stages of the disease. Detection of ascites, tumor metastases in the left supraclavicular region (Virchov metastasis), in the navel (Joseph metastasis), Douglas space (Schnitzler metastasis), ovary (Krukenberg metastasis) indicates the fourth, inoperable stage of the disease. In peripheral blood hypochromic anemia, accelerated ESR, is determined. In the gastric juice, achlorhydria, the presence of lactic acid, mucus, atypical cells; in the stool there is occult blood. Fluoroscopy of the stomach is a direct symptom ectoparasitosis tumor is a filling defect, and if endophytic growth find the rigidity of the gastric wall, malignant topography, breakage of mucosal folds and peristalsis, concentric narrowing of the lumen of the stomach. When fibrogastroscopy visible protruding in the lumen of the stomach polypoid tumor or ulcer, surrounded by an elevated shaft with necrotic masses on the bottom. With endophytic growth-the rigidity of the stomach wall and folds, the absence of peristalsis, narrowing of the stomach lumen, purulent overlay on the mucosa. Gastrobiopsy allows to verify the cancer.

**Differential diagnosis.**

Differential diagnosis should be carried out: with chronic gastritis, gastric ulcer and duodenal ulcer, gastric polyposis, benign gastric diseases, tuberculosis, actinomycosis.

Gastritis, accompanied by leuco-and lymphocytic infiltration of the entire stomach wall during prolonged course, sometimes presents great difficulties in differential diagnosis. At the same time, radiologically, there is often a restructuring of the mucosal relief, accompanied by a change in the course of folds, their deformation and rigidity. Such rigid gastritis, most often developing in the antral part of the stomach, can even cause a filling defect. Of great importance in difference of chronic gastritis and stomach cancer repeat endoscopic and radiographic studies on the background of anti-inflammatory therapy, as well as in combination endoscopy and targeted biopsies.

Special difficulties also arise in the diagnosis of chronic hypertrophic gastritis – Menetrier's disease, tumor-induced gastritis. The clinical picture of the disease of Menetries has no specific signs. The most valuable method of clinical examination of the patient is endoscopic, revealing in Menetrier's disease hyperemic edematous mucosa with swollen broad folds, protruding into the cavity of the stomach throughout or more often on a limited area of the body or the antral part of the stomach. Biopsy followed by histological examination allows to reject cancer.

 Gastric ulcer and duodenal ulcer, unlike gastric cancer, is characterized by the duration of the disease. When a cancerous process history short. Peptic ulcer disease is characterized by a certain cyclicity of the course with exacerbations in spring and autumn. Pain in stomach ulcers, as a rule, is acute and associated with eating (early occurs after 0.5-1 hour, later – after 2-3 hours), and hungry and nocturnal pain characteristic of duodenal ulcer. Appetite in patients, unlike patients suffering from gastric cancer, is preserved or increased, but patients abstain from eating because of pain. Vomiting ulcer comes on top of the pain attack, stenosis – out attack of pain. Unlike stomach cancer in the period of exacerbation of peptic ulcer disease, there is resistance, sometimes the tension of the muscles of the abdominal wall. The change of regularity and cyclicity of pain in patients with gastric ulcer disease, as well as the more dull nature of pain, change in the general condition of the patient (the appearance of general weakness, exhaustion, loss of appetite, i.e. the emergence of the syndrome of "small signs" A.I.Savitsky), are characteristic signs of malignancy of the ulcer. Unlike stomach cancer, in the study of gastric juice in patients with peptic ulcer disease, usually an increase in the content of free hydrochloric acid is found. Detection of a "niche" or "contrast spot" during x-ray examination allows speaking in the affirmative way about peptic ulcer disease. However, the detection of a niche that does not go beyond the contours of the stomach, a large shaft of infiltration around the ulcer, a symptom of loss of peristalsis and impaired mucosal relief around it indicates the transformation of the ulcer into cancer.

Fibrogastroscopic study, especially in combination with biopsy facilitates the diagnosis. In cases where differentiation of ulcerative or neoplastic process in the stomach is extremely difficult, the final stage of the study should be laparoscopy or even diagnostic laparotomy.

Polyposis of the stomach in some patients is asymptomatic. Most often, there are non-localized pain in the epigastrium, decreased appetite, nausea, which does not contribute to a clear diagnosis. The role of x-ray and fibrogastroscopic research is indispensable. When conducting radiography of the stomach, the definition of a rounded filling defect with clear contours indicates in favor of the polyp, while in cancer, along with a filling defect, there is a malignant relief, violation of peristalsis, rupture of the mucous folds. Gastroscopy allows you to see the polyp and determine its size. The color of the polyp is more red than the surrounding mucosa, the folds do not converge, but bypass it. If you suspect a malignancy make a biopsy with subsequent histological examination.

Benign tumors of the stomach (leiomyomas, neurinoma, lipomas) may cause a number of complications (bleeding, obstruction), which are characterized by a certain clinical picture. Most often, these tumors are determined radiologically and endoscopically. The main x-ray symptoms of benign tumors of the stomach is the presence of a filling defect with clear contours, at the border of which the folds are cut off and there is no peristalsis. In some cases, it is possible to detect the pressing of the contour of the stomach, which has smooth edges with the preservation of folds or flattening them in this place. Determining the nature of the tumor is difficult not only for clinical and radiological examination, but also during the operation. Therefore, only histological examination makes the diagnosis clear.

 Tuberculosis of the stomach is one of the rare diseases. Lifetime diagnosis is extremely difficult due to the lack of characteristic of clinical picture. Has a value of anamnesis (earlier transferred tuberculosis, is on account or cleared), the detection of tubercle bacilli in gastric juice on an empty stomach or in the washing waters. When making x-ray of the stomach in 77% cases tuberculosis ulcers, exophytic growth of education are found. When making EGDS one detects tuberculosis ulcers, with sharp undercut edges and yellow-brown bottom, small tuberculosis erosion, scattered throughout the mucosa. Directed gastrobiopsy promotes more accurate differentiation of gastric cancer and tuberculosis.

Actinomycosis of the stomach (loss of ray fungus) clinically resembles a malignant lesion of the stomach process. Definition of epigastric in the development of the tumor, soldered with surrounding tissues, the formation on the skin multiple convoluted, deep fistulas with a slight purulent discharge in the form of seeds – suggests actinomycosis. The study of tissue and the detection of mycelium of actinomycetes confirm the diagnosis.

**Control questions:**

1. Give clinical and histological classification of gastric cancer.

2. Ways of metastasis in gastric cancer.

3. What are the ways to diagnose stomach cancer.

4. Speak about what is included in the concept of the syndrome of "small signs".

**Tests for self-monitoring: Answers:**

Schnitzler Metastasis localized: 2

1. in the liver

2. in recto-vesical fold

3. in the ovaries

4. between the legs of sternocleidomastoid muscle

5. in the navel area,

The Krukenberg metastasis is:3

1. in recto-vesical fold

2. in the ovaries

3. between the legs of sternocleidomastoid muscle

4. in the navel area

5. in the liver

Virchov`s metastasis is detected: 4

1. in the liver

2. in recto-vesical fold

3. in the ovaries

4. between the legs of sternocleidomastoid muscle

5. in lungs

Delay of evacuation from a stomach is characteristic 1

for localization of cancer:

1. in the pyloric

2. in the cardiac department

3. in the body of the stomach

4. at the greater curvature

5. on a small curvature

The earliest diagnosis of gastric cancer provides: 1

1. Endoscopy with biopsy

2. the search for "syndrome small signs of"

3. radiography of the stomach

4. the review radiography abdominal cavity

**The theme of lessons:"ACUTE INTESTINAL OBSTRUCTION»**

**Purpose of the lesson:** to learn at the level of reproduction in memory the classification, pathogenesis, clinical signs of acute intestinal impassability, methods of its diagnostics; to master and fix techniques of collection of typical complaints, identify symptoms, appointments of examinations, evaluation of paraclinical diagnostic methods (x-ray and other data), differential diagnosis.

By the lesson the student should:

1. Know the classification of acute intestinal obstruction.

2. Understand the etiology and pathogenesis, clinical manifestations in various types of intestinal obstruction.

3. Be able to properly collect complaints and anamnesis, to identify symptoms, characteristic of acute intestinal obstruction; outline additional laboratory and instrumental examinations and to properly evaluate their results.

4. Know the differential diagnosis of acute intestinal obstruction: acute appendicitis, acute pancreatitis, acute thrombosis of mesenteric vessels, perforated ulcer of the stomach and duodenal ulcer, renal colic.

**Theoretical reference.**

Intestinal obstruction - a disease characterized by partial or full violation of movement of the content in the digestive tract.

Acute intestinal obstruction is a group of acute surgical diseases of the abdominal cavity, requiring urgent diagnostic and therapeutic measures.

**Classification.** Distinguish between dynamic and mechanical intestinal obstruction. In turn, mechanical intestinal obstruction can be: obturation, strangulation and mixed, high and low small bowel, colonic. Dynamic obstruction intestines can be spastic and paralytic.

**The clinical picture** of acute mechanical intestinal obstruction includes: abdominal pain, cramping, nausea, repeated vomiting, abdominal distension and asymmetry of the abdomen, violation of the discharge of gases and stool. Depending on the cause and the level of obstruction, these symptoms may vary. The rapid development of pain attack and multiple painful vomiting are the beginning of acute intestinal obstruction of high localization. Conversely, low colonic obstruction begins with violation of passage of stool and gases, then bloating and pain join. Vomiting is thus a late and poor prognostic sign.

Dynamic spastic obstruction occurs relatively rare and spasm develops in a specific part of the intestine, leading to narrowing of its lumen. Clinically, this form is characterized by moderately expressed pain syndrom, bloating, nausea, vomiting, a delay of stool. There may be uneven bloating. Stomach is usually soft, at a palpation it is possible to probe spasmed part of the intestine. Peristaltic intestinal noises are heard. In general the patient's condition is relatively satisfactory, there is no impairement on the side of the cardiovascular system. Blood and urine tests are within normal limits.

Paralytic intestinal obstruction develops as a result of paresis or paralysis of the intestinal muscles in the early postoperative period as a result of chemical or bacterial influence on the intestine, with peritonitis.

Clinically, it manifests itself gradually increasing constant abdominal pain, nausea, vomiting, delay of gases and stool. The abdomen is usually evenly swollen, the anterior abdominal wall is soft, but painful under palpation. May be determined by the symptom of Shchetkin - Blumberg. Pulse and breathing are accelerated. In blood leukocytosis are determined, and in severe cases there is shift of the leucoformula to the left. When making general x-ray of the abdomen Kloyber`s bowls and diffuse flatulence intestine's can be determined. Both forms do not require surgical treatment and usually they are cured through conservative measures.

In the clinical course of acute mechanical intestinal obstruction it is accepted to allocate three stages:

In stage I (hemodynamic disorders or «ileus cry») – is dominated by pain and common disorders of the body. Patient is restless, there are: cramping abdominal pain, repeated vomiting, tachycardia, unstable blood pressure.

Language dry, lined with white coating. Belly swollen, most often asymmetric, in the act of breathing in is involved irregularly, gases do not depart, no stool. One can visually determine severe peristalsis (symptom of Shlange), asymmetry of the stomach, bloated bowel loop and the bloat on it (symptom of Val`). When shaking the anterior abdominal wall the "noise of the splash" is revealed (symptom of Sklyarov). At percussion over bloated intestinal loops tympanitis with metallic hue is noted (symptom of Kivul`). "Sound of a falling drop" may be auscultated (symptom of Spasokukotsky). At node formation or inversion of the sigmoid colon at a palpation devastation in the right iliac region is determined (symptom of Shimon - Dans.) A finger rectal examination is mandatory, with which the gaping of the anus and an empty ampoule of the rectum can be determined (symptom ofObukhov hospital). It is impossible to introduce in siphon enema more than 500 ml of water (symptom of Tsege-Manteuffel). Analyses of peripheral blood and urine in stage I do not change significantly. Radiologically bloated intestinal loops, arches, Kloyber`s bowls, symptom of Casey are determined (transverse the striations of the small intestine - "the skeleton of a herring").

Stage II (intoxication) is characterized by further disorders of blood circulation in the intestinal wall, general disorders of hemodynamics, main types of metabolism (protein, water-electrolyte, vitamin), increased signs of intoxication. There are constant pain, vomiting, auscultation – the weakening or absence of peristaltic intestinal noise, weakness. Then the pain decreases because of the damage of nerve endings in the intestinal wall (symptom of "imaginary well-being"), vomiting is less abundant, but with a rotten smell, thirst. Face pained. Skin of earthy-gray color. Pulse quickened, weakened filling on peripheral arteries, arterial pressure progressively decreases, sometimes there is a collapse. Besides the above mentioned symptoms observed in stage I, one begins to determine the symptom of Shchetkin-Blumberg, percussion reveales free liquid in sloping areas of the abdomen. Radiologically the picture is characterized by multiple Kloyber`s bowls. In the blood leukocytosis increases with a toxic shift of the leukocyte formula to the left.

Stage III (terminal). In this stage, a very pronounced phenomenon of intoxications is observed. The patient's condition is extremely serious, arrhythmia increases, confusion or loss of consciousness. Facial features are sharp (Hippocratic face), the patient is sluggish, adynamic, not contact, indifferent to his own state and others. Hemodynamic indices were sharply disturbed, blood pressure is low, pulse frequent, weak filling and voltages. Vomiting acquires a fecal odor. Picture of the abdomen is the classic picture of diffuse of peritonitis. Fully there are no intestinal peristalsis noises (a symptom of "grave silence"). In the blood – high leukocytosis, a marked shift in leucoformula to the side of young forms, toxic granularity is detected. The level of urea and creatinine increases, signs of acute hepatic-renal failure.

**Differential diagnosis.**

Acute intestinal obstruction should be differentiated from acute appendicitis, acute pancreatitis, acute mesenteric thrombosis vessels, perforated stomach ulcer and duodenal ulcer, renal colic.

With acute appendicitis, as with intestinal obstruction, the beginning acute. The common symptom is abdominal pain. However, with appendicitis pain is constant, characterized by a symptom of its migration (symptom of Koher-Volkovich), and in intestinal obstruction pain is cramping and corresponds to the site of pain occurrence of an obstacle in the gut. In acute appendicitis at the beginning of the disease there is no bloating, unable to leave flatus and stool, as in intestinal obstruction, these symptoms are leading sign of disease. In acute appendicitis positive symptoms of Rovsing, Karavaeva, Obraztsov, Sitkovsky, Voskresensky, Bartome-Michelson are revealed, which will be absent at intestinal obstruction. Radiological findings in acute appendicitis is not the clobber bowl characteristic of the acute intestinal disease will be revealed obstructions.

Acute pancreatitis is characterized by intolerable, belting pain in the epigastric region, while in intestinal obstruction the pain is cramp-like. A common symptom is bloating. However, if in pancreatitis, there is swelling in the upper abdomen, in acute intestinal obstruction bloating occurs in various departments, depending on the level and type of obstacle there is an asymmetry of the abdomen. With acute pancreatitis, vomiting is painful, often with an admixture of bile, and in intestinal obstruction in the first hours it is abundant, bringing short-term relief, and then acquires a fecal smell. At acute pancreatitis positive symptoms of Mayo-Robson, Carte, Voskresensky are defined, and there are no symptoms: "noise of splash" (Sklyarov), Val`, Shlange, Kivul`. There is an increase in blood amylase level, urine diastase, which is not typical for acute intestinal obstruction. At the general x-ray examination of the abdominal cavity, a decrease of excursions of the diaphragm is found, duodenostasis and unfolded horseshoe of duodenal, unlike Kloyber`s bowls characteristic intestinal obstructions. Ultrasound reveals a damage of the echogenicity of the structure of pancreas, change its size, presence of liquid in the omental bursa, the abdominal cavity.

In acute thrombosis of mesenteric vessels, too, there is strong, acute pain, bloating, vomiting. The pain is permanent, colic, character is without clear localization. Acute thrombosis of mesenteric vessels more often occurs in elderly and senile patients age, suffering from cardiac arrhythmias, atherosclerosis, cardiac defects. There is a liquid stool with an admixture of blood, whereas in acute intestinal obstruction stool and gases are detained. Vomiting is rare, sometimes mixed with "coffee grounds", and intestinal obstruction vomiting is repeated, with a feces smell. Auscultation in acute mesenteric thrombosis reveals the inhibition of peristalsis, while with intestinal obstruction in the initial stage the peristalsis is strengthened. When the general x-ray study of the abdominal cavity in thrombosis of mesenteric vessels marked distension of the intestinal loops, free liquid in sloping areas of the abdomen, and the acute intestinal obstruction Kloyber`s bowls, "arch". Under ultrasound and laparoscopy liquid is determined in the free abdominal cavity.

For perforative ulcer of the stomach and duodenum the following is characteristic: a sharp sudden beginning of "stabbing-like" pain, spreading immediately all over the abdomen, the anterior abdominal wall is very tense – "wooden" belly (remember the triad of Knigin-Mondor). Often occurs in patients with a peptic ulcer history. Similar pains in the initial attack of acute intestinal obstruction do not happen. Vomiting at perforative ulcer is rare, occurs reflexively, has no fecal smell, as under acute intestinal obstruction. In the first minutes and hours perforations in the patient's state of shock, marked pallor of the skin cover, cold sweat, bradycardia. Belly pulled by the jet muscle tension, and intestinal obstruction, on the contrary, there is abdominal distention. Anterior abdominal wall when the perforated ulcer is sharply strained - "wooden" belly, with percussion marked disappearance hepatic dullness (symptom of Spigarny), sharply positive symptom of Schetkin-Blumberg, which is not typical for acute intestinal obstructions. At the observation x-ray examination of the abdominal cavity in the perforated ulcer is determined by the free gas under the right cupula of diaphragm. And for acute intestinal obstruction characterized by the presence of Kloyber`s bowls, intestinal «arcs».

Renal colic - begins suddenly with severe pain attacks. At this tension in the muscles of the anterior abdominal wall occurs, sometimes – symptoms of false peritonitis, moderate bloating, vomiting, which is similar to acute intestinal obstruction. But under renal colic pain is constant, radiates to groin, thigh, scrotum, relieved by antispasmodics, and intestinal obstruction pain is contractible, gases do not depart, no stool. With renal colic a positive symptom of Pasternatsky is detected, in acute intestinal obstruction - symptoms of Val`, Shlange, Kivyl`, "splashing" (symptom of Sklyarov). With the general x-ray of abdominal cavity in patients with renal colic in the abdomen a pathology is not revealed, with acute intestinal obstruction - multiple Kloyber`s bowls, «arches». In urine analysis in patients with renal colic there are fresh erythrocytes, leukocytes, cylinders, with intestinal obstruction data there is no such a change. Ultrasound of the kidneys reveals sings of pyeloectasia, the presence of concrements in pyelocaliceal system, hydronephrosis, which testify in favor of urological pathology.

**Control question:**

1. What are the main causes of acute intestinal obstruction.

2. Speak about the pathogenesis of peritonitis in this disease.

3. Specify the difference between obstructive and strangulation intestinal obstruction.

4. List the methods of x-ray examination of the abdomen cavities used in the diagnosis of acute intestinal obstructions.

5. What are the main clinical stages of acute intestinal obstructions.

6. List the diseases with which to differentiate acute intestinal obstruction.

**Tests for self-monitoring: Answers:**

The following can provoke the development of acute intestinal obstruction: 4

1. Weakness of the abdominal muscles

2. Alcohol abuse

3. Eating fatty and spicy food

4. Eating a large amount of foods rich in fiber

5. Psychological trauma

All types of acute intestinal obstruction are characterized by: 3

1. Intense abdominal pain

2. A sharp increase in peristalsis

3. Persistent constipation and gas

4. Asymmetry of the abdomen

5. The tension of the abdominal muscles

Low colonic obstruction is characterized by all except: 5

1. Gradual increase in symptoms

2. Abdominal distention

3. Appearance of the clobber bowl

4. Chair delays

5. Fast (during the day) dehydration

The main symptom of obstructive intestinal obstruction 2

is:

1. Constant abdominal pain

2. Cramping abdominal pain

3. Vomiting color "coffee grounds»

4. Abdominal distention

5. Melena

When suspecting acute intestinal obstruction 1

first of all they make:

1. Survey x-ray examination of abdominal organs

2. Study of passage of barium through the intestines

3. Esophagogastroduodenoscopy

4. Laparoscopy

5. Biochemical blood test

**The theme of lessons**: **"PERITONITIS»**

**The purpose of the lesson:** to learn at the level of reproduction in memory etiology, pathogenesis, classification, clinical manifestations, examination methods and differential diagnosis of various forms of peritonitis.

**By the lesson the student should:**

1. Know the classification, clinical symptoms of peritonitis, methods of laboratory and instrumental diagnostics.

2. Understand etiology, mechanism and stages of peritonitis in dependence on the source that caused it.

3. Be able to find out anamnesis, collect and evaluate complaints, determine clinical symptoms, to evaluate the data of laboratory and instrumental study.

4. Perform differential diagnosis of peritonitis: acute pancreatitis, urolithiasis (renal colic), acute intestinal obstruction, acute violation of the mesenteric of blood circulation, complicated by gastric ulcer and the duodenum, impaired ectopic pregnancy, hemorrhagic diathesis, poisoning by salts of heavy metals.

**Theoretical reference.**

Peritonitis - acute or chronic inflammation of the peritoneum, accompanied by local or general symptoms of the disease, violations of the functions of the major organs and body systems. Peritonitis in 99% of cases is a complication of acute surgical diseases of the abdominal cavity, that is secondary. Spontaneous, primary peritonitis (1%), is a consequence of hematogenous translocation of microorganisms into the peritoneum of other organs. Chronic peritonitis, basically, has the specific nature of tuberculous, parasitic, cancers, ascites, peritonitis.

**Classification**. Acute peritonitis, caused by the nature of it the causes may be appendicular, gastric, intestinal, bile, urinary, pancreatic, enzymatic, genital.

By the nature of the exudate they differentiate: serous, fibrinous, purulent, putrefactive, hemorrhagic, and mixed.

On the extent of the lesion: circumscribed (abscess) and diffuse undifferentiated, localized within anatomical limits areas-local (one anatomical area), common (several areas) and general short (struck by the whole peritoneum).

**Clinical picture.** In the course of acute peritonitis three clinical stages are distinguished:

1. jet (the first 12-24 hours) –maximum local manifestations of the reaction of sympathoadrenal system of the body (especially the pain);

2. toxic (24-72 hours) – subsiding local manifestations, prevalence of common symptoms of intoxication;

3.terminal (over 72 hours) – severe intoxication on the verge decompensation of the vital functions of the body.

It is believed that the peritoneal cover of a person is approximately equal to skin area. Therefore, developing in the abdominal cavity, pyo-inflammatory process quickly leads to flooding of the organism with toxins of exogenous and endogenous origin. In the aetiopathogenesis, regardless of the cause of peritonitis, intestinal coli and pathogenic cocci dominate. Increasing intoxication leads to damage of vital organs and development of multi-organ failure: initially, hepatic renal, cardiovascular and then lung and terminal stage damage of the central nervous system. Diagnosing is usually not difficult. The closest reason is defined (the original source of peritonitis), and then peritoneal symptoms are detected: 1. abdominal pain, 2. muscle tension of the abdominal walls and a positive symptom of Schetkin-Blumberg, 3. nausea and vomiting, 4. increase in body temperature, etc.

While in the reactive stage pain syndrome and protective tension of the abdominal muscles prevail, in the toxic stage these symptoms are less pronounced, but tachycardia, nausea, vomiting, intestinal paresis and bloating, febrile increase. In terminal stage of peritonitis there are symptoms of toxic damage to CNS - consciousness is oppressed, facial features are sharp. The pulse deficit on the background of tachycardia, decrease in blood pressure. Abdomen is much distended, missing peristalsis of the intestine (symptom of "deathly silence"). In laboratory blood tests a rising leucocytosis is revealed, which is then can be replaced by leukopenia, indicating the depletion of protective forces of the body, there is a significant toxic shift of leucoformula leftward. Hypo- and dysproteinemia also indicate exhaustion of immuno-protective forces of the organism. In the toxic and terminal stages of peritonitis the indicators of residual nitrogen increase. Water-electrolyte losses of the body lead to thickening of the blood, noted on the changes coagulograms. Increasing intoxication affects kidney function – there is oligo-anuria, changes in the urine of a toxic nature.

Instrumental methods of research do not have an independent value, but only complement the basic clinical picture: on ECG – signs of toxic injury of the myocardium; radiologically – the Kloyber`s bowls, the high standing of the diaphragm dome and the concomitant effusion in pleural cavity; ultrasound of abdominal organs cavities (according to indications) and free abdominal cavity for detection of liquids. Diagnostic laparoscopy is indicated in cases of uncertainty in the diagnosis. The main method of treatment of peritonitis is surgical.

Laparotomy, revision of abdominal cavity organs and elimination of the focus that caused peritonitis, sanitation and drainage of the abdominal cavities, nasogastrointestinal intubation. In pre- and postoperative period intensive infusion detoxification, anti-inflammatory, antibacterial therapy is conducted, in

diffuse peritonitis – extracorporeal detoxification with available methods (blood UFOs, hemosorption, plasmapheresis, lymphosorption, etc.). The correction of the cardiovascular, pulmonary, hepatic-renal failure is conducted.

In the toxic and terminal stages of peritonitis symptoms are clearly expressed, therefore, the need to differentiate peritonitis arises rarely. In the reactive stage, a short time, the commonality of a number of symptoms defines necessity of carrying out differential diagnosis with diseases of both inflammatory and non-inflammatory nature.

**Differential diagnosis.**

Differential diagnosis of peritonitis is carried out with urolithiasis disease, acute pancreatitis, acute intestinal obstruction, complicated gastric ulcer and duodenal ulcer, ectopic pregnancy, hemorrhagic diathesis, poisoning salts of heavy metals.

Urolithiasis (renal colic) is manifested by severe pain, nausea, vomiting, intestinal paresis and falsely positive symptom of Shchetkin-Blumberg (pseudoperitoneal syndrome). However paroxysmal nature of pain with typical irradiation in the thigh, groin, perineum, dysuria, the absence of inflammatory blood reactions, changes in urine tests( erythrocyte), ultrasound of kidneys can help in establishing diagnosis.

In acute pancreatitis, you can identify a number of symptoms characteristic of peritonitis. But with pancreatitis, before the development of a destructive complicated course, there is protective muscle tension, pain is girdling, accompanied by painful vomiting, temperature at the beginning of the disease remains normal. In the survey symptoms of Kerte, Voskresensky, Mayo-Robson, Cullen, Mondor are defined. Blood amylase and urine diastase studies help, because they increase in acute pancreatitis and do not change with peritonitis. At ultrasound changes in the structure of the echo of the pancreas, effusion in the omental bursa are revealed.

Acute mechanical intestinal obstruction is clinically different from peritonitis only in the early stages. Pain initially is strong (the so called "ileus cry"), is cramp-like, and with peritonitis is permanent. Peristalsis in acute intestinal obstruction in the beginning is reinforced, identified the symptoms of Val`, Shlange, Kivyl`, "splashing" of Sklyarov. X-ray reveales the Kloyber`s bowls, a symptom of "organ pipes", the passage of barium is slow. In a consequence in the absence of adequate treatment, necrosis and perforation of the intestine joins peritonitis.

In acute gastric ulcer and duodenal ulcer, especially large callous, penetrative ulcers a rather intense pain in the abdomen, a protective voltage muscles can be observed. However, unlike peritonitis, there is small moderate pain after eating, water or milk, paresis of the intestine is not observed, the temperature remains normal, changes in laboratory blood values are absent or minimal. Endoscopy and radiography of the stomach (with barium) confirm the presence of gastric ulcer or the duodenum (a "niche" symptom).Acute impairment of mesenteric blood circulation occurs suddenly, without any prior inflammatory reactions and characterized initially by a strong pain in the stomach. Pay attention to expressed pulse arrhythmia, history of heart disease rheumatic or post-infarction etiology. In blood tests hyperleukocytosis is noted, a sharp shift to the left leucoformula, coagulogram changes. In the subsequent peritoneal phenomena joins. Essential help is rendered by early carrying out of diagnostic laparoscopies.

With the ectopic pregnancy bleeding in abdominal cavity occurs and severe pain reaction is accompanied by tachycardia, drop in blood pressure, all the way to collapse. In the beginning the symptom of Shchetkin-Blumberg is absent, abdominal wall remains soft, there is a characteristic symptom of "a roly-poly doll", i.e. the impossibility of examination of the patient lying on his back due to increased pain. The history reveals delay in the menstrual cycle. To establish the diagnosis one makes ultrasound, puncture of the posterior vaginal vault, in which blood is detected. Hemorrhagic diathesis (Shenlein-Henoch's disease) manifests itself mainly in young age. There are numerous hemorrhages under the skin, mucous membranes and serous membranes, including peritoneum. As a result, there is a pain syndrome. However, there is no history of inflammatory disease. In blood tests thrombocytopenia and no inflammatory changes are observed. Laparoscopy helps in doubtful cases.

In cases of poisoning by salts of heavy metals severe paroxysmal abdominal pain and even protective tension abdominal wall can be observed. However, there is no nausea, vomiting, the symptom of Schetkin-Blumberg's is negative. Contact with industrial toxic substances is defined. Body temperature is normal. There is no inflammatory reaction in the blood test.

**Control question:**

1. Name the classification of peritonitis

2. List the clinical symptoms of peritonitis, depending on the stage of its course.

3. What are the laboratory and instrumental methods of research, used for differential diagnosis of peritonitis.

4. List the diseases with which it is necessary to differentiate peritonitis.

**Tests for self-monitoring:**

**Answers:**

For diffuse peritonitis is characteristic: 4

1. girdle pain

2. repeated uncontrollable vomiting

3. frequent painful urination

4. a symptom of Schetkin-Blumberg

5. melena

For the terminal stage of general (diffuse) peritonitis 2

is not characteristic:

1. General extremely serious condition

2. strengthening of peristalsis

3. severe intoxication

4. «Hippocrates face»

5. abdominal distention

Peritonitis is a complication of all diseases except: 5

1. acute appendicitis

2. acute intestinal obstruction

3. impaired ectopic pregnancy

4. acute pancreatitis

5. stenosis major duodenal papilla

To diagnose the abscess of Douglas’ space 3

the best method is:

1. Abdominal ultrasound

2. diagnostic laparoscopy

3. finger examination of the rectum

4. radiography of the abdomen

5. clinical blood analysis

**The theme of lessons: "ECHINOCOCCOSIS OF THE LIVER"**

**The purpose of the lesson:** to learn at the level of reproduction in memory etiology and pathogenesis, clinical symptoms, methods of examination of patients, develop a differential diagnosis of echinococcosis.

 **By the lesson the student should:**

1. Know the clinical signs of liver echinococcosis, methods of clinical, laboratory and instrumental examination, clinic complications.

2. Understand the biological cycle of parasite development, clinical symptoms at different stages of the disease and its complications.

3. Be able to collect complaints and anamnesis, to identify objective signs of the disease, to assess the data of laboratory and instrumental studies.

4. Know differential diagnosis with liver cancer, cirrhosis, cholecystitis, hydronephrosis.

**Theoretical reference.**

Classification. There are two forms of echinococcosis of the liver: cystic (hydatidosis) and alveolar. Cystic form of the disease represents a bubble stage of development of Echinococcusgranulosus worm. The causative agent of alveolar Echinococcus is the cestode Echinococcusmultilocularus. Clinical classification of echinococcosis (L.V.Melnikov) distinguishes: the initial (asymptomatic) stage, the second stage – clinical manifestations, the third stage - complications.

**Clinical picture**. The development of echinococcus is very slow, it lasts for many years. With hydatidosis form a cyct is formed, which increases and includes daughter and granddaughter bubbles. With alveolar echinococcosis of the liver, multiple separate cysts are formed, germinating into the liver tissue, having exogenous growth and resembling a malignant tumor.

The clinical picture of hydatid cyst of the liver is slow and is determined by the stages of the disease.

The first stage (initial, asymptomatic) lasts from the moment of getting the hexacanth into the liver to the first clinical manifestations of the disease. The duration of it is various, and sometimes takes several years. The cyst is located deep in the liver, is small in size, so the identification is very difficult. The disease proceeds secretly and is found, as a rule, accidentally. Nevertheless, in children there is a slowdown in physical development, nervousness, increased allergic sensitivity.

The second stage-clinical manifestation is characterized by various symptoms of the disease. Cyst reaches a significant size, marked by its rapid increase, which leads to overgrowth of the Glisson`s capsule. Patients note dull pain, feeling of heaviness, pressure, tightness in the right hypochondrium, epigastric region or in the lower part of the chest. Often this is accompanied by weakness, malaise, decreased appetite, weight loss, shortness of breath, periodically observed allergic reactions (in the form of urticaria, diarrhea), nausea, vomiting. An increase in the size of the liver, often its right departments or all sizes with multiple cysts is revealed. Sometimes protrusion of the abdominal wall, the deformation of the rib arc and ribs like a hump are defined. Liver palpation dense on its surface detected formation of hemispherical shape. Less often by the symptom of fluctuation is defined. In some cases, when knocking over the cyst, a symptom of "hydatid fremitus" is detected. With alveolar echinococcosis in the stage of clinical manifestations, liver enlargement is determined, a very dense formation is detected – a node (a symptom of Lyubimov). Patients express discomfort. Patients are bothered by pressure in the epigastric region, disappearing appetite, have an allergic reaction such as skin itching, rash, sometimes there is intermittent jaundice. In the study of blood eosinophilia (12-25%), latex agglutination reaction with echinococcal antigen positive are marked. Ultrasound of the liver defines cystic masses in the hepatic parenchyma.

The third stage - complications are characterized by various complications of echinococcosis. The most common of them is suppuration of the cyst (15-34%) - patients suddenly have severe pain in the cyst. At palpation of the anterior abdominal wall sharp pain in the right hypochondrium is noted. The temperature rises to 40 º C, is hectic. The phenomenon of intoxication quickly increases, accompanied by chills and heavy sweat. In the future, a septic condition may develop. It is possible to break the ulcer in the abdominal, thoracic or retroperitoneal space. In rare cases, suppurated cyst empties into one of the neighboring organs or outside. A very serious complication is the breakthrough of the echinococcal cyst into the abdominal cavity, which can cause anaphylactic shock and its contamination. When the breakthrough of the cyst occurs in the biliary tract, an acute attack of pain occurs in the right hypochondrium as in gallstone disease, cholangitis, accompanied by mechanical jaundice. Complications of alveolar hydatid disease can be jaundice, germination in neighboring organs, the diaphragm and the lungs, the formation of biliary - bronchial fistulas, germination in the gate of liver. Alveolar echinococcus like cancer gives metastases, that is, it is possible to transfer embryos to other organs. Diagnosis of echinococcosis of liver is based on clinical and laboratory data, x-ray and special research methods. Along with eosinophilia and ESR, immunological studies, latex agglutination, indirect hemagglutination reaction and double diffusion in agar gel should be given importance. Computed tomography and ultrasound have great diagnostic value.

**Differential diagnosis.**

Differential diagnosis of echinococcosis of liver is based on a comprehensive examination of the patient and is carried out with diseases such as cirrhosis, liver tumors primary and secondary, cystic liver lesions (hepatoma, hemangioma, alveococcosis, dermoid and epithelial cysts), amoebic and bacillary abscesses.

Differential diagnosis with liver cirrhosis is difficult. This disease is accompanied by an increase in its presence of jaundice, ascites or disease occurs without obvious manifestations. The diagnosis uses data from biochemical studies of blood, ultrasound, laparoscopy.

 It is necessary to exclude an increase in the liver at the hummous stage of syphilis. However, with liver syphilis, there are pronounced gastrointestinal phenomena: digestive disorders, weight loss, pain in the liver, back, shoulder. The liver in syphilis, unlike Echinococcus, is irregularly bumpy due to gumms. Other signs of tertiary syphilis (Wasserman reaction) allow to exclude this disease.

Liver cancer is a disease that occurs quite often. Differential diagnosis between liver cancer and echinococcosis is difficult. Primary liver cancer often develops against the background of cirrhosis. When liver cancer is noted: a sharp decrease in body weight, pain in the right hypochondrium, nausea, vomiting and diarrhea, jaundice, anemia is often observed. Finally, in liver cancer, ascites are determined, the liver is enlarged, irregularly bumpy, sharply painful.

Secondary liver cancer is metastatic from other organs. Cancer cells enter the hepatic artery, the portal vein. More often metastases get to the liver from the stomach. Stomach cancer sometimes goes straight to the liver by ligaments and lymphatic ways.

 Differential diagnosis of hydatidios liver echinococcosis and alveolar echinococcosis is based on the clinical picture characteristic of alveococcosis - the presence of stony node density in the liver, frequent complications of jaundice, portal hypertension, the formation of bile fistulas. Chronic calculous cholecystitis and dropsy of the gallbladder are excluded by the course of the disease, its development, clinical manifestations, the results of the examination (ultrasound). Absence of symptoms of hydatid disease – eosinophilia, a negative serological samples – exclude hydatid liver disease. These ultrasound findings confirm the presence of nodules in the gallbladder. In some cases, hydronephrosis simulates the picture of echinococcosis, but in this case, the results of cystoscopy, intravenous urography, ultrasound of the kidneys exclude liver damage. Thus, the differential diagnosis presents certain difficulties, but can be quite carried out.

In case of unclear diagnosis, laparoscopy followed by biopsy should be performed. In very doubtful cases it is advisable to do an exploratory laparotomy.

**Control questions**:

1. Specify the path of invasion of the parasite into the human liver.

2. List the stages of development of hydatid cyst of the liver.

3. List the diseases with which differential diagnosis of hydatid cyst of the liver should be carried out.

4. What are the most informative methods of diagnosis of liver echinococcosis.

 **Tests for self-control:Answers:**

 For differential diagnosis in a patient of 35 3,4

years of age with a liquid formulation in the liver, it is necessary to perform: 1.laparoscopy

2. cavography

3. scintigraphy of the liver

4. Ultrasound

5. aortography

The Patient, 42 years, is concerned about moderate 3

pain in the right hypochondrium, increasing in an upright

position. Similar symptoms are noted for several years.

Independently the patient revealed tumor formation in the

right half of a stomach. Select the condition that you should consider first:

1. cholecystitis

2. liver cancer

3. liver cyst

4. a cyst of the pancreas

5. cyst of the right kidney

With suspected liver echinococcosis, the following 3,4,5

laboratory tests should be used to confirm the diagnosis:

1. biochemical analysis of blood

2. general blood test

3. the reaction latex-agglutination with the antigen

 4. indirect hemagglutination reaction

5. the reaction of Katsoni

6. Wasserman reaction

Choose complications arising from liver echinococcosis: 1,5,6

1. suppuration of the liver cyst

2. intra-abdominal bleeding

3. empyema of pleura

4. pericarditis

5. rupture of the parasitic cyst

6. mechanical jaundice

In a patient, 27 years, a cystic formation of a rounded shape 7x8 cm is revealed during the medical examination in ultrasound examination of the liver. Specify additional

methods of examination, which should be used for final

diagnosis: 1,4,7

1. computed tomography

2. fluoroscopy of the stomach

3. rheohepatography

4. scintigraphy of the liver

5. splenoportography

6. needle biopsy of the liver 7. laparoscopy

**The theme of lessons: "DISEASES OF THE COLON"**

**The purpose of the lesson:** to learn at the level of reproduction in memory clinic, diagnosis of diseases of the colon, master their differential diagnosis.

**By the lesson the student should:**

1. Know etiology, pathogenesis, clinic, laboratory and instrumental diagnosis of ulcerative colitis, diverticulitis of the colon, polyposis and colon cancer.

2. Be able to collect complaints and anamnesis, to identify the symptoms of these diseases.

3. Evaluate the data of instrumental studies.

4. Know the differential diagnosis between these diseases.

**Theoretical reference.**

NONSPECIFIC ULCERATIVE COLITIS

Nonspecific ulcerative colitis is a chronic ulcerative process with the development of ulcero-necrotic changes in the mucosa of the rectum and colon. The disease is associated with sensitization of the body and the development of autoimmune reaction.

**Classification.**

I. the length of the lesions:

1. distal colitis (proctitis or proctosigmoiditis);

2. left-sided colitis

3. total colitis

II. Severity of tide:

1. easy

2. average of gravity

3. heavy

III. Form of the disease:

1. acute

2. lightning fast (usually fatal)

3. chronic recurrent

4. continuous (with adequate treatment, exacerbation of more than 6 months)

IV. Phase of the disease:

1. exacerbation

2. remission

V. Complications:

1. acute toxic dilatation of colon

2. perforation of the colon

3. massive intestinal bleeding

4. colon cancer

**Clinical picture**. Acute (fulminant) form is characterized by diarrhea (up to 40 times a day) with the release of blood and mucus, sometimes of pus, severe pain around the abdomen, tenesmus, high fever. The patient's condition is severe. Lethality in this form reaches 20%. Chronic recurrent form is characterized by a change of periods of exacerbations and remissions, with periods of remissions can reach several years. With chronic continuous form the non-specific ulcerative ulcerative colitis having begun acutely, without remission, slowly, gradually progresses.

 Any form of ulcerative colitis is characterized by the presence of anemia. On examination of the patient attention is drawn to enlargement of the liver. Severe process is accompanied by hypoalbuminemia, hyperbeta and hypergamma-globulinemia. Dehydration and hypokalemia are noted. Instrumental methods of diagnostics: sigmoidoscopy, barium enema, colonoscopy.

DIVERTICULA AND DIVERTICULAR DISEASES OF COLON

Diverticula and diverticulosis of the colon. The disease usually occurs in patients older than 40 years. Most often diverticula are located in the sigmoid colon and the left half of the colon.

**Classification.**

1. Diverticulum of the colon without clinical manifestations

2. Diverticulum with clinical manifestations

3. Diverticulitis with complicated course:

a) diverticulitis

b) perforation

c) bleeding

g) intestinal obstruction

d) internal or (rarely) external intestinal fistulas

**Clinical picture.** With diverticulitis pain in the abdomen, unstable stool, decreased appetite, nausea are noted. Palpation of the abdomen in the affected area is painful. The temperature can be subfebrile. In blood – leukocytosis. With perforation of the diverticulum a picture of peritonitis develops. Other complications of diverticulitis are: abscess, phlegmon retroperitoneal space, internal fistulas, adhesive disease and intestinal bleeding. Instrumental diagnostics: barium enema, colonoscopy.

POLYPS AND POLYPOSIS OF THE COLON

Among all proctological patients polyps are detected at 10 - 12% of cases. Men get sick 2-3 times more often than women.

Classification.

1. On prevalence:

a) single

b) multiple

c) diffuse

2. According to the morphological characteristics:

a) glandular

b) glandular-villous

c) villous

d) hyperplastic

e) juvenile

f) fibrous

g) pseudopolyps

**Clinical picture**. Single polyps sometimes proceed asymptomatically or cause complaints of patients on blood and mucus from the rectum, abdominal pain, constipation, diarrhea, intestinal discomfort. These symptoms are not pathognomonic for polyps, so to identify them, it is necessary to use: finger examination of the rectum, rectoromanoscopy, colonoscopy, irrigoscopy. Polyps biopsy is necessary to determine the histological structure of polyps, the presence or absence of malignancy.

COLON CANCER

Usually affects people between the ages of 50 and 70 years.

**Classification**:

 Character growth:

1. exophytic

2. endophytic

3. saucer-shaped

Stage of development:

Stage 1 - the tumor is localized in the mucous or submucous layer. No metastases. Stage 2: A. the tumor occupies less than half-circle, does not go beyond the intestinal wall. No metastases. B. Tumor of the same size with single metastases in the nearest lymph nodes.

Stage 3: A. the tumor occupies more than half-circle of the intestine, sprouts its entire wall or adjacent peritoneum, without regional metastases B. Tumor of any size in the presence of multiple metastases in the regional lymph nodes

Stage 4 - a large tumor that grows into neighboring organs with multiple metastases, or any tumor with distant metastases.

International classification TNM

T – primary tumor

 Tis – carcinoma in situ

T1 – tumor invades the submucosa

T2 – tumor invades into the muscular layer

T3 – tumor invades subserous layer

T4 is a direct tumor invasion to adjacent organs or germination of visceral peritoneum

N – regional lymph nodes

N0 – metastases detected

N1 – there are metastases in 1-3 lymph nodes

N2 – metastasis in 4 or more lymph nodes

M – distant metastasis

M0 – no distant metastasis

M1 – there are distant metastases

**Clinical picture.** Depending on the localization of the tumor, its size, form of growth and the presence of complications, the following forms of clinical course of colon cancer are defined: toxico-anemic, enterocolitis, dyspeptic, obturation, pseudoinflammatory and tumor-like. When examining the patient one should attach great importance to dyspeptic phenomena, complaints of dull abdominal pain, intestinal disorders. Pay attention to the pallor of the skin, weight loss. Finger examination of the rectum is necessary to establish the presence of metastases in the pelvic tissue. Rectoromanoscopy, colonoscopy allow you to determine the location of the tumor and take a biopsy. Barium enema colonoscopy supplements the data of the study.

**Differential diagnosis of diseases of the colon.** The clinical picture of diseases of the colon, such as ulcerative colitis, diverticulitis, polyps and colon cancer are characterized by pathological secretions.

Non-specific ulcerative colitis, unlike diverticulum, is manifested by an increase in body temperature, expressed by intoxication during the exacerbation. Rectoromanoscopy detects visible swelling and bleeding of the mucous membrane of the colon, in the lumen of the intestine – mucus, pus, blood. Ulcerative colitis is a precancerous disease. Cancer occurs in 40% of patients in 10-20 years from the onset of the disease. Colonoscopy with biopsy allows to make a definitive differential diagnosis.

Polyposis of the colon is manifested by similar symptoms with diverticulitis, but unlike them can be accompanied by constipation. Some forms of polyps get malignized very often (to 100%). These biopsies allow to establish the final diagnosis.

Differential diagnostic signs of colon diseases are presented in the table.

|  |  |
| --- | --- |
| *Diseases* | *Signs* |
| *Radiologic* | *Endoscopic* | *Pathological discharge* |
| Diverticulosis |  Rounded, oval-shaped protrusions have a cervix, body, the asymmetry of  colonic ridges, pathological segmentation, spasm, saw-tooth contour are noted | Spasm, rough, high, frequent folds in the form of deepening, mucous membrane in the neck of the diverticulum round shape, with a complication in the circle of edema, hyperemia | Bleeding, rarely massive |
| A tumor of the colon | Short segment, narrowing of the lumen, the intestine near the tumor is not changed, the filling is defected | Narrowing, rigidity, violation of folds in the area of destruction, near the tumor mucosa is not changed | More often multiple, rarely abundant |
| Nonspecific ulcerative colitis | Pseudodiverticula are of sawtooth shape, evenly-granular relief of the mucous membrane, a double loop of the gut, pipes tubiform narrowing | Contact bleeding, lack of vascular pattern, edema, mucosal hyperemia, pseudopolyps, numerous ulcers | Bloody-purulent discharge, mucus |
| Polyps | Multiple defects reminiscent of cellular structure  | Different sizes and colors of formation, sometimes on the leg | Mucus, sometimes blood |

**Control questions:**

1. What are the main clinical signs of ulcerative colitis.

2. Specify clinical signs of diverticulitis.

3. List the main clinical features of polyposis of the colon.

4. What are the main instrumental methods of diagnosis of colon cancer.

5. What are the instrumental methods of diagnosis of diverticulitis.

 6. Specify methods of diagnosis of diseases of the colon, which are currently the most informative.

**Tests for self-control: Answers:**

 Nonspecific ulcerative colitis should be differentiated 5

from the following diseases:

1) dysentery;

2) rectal cancer;

3) prostatitis;

4) Crohn's disease.

 Choose the right combination of answers:

1) 1,2,3

2) 2,3

3) 3,4

4) 1,3,4

5) 1,2,4

To complications of diverticular disease do not belong: 5

1. diverticulitis

2. bleeding

3. perforation

4. fistula

5. malignization

Main clinical manifestations of recto-sigmoid1,2,3

colon cancer are:

1. the clinical picture of intestinal obstruction

2. bleeding

3.  tenesmus

4. weight loss

5. pain during defecation

Note the methods which are the most reliable in the 3,5

diagnosis of colon cancer:

1. laparoscopy

2. selective angiography

3. sigmoidoscopy

4. scanning of the liver

5. colonoscopy with biopsy

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