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THE TRAINING MANUAL

FOR PREPARING FOR PRACTICAL LESSONS

ON FACULTY SURGERY

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**Theme of the lesson: "Hernia"**

**1. The purpose of the lesson**:

a) to acquaint students with modern concepts of the pathogenesis of abdominal hernias, the frequency and occurrence in the etiology of dependence on sex, age, profession

b) study the clinical manifestations of different types of external hernia, their complications, differential diagnosis:

c) teach the clinical study of patients with various types of hernias

d) to teach to assess the condition of patients complicated with (strangulated) hernia e) to determine indications for surgical treatment;

e) to choose the correct method of surgery;

g) to acquaint students with the specifics of managing patients in the postoperative period

2. **To the lesson the student must:** from the course of normal and topographic anatomy, the structure and topography of the anterior abdominal wall, the structure of the inguinal and femoral canals, the white line of the abdomen, the umbilical region, the anatomy of the small and large intestines, the types of operations used in the treatment of hernias;

from the course of general surgery: a clinic of acute inflammation with lymphadenitis, lymphangitis, thrombophlebitis, questions of asepsis and antiseptics

from the course of specialty surgery: the concept of "hernia of the stomach" and the basic elements of hernia, etiology, pathogenesis of hernia, classification, clinical picture of uncomplicated and strangulated hernia differential diagnosis of oblique and direct inguinal, femoral congenital and acquired hernia; the stages of inguinal hernia development, the process of lowering the testicle, the methods of surgical intervention depending on the type of hernia features of operations in children, with congenital and sliding hernia. Tactics of the surgeon with strangulated hernia, features of surgery, right intestinal resection, assessment of viability of the intestine. Management of postoperative complication period, rare forms of hernia

**3. The occupation must be understood:**

 the mechanism of elastic and feces infringements, violations of water-salt metabolism in the body with strangulated hernia, the basic principles of surgical treatment, the main stages of the operation, complications.

**4. You need to be able to:**

correctly collect anamnesis and complaints of patients with hernias. Describe the location, the size of the hernial protrusion. To find out whether there were infringements or inflammations of a hernia in the past. To examine the patient: examination, palpation and auscultation of hernial protrusion. Carry out a differential diagnosis with lymphadenitis hydrocele varicocele, varicose veins and other diseases.

**5. Theoretical reference.**

Hernia is the exit of internal organs covered by the peritoneum through natural or artificial pathological openings into adjacent cavities or under the skin. If the organs that are not covered by the parietal peritoneum are projected under the skin or outward, this pathology is called the event (subcutaneous or full) or false hernia.

**Classification**

1. In the place of formation, the hernia is divided into external and internal. To the outer belong: inguinal, femoral, umbilical, hernia belly, lumbar, sciatic, perineal, postoperative and ventral.

2. By the etiology hernia may be congenital and acquired

3. In the clinical picture, there are: correct, partially irreparable, complicated and uncomplicated.

Complications are infringement and inflammation (phlegmon of the hernial sac), koprostasis, neoplasm of the hernia.

In the pathogenesis of acquired hernias, the primary role is played by a combination of predisposing and producing causes, it is very important in pathogenesis to increase intra-abdominal pressure. Elements of redheads are called: hernial gates, hernial sac, hernial contents. If one of the elements of the hernial sac has a wall of the urinary bladder, the blind and rarely sigmoid colon is called a sliding hernia.

Clinical picture.

Uncomplicated hernias are characterized by: moderate pain of the area of ​​protrusion, especially strengthening discomfort during physical exertion. There is also a positive symptom of a "cough push".

 Physical examination of patients spend lying and standing.

In case of the most common complication this infringement appears, there is a strong pain in the area of ​​the hernial protrusion and in the abdomen, irreparability and tension in the previously herniated hernia, the absence of the symptom which is called the "cough push" clinic of acute intestinal obstruction. Laboratory and instrumental diagnostics with hernias does not have independent value, but only helps to diagnose either a complication or a disease.

**Differential diagnostics**

Inguinal hernia should be differentiated from

1. Hydrocele, in which there is also a tumor-like formation. But it arises and grows gradually over time and does not change in the prone position (with a correctable hernia it disappears), has a dense consistence. There is no indication of a physical load in the anamnesis, the symptom of a "cough push" is negative.

2. Inguinal lymphadenitis, in which a history of inflammatory processes, mainly on the lower limbs. Palpable dense painful formation is limited from the outer opening of the inguinal canal, the skin above it is often hyperemic, the overall body temperature rises. The blood test shows leukocytosis, an increase in the rate of erythrocyte sedimentation, but there are no such changes in patients with uncomplicated hernias.

3. Varicocele, occurs more often on the left, in adolescents. At palpation "grapes" widened veins are defined, located in the course of the spermatic cord. Varicocele is sometimes combined with the manifestation of proteinuria, microhematuria.

The femoral is located below the ligamentous ligament, more often the hernia is found in women, it should be differentiated with:

1. Benign tumors (lipomas, fibromas) and metastases of malignant neoplasms, in which the volumetric is dense, has clear boundaries, painless, does not enter the abdominal cavity, the hernial gates are not determined. In order to diagnose or exclude tumors of the small pelvis, a study of the rectum, uterus

2. Varicose veins of the lower extremities, in which there is a significant expansion of the large saphenous vein in the area of ​​its mouth (oval fossa). But varicose veins are characterized by a bluish skin color above the protrusion, no symptom of a "cough push", varicose veins widening in the distal part of the leg.

3. Tuberculosis "stitching", which differs from femoral hernia in the characteristic clinical picture of spinal tuberculosis, is the deformation of the spine (kyphosis), radiologic changes in the shape of the affected vertebrae, narrowing of the intervertebral fissure, positive tuberculin test.

Hernia belly and umbilical differentiate

1. The preperitoneal lipoma, in which the tumor formation has clear boundaries, is densely elastic, irreparable, there are no hernial gates.

2. Metastases of gastric cancer of implantation in the abdominal wall and navel. To exclude oncological pathology, esophagogastroduodenoscopy, x-ray of the stomach with barium, and ultrasound examination of the abdominal cavity are performed.

Postoperative ventral hernias occur in places previously performed surgical interventions and depending on the location may be middle (upper and lower), lateral (upper, lower, left and right). Postoperative hernias are formed due to prolonged tamponade and drainage of the wound or its suppuration. In the place of postoperative scar the protrusion gradually develops, which increases over time, becomes multi-chambered and unrecoverable due to the adhesive process.

Treatment of hernias.

Planned hernia surgery with plastic hernia gates according to the type of hernia. When infringing emergency surgical treatment.

**Tests for homework:**

1. The contents of the hernial sac can be anything except:

 a) small intestine

 b) gaster

 c) pancreas

 d) liver

 e) bladder

2. For the sliding hernia one of the walls of the hernial sac is:

а) bladder

 b) stuffing-box

 c) gaster

 d) kidney

 e) small intestine

 3. For unstrangulated hernia the correct treatment will be:

а) immediate operation

 b) dynamic observation

 c) antibiotic therapy

 d) laparoscopy

 e) all higher named

4. For differential diagnosis of inguinal hernia and hydrocele of testicular membranes is indicated:

а) X-Ray

 b) digital rectal examination

 c) US (ultrasound)

 d) diaphanoscopy

 e) all answers are incorrect

5. For the phlegmon of the hernial sac operation begins with:

а) dissection of phlegmon

 b) puncture of the hernial sac

 c) isolation of the hernial sac from surrounding tissues

 d) median laparotomy

 e) operation of the two accesses

6. Patients who has strangulated hernia and myocardial infarction are shown:

а) emergency operation

 b) observation, cold on the stomach

 c) introduction of antispasmodics

 d) Trendelenburg position

 e) invagination of hernia

7. Two loops of intestine in the hernial sac. What type of the hernial strangulation is it?

а) elastic

 b) retrograde

 c) fecal

 d) Richter’s

 e) combinated

8. The strangulated loop of intestine was found in the hernia sac during the operation. How to assess the viability of this loop?

а) colour of the intestine

 b) presence of intestinal peristalsis

 c) pulsation of mesenteric arteries

 d) all answers are incorrect

 e) all answers are correct

9. Traditional method of surgical treatment of the straight inguinal hernia:

а) abdominoplasty with prosthesis

 b) Bassini operation

 c) herniotomy of Mayo

 d) hernioplasty of Liechtenstein

 e) operation of Postempskii

10. For the sliding hernia one of the walls of the hernial sac often meets:

а) bladder

 b) rectum

 c) gaster

 d) stuffing-box

**The theme of lessons:"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 occur, similar on clinic, diseases.

**To the lesson the student must:**

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

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

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. Clinic is not always typical and depends on the nature of the inflammatory process, its duration, reactivity the body of the patient. The disease has its own characteristics in the manifestations in children, pregnant women, elderly people.

**Classification.**

According to the classification proposed by Kolesov V.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 call it "chameleon-like disease". Acute appendicitis usually begins suddenly, among 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), worse 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 of 80-90 beats/min. Blood pressure is not changed. Tongue is wet, slightly overlaid with a whitish bloom, the abdomen is not swollen, the anterior abdominal wall is soft, involved in breathing, but is painful at palpation in the right iliac area. Positive symptoms of: Sudkovsky, Rousing, Bartome-Michelson.

With 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 of 90-100 beats/min. Tongue coated white bloom. At palpation muscle tension and sharp pain in the right iliac area. 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 38,5-39,0°С , pulse 100-120 beats/min, tongue 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

be sure to have the value of laboratory evidence 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 increases 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 they move 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 the stomach feet (fetal position). In the early hours bradycardia (50-55 beats/min), then the tachycardia are determined. Blood pressure drops to 90/40 mm.Hg.art. Tongue is dry, covered with white bloom. 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). Sharply positive symptom of Shchetkin - Blumberg's are determined all over the stomach. 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 the 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 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`s bowls, missing gas bubble stomach. The patient must be urgently operated.

Acute cholecystitis often resembles a picture of acute appendicitis, also starting with pain in the upper abdomen. This is possible when high, obstructive, location, vermiform appendix, or pregnant, when the process moves upwards, as well as at low the location of the bottom of the gallbladder – "hanging the 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 fatty foods, 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 are located here. Acute cholecystitis occurs more often 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 scapula. 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, with palpation of the anterior abdominal wall morbidity and muscle tension in the right upper quadrant are observed, which often can be detected pasty consistency the seal is the bottom of the 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 revealed leukocytosis with a shift of leucoformula the left, high ESR, increasing the level of bilirubin (which does not happen with appendicitis). At ultrasound: stones in the gallbladder, layering, and other signs lesions of the gallbladder wall are found.

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

The pain syndrome accompanied by severe diarrhea disorders in the form of nausea and repeated, not bringing relief, vomiting’s. The condition of patients progressively deteriorates: the skin of the face is pale 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. Define positive symptoms of Voskresensky, Kerte, Mayo-Robson, Schetkin-Blumberg, Cullen, Mondor, Gray-Turner. Notes dyspnea, tachycardia, decreased blood pressure are noted.

Laboratory examination of the blood revealed 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.

When ultrasound revealed characteristic signs of acute pancreatitis, often –the 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 there is the pain is cramping in nature, nausea, vomiting, delayed divergences of gases and chairs. 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 find mucus with blood - a symptom of " raspberry jelly».

Acute intestinal obstruction in adults is usually preceded by violation of the diet, for example – receive a 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 complain 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. Intestinal obstruction is characteristic asymmetric distension of the abdomen, stool and gas retention. Are positive symptoms of Val`, Shlange, Sklyarov (splashing), Spasokukotsky, Obukhov hospital. When the overview x-ray abdominal cavity is conducted Klowber`s bowls are found.

Renal colic. Characteristic of right-sided renal colic is a sharp lower back pain irradiating to the right groin area, restless behavior of the patient, frequent urination with cutting and pain, small portions mixed with blood. Under palpation - pain on the course of the ureter. Positive symptom of Pasternatsky. Symptoms of peritoneal irritation do not happen. In analysis urine - protein and fresh red blood cells. Radiography of the kidneys and ureters – the shade of the stones. At cystochromoscopy is delayed or does no allocation indigo carmine. Ultrasound: stones and symptoms of kidney hypertensions are found.

Ectopic pregnancy in contrast to acute appendicitis characterized by strong, cutting pain in the lower abdomen above the bosom, accompanied by dizziness, weakness, nausea, vomiting, short-term fainting. There is a delay of monthly, 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. 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 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 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 reveals an inflammatory tumor appendages, which is closely related to the uterus. Positive is determined Promptov`s symptom is pain when moving the cervix during vaginal or rectal examination. Can be defined positive symptom Zhindrinsky– reducing pain in right iliac region when the patient's position changes (from lying in sitting position).

а) **List of issues for practical lesson:**

 Determination of «Acute abdomen » and «Acute appendicitis»

 Classification of acute appendicitis

 The features of the location of the appendix, the structure of its walls

 Causes of acute appendicitis

 Disease clinic of acute appendicitis: features of the beginning and course of the disease.

 Base symptoms of acute appendicitis (Koher-Volkovich’s, Sitkovskii’s, Voskresensky’s, Rovzing’s, Razdolskii’s, Karavaev’s, Bartome – Mihelson’s, Obrazcov’s, Shetkin – Blumberg’s and etc. symptoms).

 Features of the course of acute appendicitis in children, the elderly, pregnant .

 Differential diagnostic of acute appendicitis with :

 perforated ulcer of the stomach or duodenum;

 acute gastritis;

 acute cholecystitis;

 acute pancreatitis;

 right-sided renal colic ;

 ectopic pregnancy ;

 acute intestinal obstruction.

 Role of laparoscopy and US in the differential diagnoctics of acute appendicitis.

 Complications of acute appendicitis (peritonitis, appendicular infiltrate, abdominal abscesses , abscesses of pelvis, pylephlebitis).

 Medical tactics at the prehospital stage in patients with a clinic of an acute abdomen (acute appendicitis).

 Methods of examination in patients with suspected acute appendicitis.

 Methods of treatment patient with acute appendicitis.

b) **Homework:**

 Make the table or charts of:

 features of structure and location of appendix;

 classification of acute appendicitis;

 methods of examination in patient with acute appendicitis;

 differential diagnostics;

 complications of acute appendicitis;

 methods of surgical treatment.

c) **Theme of essay for performance at the classroom:**

1. Features of the course of acute appendicitis in children.

2. Features of the course of acute appendicitis in the elderly.

3. Features of the course of acute appendicitis in pregnant.

4. Clinic and diagnostics of acute appendicitis with retro calculus.

**Tests for homework:**

1. Acute appendicitis does not have this symptom:

а) Rovzing’s

 b) Voskresensky’s

 c) Murphy’s

 d) Obrazcov’s

 e) Bartome – Mihelson’s

2. Peritoneal symptom of acute appendicitis is:

а) Voskresensky’s

 b) Shetkin – Blumberg’s

 c) Razdolskii’s

 d) all named symptoms

 e) all answers are incorrect

3. Acute appendicitis is differentiated with all diseases except:

а) paradontitis

 b) acute pancreatitis

 c) acute adnexitis

 d) acute gastroenteritis

 e) right-sided renal colic

4. Clinic of acute appendicitis is the same as:

а) salpingitis

 b) acute cholecystitis

 c) ectopic pregnancy

 d) any of this diseases

5. It is not used in diagnostics of acute appendicitis:

а) palpation of abdominal wall

 b) general blood analysis

 c) digital rectal examination

 d) irrigoscopy

 e) vaginal examination

6. Contraindication for emergency appendectomy :

а) appendicular infiltrate

 b) myocardial infracion

 c) second half of pregnancy

 d) hemorrhagic diathesis

 e) diffuse peritonitis

7. Typical complications of acute appendicitis are all except:

а) appendicular infiltrate

 b) periapendicular abscess

 c) local peritonitis

 d) diffuse peritonitis

 e) mechanical jaundice

8. This method is used for diagnostics of acute appendicitis:

а) laparoscopy

 b) general blood analysis

 c) rectal examination

 d) termography

 e) all named answers

9. The phlegmonous appendicitis does not have this symptom:

а) Shetkin – Blumberg’s

 b) Bartome – Mihelson’s

 c) Koher-Volkovich’s

 d) Georgyevsky-Mussi’s

10. Symptoms of appendicular infiltrate are all except:

а) subfebrile temperature

 b) Rovzing’s symptom

 c) profuse diarrhea

 d) leukocytosis

 e) palpable tumor formation in the right ileal region

**Methods of control of the homework at the classroom:**

 1. The solution of situational tasks of different levels of assimilation

 2. Curation of patients with evaluation of the results of their examination:

а) collecting complaints, studying anamnesis;

b) assessment of the general condition of the patient;

c) identification of local signs and symptoms of a disease;

d) assessment of paraclinical studies on the history of the disease;

e) differential diagnostic;

f) conclusions on diagnosis

g) principles of conservative and operative treatment

h) definition of treatment tactics

 3. Show the patient to group.

 4. Reading and analysis of radiographs

 5. Performance with essay.

**Literature**

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Attachment

Answers to tests

|  |  |
| --- | --- |
| 1-c | 6-а |
| 2-d | 7-e |
| 3-а | 8-e |
| 4-e | 9-d |
| 5-d | 10-c |

**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 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 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 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, with a share of gastric ulcer and duodenal ulcer accounts for up to 75-80% of bleeding. It is fundamentally important to distinguish bleeding ulcer and non-ulcer Genesis. To non-ulcer reasons include 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 are observed.

**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 that determined primarily subjective and objective state the patient, the degree of tachycardia and blood pressure (BP). So when the blood loss up to 500 ml (mild), the patient's condition doesn't change much, there is a weakness during exercise, tachycardia to 100 beats/min, decrease in systolic BP not below 100 mmHg.art. Blood loss from 500 ml to 1 liter determines the average degree of gravity: appears sharp pallor, dizziness, noise in the ears, "flickering flies" in the eyes of, sicks sometimes lose consciousness. Frequency heart rate 100-120 beats/min, the content and voltage 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 lost, pronounced pallor, facial features are sharp with an earthy shade, tachycardia more than 120 UD/ min, systolic blood pressure below 80 mmHg.art., diastolic may not be determined. Bleeding from gastric ulcer or duodenal ulcer is the most common the reason (75%) of gastroduodenal bleeding. The clinical course distinguish between covert and overt (profuse) bleeding. Latent bleeding is manifested by weakness, decrease 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 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: increased pain attack before it occurs bleeding followed by a rapid decay of Bergman's symptom (the effect of alkalization of the acidic contents of the stomach, 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 visible 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 inherent in 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: syndrome Mallory-Weiss syndrome, bleeding in stomach cancer, syndrome of portal hypertension, hemorrhagic erosive gastritis, disease, idiopathic thrombocytopenic purpura, pulmonary hemorrhage.

Syndrome 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. When esophagogastroduodenoscopy revealed 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 "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 abdominal the 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.) are 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. When gastrofibroscopy not detected ulcer 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. When x-ray chest revealed foci of destruction of lung tissue, lung cancer with decay, increasing the boundaries of the heart.

**Tests for homework:**

1. The regurgitation of the bright red foamy blood, which is enhanced by coughing, is characteristic of:

а) bleeding gastric ulcer

 b) cardiac tumor

 c) Mellori-Weiss syndrome

 d) pulmonary hemorrhage

2. Which method can determine a source of gastroduodenal bleeding?

а) X-ray examination of the stomach

 b) laparoscopy

 c) nasogastric tube

 d) redetermination of hematocrit and hemoglobin

 e) EGDS

3. Mellory-Weiss syndrome is:

а) varicose veins of the esophagus and cardia complicated by bleeding

 b) bleeding from mucous membranes on the soil of hemorrhagic vasculitis (Randu-Osler disease)

 c) crack in the cardiac part of gaster with bleeding

 d) hemorrhagic erosive gastroduodenitis

4. The disappearance of pain and the appearance of "melena" with a duodenal ulcer is characteristic for:

а) pyloroduodenal stenosis

 b) perforation of ulcer

 c) malignancy of ulcer

 d) bleeding

 e) penetration in pancreas

5. It is not characteristic for bleeding duodenal ulcer:

а) vomiting color of coffee grounds

 b) increased abdominal pain

 c) drop in hemoglobin

 d) melena

 e) decrease in the volume of circulating blood

6. The perforated ulcer is characterized by:

а) pain

 b) Spijarny’s symptom

 c) multiple vomiting

 d) sharp bloating

 e) Koher-Volkovich’s symptom

7. This method is used for diagnostic of perforated ulcer:

а) X-ray examination of the stomach

 b) intravenous urography

 c) radiography of the digestive tract with barium

 d) angiography

 e) novocain blockade

8. In the differential diagnostic of perforated ulcers and acute appendicitis, the most informative method is:

а) general blood analysis

 b) Shetkin-Blumberg’s symptom

 c) laparoscopy

 d) digital rectal examination

 e) passage of barium through the intestine

9. Clinic of perforated ulcer has periods:

а) hemodynamic disorders

 b) imaginary well-being

 c) toxic

 d) terminal

 e) diffuse peritonitis

 f) shock

10. The compensated pyloric stenosis is characterized by:

а) stabbing pain after eating

 b) blunt, aching pain after eating

 c) back pain

 d) constipation

11. The decompensated stenosis of the pylorus is not characterized by:

а) vomiting of food eaten the day before

 b) muscle tension of the anterior abdominal wall

 c) "Noise of splashing" in the stomach on an empty stomach

 d) icterus sclera and skin

12 For the diagnosis of pyloric stenosis is not applied:

а) cholecystography

 b) sigmoidoscopy

 c) bronchography

 d) radiography of gastric with barium

13. The main role in the occurrence of stenosis of the pylorus plays:

а) acute pancreatitis

 b) acute gastriris

 c) acute gastroenteritis

 d) chronic ulcer of antral gaster

14. The blunt, aching, girdle pain in the left hypochondrium is characteristic of:

а) acute appendicitis

 b) acute pancreatitis

 c) chronic pancreatitis

 d) perforation of hollow organ

 e) duodenal ulcer

 f) penetration of ulcer in pancreas

15. These methods are not used for diagnostic of penetrated ulcer:

а) X-Ray examination of gaster and duodenum

 b) laparoscopy

 c) X-Ray examination of skull

 d) X-Ray examination of chest

 e) EGDS

 f) US

16. Choose the basic symptoms of the penetration of ulcer in pancreas:

а) pain during swallowing

 b) multiple vomiting

 c) constant pain after eating which irradiating to the lumbar region

 d) pain in the chest

17. This radiologic sign indicates ulcer penetration:

а) defect of filling of a rounded shape in the area of the body of gaster

 b) a small "niche" in the pyloric department of the stomach

 c) Kloiber’s cups

 d) crescent strip of gas under the right dome of the diaphragm

 e) gas bubble in the bottom of gaster

 f) deep "niche" that extends beyond the organ

18. Basic signs of malignancy are all except:

а) Gorner’s symptom

 b) Knigin-Mondor’s triad

 c) syndrome of minor signs

 d) syndrome Courvoisier

19. The following methods of diagnostics should be used in case of suspected malignancy of the ulcer:

а) sputum analysis

 b) saliva analysis

 c) bile analysis

 d) analysis of washings from the gaster to atypical cells

20.Choose the most informative methods of diagnostics of cancer from ulcer:

а) fluoroscopy of the gaster

 b) fluoroscopy of the skull

 c) fluoroscopy of the lungs

 d) EGDS with biopsy

21.This symptoms are not characteristic for malignancy of ulcer:

а) pain in the right hypochondrium

 b) head ache

 c) pain in calf muscles during walking

 d) blunt, aching, persistent, non-eating epigastric pain

 e) causeless weakness, malaise, adynamia, aversion to meat food, weight loss

 f) heaviness in the epigastric region, belching rotten, unpleasant odor from the oral cavity.

 g) palpable tumor formation in the right ileal region

**Methods of control of the homework at the classroom:**

 1. The solution of situational tasks of different levels of assimilation

 2. Curation of patients with evaluation of the results of their examination:

а) collecting complaints, studying anamnesis;

b) assessment of the general condition of the patient;

c) identification of local signs and symptoms of a disease;

d) assessment of paraclinical studies on the history of the disease;

e) differential diagnostic;

f) conclusions on diagnosis

g) principles of conservative and operative treatment

h) definition of treatment tactics

 3. Show patient to group.

 4. Reading and analysis of radiographs

 5. Performance with essay.

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Lection of department.

Attachment

Answers to tests

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 1-d | 6-b | 11-b,d | 16-c | 21-а,b,c |
| 2-e | 7-а | 12-a,b,c | 17-f |  |
| 3-c | 8-c | 13-d | 18-а,b,d |  |
| 4-d | 9-b,e,f | 14-c | 19-d |  |
| 5-b | 10-b | 15-b,c,d,e | 20-d |  |

**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 among malignant neoplasms in frequency and mortality in different countries ranks first or one of the first places. 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 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 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. With 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 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 diffierence of chronic gastritis and stomach cancer repeat endoscopic and radiographic studies on the background of anti-inflammatory therapy, as well as in combination with 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 occur after 0.5-1 hour, later – after 2-3 hours), and hungry and nocturnal pain characteristic of ulcer 12 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 detected. Detection of a "niche" or "contrast spot" during x-ray examination allows speaking in the affirmative 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 conductiong 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 it is extremely difficult due to the lack of a characteristic 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 x-ray of the stomach is made in 77% of cases they find tuberculosis ulcers, exophytic growth of formation. When making EGDS one detect 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.

а) **List of issues for practical lesson:**

Determination of “Gastric cancer”

Anatomical classification of cancer

Clinical classification of cancer

Possible causes of gastric cancer

Ways of gastric cancer metastasis

Syndrome of minor signs

Clinical manifestations of cancer of different localization

Differential diagnostic of cancer

Algorithm of diagnostic search

Complications of gastric cancer

Types of radical operations

Methods of palliative operations

b) **Homework:**

Make the table or charts of:

classification of gastric cancer;

ways of gastric cancer metastasis;

methods of diagnostic search;

types and methods of operations in gastric cancer.

c) **Theme of essay for performance at the classroom:**

1. Etiopathogenesis of gastric cancer

2. Ways of gastric cancer metastasis

3. Methods of laboratory and instrumental examination of patients with gastric cancer

4. Differential diagnostic of gastric cancer

5. Complications of gastric cancer

6. Methods of treatment of gastric cancer

**Tests for homework:**

 1. The symptoms of gastric cancer are not:

а) girdle pain

 b) heart pain

 c) pain in the epigastric region

 d) pain in the calf muscles

 e) head pain

2. Schnitzler's metastasis is localized:

а) in the liver

 b) in the rectal-vesicular fold

 c) in the ovaries

 d) between the legs of the nodding muscle

 e) in the navel

3. The metastasis of Crookenberg is located:

а) in the rectal-vesicular fold

 b) in the ovaries

 c) between the legs of the nodding muscle

 d) in the navel

 e) in the liver

4. The syndrome of minor signs includes:

а) fast, unreasonable weight loss

 b) cough with purulent sputum

 c) hematuria

 d) aversion to dairy food

 e) aversion to meat food

5. Virchow's metastasis is detected:

а) in the liver

 b) in the rectal-vesicular fold

 c) in the ovaries

 d) between the legs of the nodding muscle

 e) in the lungs

6. The clinical manifestations of cancer are:

а) weakness, malaise, fast physical fatigue

 b) increased nutrition

 c) exophthalmos and eye shine

 d) weight loss, pallor of mucous membranes and skin

 e) ascites

7. Delayed evacuation from the gaster is characteristic for the localization of cancer:

а) in the pyloric

 b) in the cardiac

 c) in the body of the gaster

 d) in the great curvature

 e) in the small curvature

8. Choose survey methods used for cancer:

а) analysis of urine

 b) analysis of sputum

 c) analysis of gastric juice

 d) EGDS with biopsy

 e) phlebography

9. The earliest diagnosis of gastric cancer is provided by:

а) EGDS with biopsy

 b) search of «syndrome of minor signs»

 c) radiography of the gaster

 d) radiographic examination of the abdominal cavity

10. The following operations are used in gastric cancer:

а) cholecystectomy

 b) subtotal resection of the thyroid

 c) subtotal resection of the gaster

 d) appendectomy

 e) gasterectomy

**Methods of control of the homework at the classroom:**

 1. The solution of situational tasks of different levels of assimilation

 2. Curation of patients with evaluation of the results of their examination:

а) collecting complaints, studying anamnesis;

b) assessment of the general condition of the patient;

 colour of skin and mucous

 temperature of body

 feeding the patient

 number of respiratory movements

 state of language

 the involvement of the anterior abdominal wall in breathing

 the condition of the anterior abdominal wall (tension, painful sections)

 local symptoms and signs of disease

 intestinal peristalsis

 presence or absence of gases and stools

c) identification of local signs and symptoms of a disease;

d) assessment of paraclinical studies on the history of the disease;

e) differential diagnostic;

f) conclusions on diagnosis

g) principles of conservative and operative treatment

h) definition of treatment tactics

 3. Show patient to group.

 4. Reading and analysis of radiographs

 5. Performance with essay.

**Literature**

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Lection of department.

Attachment

Answers to tests

|  |  |
| --- | --- |
| 1-а,b,d,e | 6-а,d,e |
| 2-b | 7-а |
| 3-c | 8-c,d |
| 4-a,e | 9-а |
| 5-d | 10-c,e |

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

**The purpose of the lesson:** to learn at the level of reproduction in memory 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 to 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, acute cholecystitis, the frequency takes the second place after acute appendicitis. Women are more likely to suffer than men (5:1).

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

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

**Clinical picture.** Acute cholecystitis manifests itself by an attack intense pain of a constant nature in the right hypochondrium with by irradiation to the right supraclavicular region and the scapula arising usually after the error in the diet (eating spicy and fatty foods). 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 the 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 marked 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`in are expressed, a positive symptom of Schetkin-Blumberg

**Differential diagnosis.**

Differential diagnosis is carried out with dyskinesia biliary tract, acute appendicitis, gastric ulcer and 12-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 young and middle-aged. For acute appendicitis is characteristic localization of pain in the right iliac region, where there is a protective muscle tension anterior abdominal wall are defined positive symptoms of Kocher-Volkovich, Rousing, Sudkovsky, Obraztsov, Voskresensky, Karavaeva, Bartome-Michelson, and symptoms of Schetkin-Blumberg are defined.

Perforated stomach ulcer and 12 duodenal ulcer is more common in men's. 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 of Spigarny – 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 should be used such modern methods as ultrasound, laparoscopy, in which liquid is detected in the abdominal cavity.

Acute pancreatitis manifests itself with especially 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 to 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 examinationallows to establish indirect signs of pancreatitis – the limitation of the left cupula of diaphragm, the liquid in pleural sinus on the left. When ultrasound shows changes in structure the pancreas, can be determined in the liquid in the omental bursa.

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

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 is determined symptom of Pasternatsky. When making ultrasound and x-ray examination the concrements can be determined. Urine analysis reveals the presence of fresh red blood cells, white blood cells, protein.

а) **List of issues for practical lesson:**

 Determination of “Acute cholecystitis” and “Chronic cholecystitis”

 Features of the location of the gallbladder, the structure of its wall

 Features of the anatomical structure of the external biliary tract

 Features of the blood supply of the gallbladder (triangle of Kallo )

 Classification of cholecystitis

 Clinic of acute cholecystitis and chronic cholecystitis

 The main symptoms of cholecystitis (pain in the right upper quadrant, symptoms of Ortner, Kera, Zakharyin, Murphy, Georgievsky-Mussi, etc.)

 Features of its course in the elderly

 Differential diagnosis of acute cholecystitis with:

acute appendicitis

acute gastritis

perforated gastric and duodenal

acute pancreatitis

acute intestinal obstruction

 Complications of acute cholecystitis (pericholecystitis, perforation and bile peritonitis, mechanical jaundice, purulent cholangitis, primary edema, empyema of the gallbladder)

 Physician's tactics at the prehospital stage

 Principles of conservative treatment

 Indications for surgery

 Methods (laparotomic, from the mini-access, laparoscopic) and types of operations (cholecystectomy from the cervix, from the bottom, cholecystostomy)

b) **Homework:**

 Make the table or charts of:

classification of cholecystitis;

differential diagnostics;

features of the structure and blood supply of the gallbladder;

methods of examination of patients with cholecystitis;

complications of cholecystitis;

types and methods of surgical treatment of patients with cholecystitis.

c) **Theme of essay for performance at the classroom:**

1. Topography of biliary tract.

2. Exchange of bilirubin.

3. Causes of mechanical jaundice.

4. Modern methods of surgical treatment of cholecystitis.

5. Clinic, diagnosis and treatment of cholangitis.

**Tests for homework:**

1. The width of the choledoch is normally:

а) 0,5 cm

b) 0,6-1,0 сm

c) 1,1-1,5 сm

d) 1,6-2,0 сm

e) more 2 сm

2. A patient with a gangrenous cholecystitis is shown:

а) conservative treatment

 b) delayed operation

 c) the decision depends on the age of the patient

 d) surgery in the absence of the effect of conservative therapy

 e) emergency operation

3. To intraoperative methods of investigation of extrahepatic biliary tracts belong all except:

а) palpation of choledoch

 b) choledochoscopy

 c) intraoperative cholangiography

 d) probing choledoch

 e) intravenous cholangiography

4 The patient with jaundice on the background of choledocholithiasis needs:

а) an emergency operation

 b) conservative treatment

 c) urgent surgery after preoperative preparation

 d) the catheterization of the celiac artery

5. The complications of calculous cholecystitis are not:

а) varicose veins of the esophagus

 b) mechanical jaundice

 c) cholangitis

 d) subhepatic abscess

 e) peritonitis

6. Stone formation in the gallbladder is facilitated by everything except:

а) stagnation of bile in the bladder

 b) metabolic disorders

 c) inflammatory changes in the gallbladder

 d) dyskinesia of the bile duct

 e) disorders of pancreatic secretion

7. To clarify the type of jaundice and the cause of its occurrence is not used:

а) CT scan

 b) intravenous cholecystocholangiography

 c) percutaneous transhepatic cholangiography

 d) US (ultrasound)

8. In the case of cholelithiasis, an emergency operation is indicated for:

а) occlusion of the cystic duct

 b) cholecystopancreatitis

 c) perforated cholecystitis

 d) mechanical jaundice

 e) hepatic colic

9. The complication of cholelithiasis is:

а) edema of the gallbladder

 b) empyema of the gallbladder

 c) jaundice, cholangitis

 d) perforated cholecystitis, peritonitis

10. In cholelithiasis, planned cholecystectomy is indicated:

а) in all cases

 b) a latent form of the disease

 c) the presence of clinical signs of disease and disability

 d) patients older than 55 years

 e) persons younger than 20 years.

**Methods of control of the homework at the classroom:**

 1. The solution of situational tasks of different levels of assimilation

 2. Curation of patients with evaluation of the results of their examination:

а) collecting complaints, studying anamnesis;

b) assessment of the general condition of the patient;

c) identification of local signs and symptoms of a disease;

d) assessment of paraclinical studies on the history of the disease;

e) differential diagnostic;

f) conclusions on diagnosis

g) principles of conservative and operative treatment

h) definition of treatment tactics

 3. Show patient to group.

 4. Reading and analysis of radiographs

 5. Performance with essay.

**Literature**

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Lection of department.

Attachment

Answers to tests

|  |  |
| --- | --- |
| 1-b | 6-e |
| 2-e | 7-b |
| 3-e | 8-c |
| 4-c | 9-c |
| 5-а | 10-а |

**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 patient.

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 is the character of tissue autolysis the pancreas owing to introduce activation of its proteolytic and lipolytic proenzymatic 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 12 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 defeat – a small, large-focal, subtotal-all out

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) septic phlegmon of retroperitoneal tissue

I) internal and external digestive fistulas.

**Clinical picture.** The patient complains of cruel, belting, the pain of constant character in the epigastrium, indomitable vomiting, not bringing relief. In the history of patients may be an indication 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 develops hypotension. Belly is swollen in epigastrium, in the act the breathing its involvement 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.

Auscultation auscultated sluggish peristaltic noises (paresis intestine's.) With the progression of the process, there are signs irritation of the peritoneum (symptom of Schetkin-Blumberg). At formation infiltration of the omental bursa a 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 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 of retinoscopy abdomen reveals distention of transverse colon, the blurred outline of the left psoas muscle (symptom of Tobia), duodenitis and detailed horseshoe duodenal ulcer. Chest x-ray allows you to set the reduction 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 o f the gland tissue, common bile duct dilatation. Concretions in the gallbladder can be detected and biliary ducts. Among additional instrumental methods diagnostics, allowing to specify a picture of defeat, there can be computed tomography and nuclear magnetic resonance (NMR imaging) 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 one should remember 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 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 observation x-ray examination of the abdominal cavity gas under the right cupula of the diaphragm is revealed. In the cover of 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 an increase in leukocytosis, shift of the formula to the left, increased erythrocyte sedimentation rate, marked hyperglycemia, and hypocalcemia are observed. 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.

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**Differential diagnosis.**

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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 from 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 pancreas. There is a liquid stool mixed with blood. Vomiting it 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, 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 is contractible the nature around the belly, while in pancreatitis the pain is localized in the epigastric region, it is encircling, constant. At acute intestinal obstruction revealed positive symptoms of Val`, Sklyarov, Shlange, Spasokukotsky, 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 observed dynamic paresis and bloating transverse colon. When the overview x-ray study of the abdomen determined 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. In acute pancreatitis these symptoms are negative, but there are positive 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 is determined, positive symptoms of Murphy, George-Mussy, Ker, Zakharyin, Ortner. In acute pancreatitis - epigastric pain belting and spreading all over her stomach. Kerte symptoms are determined, 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 the appearance of abdominal pain, vomiting. Pain in pancreatitis cruel, belting, sometimes patients lose consciousness. When gastritis pain 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 epigastric region, symptoms of Voskresensky, Mayo - Robson, Shchetkin - Blumberg do not exist. Diastasis in the urine is not increased. Ultrasound does not detect 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 the pancreas, or in her head. However, the pain of renal colic 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 revelead. The urine test in a patient with renal colic has fresh red blood cells, there could be protein, cylinders, white blood cells. At cystochromoscopy the selection of Indigo is slowed or absent on the side of the lesion. When ultrasound of the kidneys - signs of violation urodynamics, dilation of renal pelvis, hydronephrosis, dense inclusions in the calices -pelvis system. In case of difficulties in differential diagnosis 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 weakened, disturbed heart rhythm, heart tones are deaf. Unlike this patient with acute pancreatitis is worried, rushing, stomach swollen, painful in the epigastric area, the positive symptoms of Kerte, Voskresensky, Mayo-Robson, Kulen, Mondor, and others are determined.

In the study of blood in a patient with acute pancreatitis is observed leukocytosis, toxic formula shift to the left. Revealed an increase urine diastase, and myocardial infarction, these changes are absent. To establish the diagnosis of myocardial infarction it is necessary clinically and confirm electrocardiogram.

а) **List of issues for practical lesson:**

Determination of “Acute pancreatitis” and “Chronic pancreatitis”

Features of the structure and function of the pancreas

The main causes of pancreatitis

The pathogenesis of acute and chronic pancreatitis

Clinic of this disease

The nature of the pain syndrome

The basic symptoms (Kerte’s, Voskresensky’s, Mayo-Robson’s, Mondor’s, Cullen’s, Gray-Turner’s, Halstead’s and etc.)

Features of the course of the disease

Methods of diagnosis (laboratory, instrumental)

Differential diagnosis of acute and chronic pancreatitis

The complications of acute pancreatitis

The main principles of treatment (help at the prehospital stage) edematous and destructive forms of acute pancreatitis, chronic pancreatitis

b) **Homework:**

Make the table or charts of:

structure of the pancreas and its main functions;

pathogenesis of acute pancreatitis;

classification of acute and chronic pancreatitis;

basic principles of treatment of acute and chronic pancreatitis.

c) **Theme of essay for performance at the classroom:**

 1. The role of the pancreas in the life of the human body.

 2. Methods of clinical and instrumental diagnosis of acute and chronic pancreatitis.

 3. Methods of conservative treatment of acute and chronic pancreatitis.

 4. Modern methods of surgical treatment of acute pancreatitis.

**Tests for homework:**

1. In the development of acute pancreatitis, the leading role belongs to:

а) microbial flora

 b) microcirculatory disorders

 c) auto-enzyme aggression

 d) venous stasis

2. The transverse pain resistance of the anterior abdominal wall in the projection of the pancreas in acute pancreatitis is called the symptom:

а) Mayo-Robson’s

 b) Kerte’s

 c) Gray-Turner’s

 d) Mondor’s

 e) Voskresensky’s

3. Soreness in palpation in the left costal-vertebral corner is characteristic of the symptom:

а) Voskresensky’s

 b) Mayo-Robson’s

 c) Grunvald’s

 d) Mondor’s

 e) Gray-Turner’s

4. The most informative method of research in pancreatitis is:

а) radiographic examination of the abdominal cavity

 b) laparoscopy

 c) gastroduodenoscopy

 d) determination of blood and urine amylase, ultrasound

5. Detection of hemorrhagic effusion in the abdominal cavity and foci of fatty necrosis on the peritoneum allows one to think about:

а) damage to the hollow body

 b) rupture of liver

 c) acute pancreatitis

 d) perforated gastric ulcer

 e) mesenteric thrombosis

6. The most frequent symptom of pancreatitis is:

а) nausea and vomiting

 b) hyperthermia

 c) jaundice

 d) abdominal distention

 e) pain in the upper abdomen

7. This enzyme is not involved in the pathogenesis of acute pancreatitis:

а) enterokinase

 b) elastase

 c) phospholipase

 d) trypsin

 e) streptokinase

8. The most common clinico-morphological form of acute pancreatitis is:

а) edematous pancreatitis

 b) fatty pancreatic necrosis

 c) hemorrhagic pancreatic necrosis

 d) purulent pancreatitis

 e) fatty pancreonecrosis with enzymatic peritonitis

9. The most characteristic feature of acute pancreatitis is pain:

а) aching

 b) girding

 c) cramping

 d) dagger

 e) blunt

10. Patient with acute pancreatitis in the first day is appointed:

а) diet table 15

 b) diet table 5а

 c) diet table 9

 d) diet table 10

 e) hunger

**Methods of control of the homework at the classroom:**

 1. The solution of situational tasks of different levels of assimilation

 2. Curation of patients with evaluation of the results of their examination:

а) collecting complaints, studying anamnesis;

b) assessment of the general condition of the patient;

 colour of skin and mucous

 temperature of body

 feeding the patient

 number of respiratory movements

 state of language

 the involvement of the anterior abdominal wall in breathing

 the condition of the

treatment

h) definition of treatment tactics of anterior abdominal wall (tension, painful sections)

 local symptoms and signs of disease

 intestinal peristalsis

 presence or absence of gases and stools

c) identification of local signs and symptoms of a disease;

d) assessment of paraclinical studies on the history of the disease;

e) differential diagnostic;

f) conclusions on diagnosis

g) principles of conservative and operative

 3. Show patient to group.

 4. Reading and analysis of radiographs

 5. Performance with essay.

**Literature**

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Lection of department.

Attachment

Answers to tests

|  |  |
| --- | --- |
| 1-c | 6-e |
| 2-b | 7-e |
| 3-b | 8-а |
| 4-b | 9-b |
| 5-c | 10-e |

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

**Purpose of the lesson:** to learn at the level of reproduction in memory classification, pathogenesis, clinical signs of acute intestinal impassability, methods of its diagnostics; to master and fix techniques collection of typical complaints, identify symptoms, appointment 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 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 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 gases and chairs. 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 departure of stool and gases, then bloating and pain join. Vomiting is thus late and a 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 severe pain, bloating, nausea, vomiting, a delay of a chair. There may be uneven bloating. Stomach usually soft, at a palpation it is possible to probe spasmed part of the intestine. Peristaltic intestinal noises are heard. General the patient's condition is relatively satisfactory, violations of there is no side of the cardiovascular system. Blood and urine tests 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 Shchetkin - Blumberg. Pulse and breathing are accelerated. In blood leukocytosis, and in severe cases - shift of the leucoformula to the left are determined. When making the overview x-ray the abdomen Kloyber`s bowls and diffuse flatulence intestine can be detected. 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.

Tongue is dry, lined with white coating. Belly swollen, most often asymmetric, in the act of breathing 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`). Tapping at the anterior abdominal wall reveals the "noise of the splash" (symptom of Sklyarov). Percussion over bloated intestinal loops is noted tympanitis with metallic hue (symptom of Kivul`). At auscultation "sound of falling drop" may be auscultated (symptom of Spasokukotsky). At node formation or inversion of the sigmoid colon at a palpation determined devastation in the right iliac region (symptom of Shimon - Dans.) A finger rectal examination is mandatory, with which one can determine the gaping of the anus and an empty ampoule of the rectum (symptom of Obukhov hospital). Impossible the introduction of in siphon enema more than 500 ml of water (symptom of Tsege - Manteuffel). Analyses of peripheral blood and urine in Istages do not change significantly. Radiologically bloated intestinal loops, arches, Kloyber`s bowls, symptom of Casey (transverse the striations of the small intestine - "the skeleton of a herring") are determined.

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 defeat nerve endings in the intestinal wall (symptom " imaginary well-being"), vomiting less abundant, but with a rotten smell, thirst. Face pained. Leather earthy-gray color. Pulse quickened, weakened fillings on peripheral arteries, arterial pressure progressive decreases, sometimes there is a collapse. Besides the above mentioned symptoms observed in stage I, begins to be determined by the symptom of Shchetkin-Blumberg, percussion is revealed free liquid in sloping areas of the abdomen. Radiological the picture is characterized by multiple Kloyber`s bowls. In the blood increases leukocytosis with a toxic shift of the leukocyte formula to the left.

Stage III (terminal). In this stage, a very pronounced phenomenon intoxications. 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 the side of the rod and young forms, toxic granularity is detected. Increase the level of urea and creatinine, 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 is acute. The common symptom is abdominal pain. However, with appendicitis pain constant, characterized by a symptom of its migration(symptom of Koher-Volkovich), and when intestinal obstruction is cramped and corresponds to the site of pain occurrence of an obstacle in the gut. In acute appendicitis at the beginning 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 revealed positive symptoms of Rovsing, Karavaeva, Obraztsov, Sitkovsky, Voskresensky, Bartome-Michelson, who 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 the epigastric region, at that time, as in intestinal obstruction the pain is colicy. A common symptom is bloating. However, if in pancreatitis, there is swelling in the upper abdomen, then in acute intestinal obstruction bloating occurs in various departments, in 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 intestinal obstruction in the first hours it is abundant, bringing short-term relief, and then acquires a fecal smell. At acute pancreatitis is defined positive symptoms of Mayo-Robson, Carte, the resurrection, 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 observation x-ray examination of the abdominal cavity, a decrease is found in excursions of the diaphragm, duodenostasis and detailed horseshoe of the duodenum, unlike Kloyber`s bowls characteristic intestinal obstructions. Ultrasound reveals a violation of the echogenicity of the structure pancreas, change its size, the presence of liquid in the into the omental bursa of the abdominal cavity.

In acute thrombosis of mesenteric vessels, too, there is strong, acute pain, bloating, vomiting. The pain is permanent, colic, character 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 chair and gases detained. Vomiting is rare, sometimes mixed with "coffee grounds", and intestinal obstruction vomiting repeated, with a feces smell. Auscultation in acute mesenteric thrombosis reveals inhibition of peristalsis, while intestinal obstruction in the initial stage the peristalsis is strengthened. When the overview 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 is determined by the liquid in the free abdominal cavity.

For perforative ulcer of the stomach and duodenum is characteristic a sharp, sudden, the beginning of "stabbing" pain, spreading immediately all over the abdomen, the anterior abdominal wall sharply tense – "wooden" belly (remember the triad of Knigin-Mondor). Often occurs in patients with a peptic ulcer history. Similar pains in the beginning attack acute intestinal obstruction does 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 sign of with acute intestinal obstruction. But under renal colic pain is constant, radiates to groin, thigh, scrotum, removed by the introduction of antispasmodics, and intestinal obstruction pain is contractible, gases do not depart, no stool. With renal colic is detected a positive symptom of

Pasternatsky, in acute intestinal obstruction symptoms of Val`, Shlange, Kivyl`, "splashing" (symptom of Sklyarov). When the overview x-ray abdominal cavity in patients with renal colic in the abdomen 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, intestinal obstruction data there was no change. Ultrasound of the kidneys reveals signs of pyeloectasia, the presence of concrements in pyelocaliceal system, hydronephrosis, testifies in favor of urological pathology.

а) **List of issues for practical lesson:**

Determination of “Acute intestinal obstruction”

Classification of intestinal obstruction

Causes of intestinal obstruction

Pathogenesis of peritonitis in acute intestinal obstruction

Clinical picture of acute intestinal obstruction

Methods of instrumental examination of patients with intestinal obstruction

Differential diagnostic of acute intestinal obstruction

Methods of conservative and operative treatment of acute intestinal obstruction

b) **Homework:**

Make the table of charts of:

classification of intestinal obstruction;

pathogenesis of intestinal bowel disorders in acute intestinal obstruction;

algorithm for examination of patients with acute intestinal obstruction;

principles of conservative and operative treatment of intestinal obstruction.

c) **Theme of essay for performance at the classroom:**

1. Methods of examination of patients with suspected acute intestinal obstruction.

2. Disorders of water-electrolyte metabolism in acute intestinal obstruction.

3. Pathogenesis of peritonitis in acute intestinal obstruction

4. Methods of treatment of patients with acute intestinal obstruction.

**Tests for homework:**

1. To provoke the development of acute intestinal obstruction:

а) weakness of abdominal muscles

 b) alcohol abuse

 c) consumption of fat and spicy food

 d) eating large amounts of fiber-rich foods

 e) psychotrauma

2. For all types of acute intestinal obstruction characteristic is:

а) intense abdominal pain

 b) augmentation of peristalsis

 c) persistent stool and gas retention

 d) abdominal asymmetry

 e) tension of the abdominal muscles

3. For low colonic obstruction, all is characteristic except:

а) gradual increase in symptoms

 b) abdominal distention

 c) the appearance of the Klauber bowls

 d) stool delay

 e) rapid dehydration (during the day)

4. The main symptom of obstructive intestinal obstruction is:

а) persistent abdominal pain

 b) cramping abdominal pain

 c) vomit of "coffee grounds" color

 d) abdominal distention

 e) melena

5. If suspicion of acute intestinal obstruction is primarily produced:

а) overview fluoroscopy of the abdominal cavity organs

 b) examination of the passage of barium in the intestine

 c) esophagogastroduodenoscopy

 d) laparoscopy

 e) blood chemistry

6. When nodulating, curling the intestine:

а) should be conservative treatment

 b) emergency operation is shown

 c) dynamic monitoring is necessary

 d) the operation is performed in the "cold" period

 e) all answers are correct

7. With cancer of the cecum, the operation of choice is:

а) right-sided hemicolectomy with superposition of ilotransversoanastomosis

 b) ileostomy

 c) cecostomy

 d) Hartmann operation

8. For acute intestinal obstruction it is not typical:

а) indomitable vomiting

 b) cramping pains

 c) rapid dehydration

 d) bloating in the first hours of the disease

 e) rapid decrease in BCC

9. When paralytic intestinal obstruction they use:

а) surgical treatment

 b) cholinergetics

 c) nasointestinal intubation

 d) novocain blockade

 e) all intestinal stimulants

10. In acute intestinal obstruction this symptom is not detected:

а) Val’s

 b) Voskresensky’s

 c) Sklyarov’s

 d) Kivulya’s

 e) symptom of "Obukhov hospital

**Methods of control of the homework at the classroom:**

 1. The solution of situational tasks of different levels of assimilation

 2. Curation of patients with evaluation of the results of their examination:

а) collecting complaints, studying anamnesis;

b) assessment of the general condition of the patient;

 colour of skin and mucous

 temperature of body

 feeding the patient

 number of respiratory movements

 state of tongue

 the involvement of the anterior abdominal wall in breathing

 the condition of the

treatment

h) definition of treatment tactics anterior abdominal wall (tension, painful sections)

 local symptoms and signs of disease

 intestinal peristalsis

 presence or absence of gases and stools

c) identification of local signs and symptoms of a disease;

d) assessment of paraclinical studies on the history of the disease;

e) differential diagnostic;

f) conclusions on diagnosis

g) principles of conservative and operative

 3. Show patient to group.

 4. Reading and analysis of radiographs

 5. Performance with essay.

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Lection of department.

Attachment

Answers to tests

|  |  |
| --- | --- |
| 1-d | 6-b |
| 2-c | 7-а |
| 3-e | 8-d |
| 4-b | 9-e |
| 5-а | 10-b |

**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 12-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 of, regardless of the cause of peritonitis, intestinal coli and pathogenic cocci dominate. Increasing intoxication leads to defeat vital organs and development of multi-organ failure: initially, hepatic renal, cardiovascular and then lung and terminal stage defeat of the Central nervous system. Diagnosis is usually not represents special hardship. 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.

If in the reactive stage pain syndrome and protective the tension of the abdominal muscles in the toxic stage of these symptoms less pronounced, but increase tachycardia, nausea, vomiting, intestinal paresis and bloating, febrile. 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 much distended, missing peristalsis of the intestine (symptom of "deathly silence"). In laboratory the blood tests revealed a rising leucocytosis, which is then can be replaced by leukopenia, indicating the depletion of protective forces of the body, there is a significant toxic shift leucoformula leftward. Hypo-and dysproteinemia also indicate exhaustion of immuno-protective forces of the organism. In the toxic and terminal stages peritonitis the indicators of residual nitrogen increase. Water-electrolyte losing 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 values, 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 friendly effusion in pleural cavity; ultrasound of abdominal organs cavities (according to indications) and free abdominal cavity for detection 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 are concucted, in diffuse peritonitis - extracorporeal detoxification by available methods (blood UFOs, hemosorption, plasmapheresis, lymphosorption, etc.). The correction of the cardiovascular, pulmonary, hepatic-renal failure.

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's. But with pancreatitis, before the development of destructive complicated of 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, which increase in acute pancreatitis and does 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 strong (the so called "ileus cry"), are colicky, and when peritonitis is permanent. Peristalsis in acute intestinal obstruction in the beginning reinforced, identified the symptoms of Val`, Shlange, Kivyl`, "splashing" Sklyarov. X-ray revealed the Kloyber`s bowls, a symptom of "organ pipes", the passage of the 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 rather intense pain in the abdomen, a protective voltage muscles' can be observed. However, unlike peritonitis, there are small moderate pain after eating, water or milk, paresis of the intestine observed, the temperature remains normal, absent or minimal changes in laboratory blood values. 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 by initially a strong pain in his stomach. Pay attention expressed pulse arrhythmia, a history of heart disease rheumatic or post-infarction etiology. In blood tests it is noted hyperleukocytosis, a sharp shift to the left leucoformula, changes coagulogram. In the subsequent peritoneal phenomena join. Essential help is rendered by early carrying out of diagnostic laparoscopies.

If the ectopic pregnancy occurs bleeding in abdominal cavity and severe pain reaction accompanied by tachycardia, drop in blood pressure, all the way to collapse. In the beginning there is no symptom of Shchetkin-Blumberg, abdominal wall remains soft, 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 allow the 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's. 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 can be observed severe paroxysmal abdominal pain and even protective tension abdominal wall. However, there is no nausea, vomiting, a symptom of Schetkin-Blumberg's negative. Contact with industrial toxic substances is defined. Body temperature is normal. In there is no inflammatory reaction in the blood test.

а) **List of issues for practical lesson:**

 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 used in differential diagnostics of peritonitis?

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

b) **Homework:**

Make the table or charts of:

 classification of peritonitis;

 pathogenesis of pathological disorders in the body with a common peritonitis;

 operative treatment of peritonitis;

 ways to prevent complications of peritonitis.

c) **Theme of essay for performance at the classroom:**

1. The pathogenesis of acute purulent peritonitis.

2. Modern methods of diagnostic of peritonitis.

3. Basic principles of treatment of acute purulent peritonitis.

4. Methods of intra- and extracorporeal detoxification used in the treatment of peritonitis.

**Tests for homework:**

1. For diffuse purulent peritonitis it is characteristic:

а) girdle pain

 b) multiple indomitable vomiting

 c) frequent painful urination

 d) symptom of Schetkin-Blumberg

 e) melena

2. In the terminal stage of diffuse peritonitis it is not characteristic:

а) general extremely difficult condition

 b) increased peristalsis

 c) severe intoxication

 d) face of Hippocrates

 e) abdominal distention

3. Peritonitis is the complication for all diseases except:

а) acute appendicitis

 b) acute intestinal obstruction

 c) disturbed ectopic pregnancy

 d) acute pancreatitis

 e) stenosis of the duodenal papilla

4. To diagnose the abscess of Douglas space, the optimal method is:

а) Ultrasound of the abdominal cavity

 b) diagnostic laparoscopy

 c) digital rectal examination

 d) abdominal radiography

 e) clinical blood test

5. The most common cause of peritonitis is:

а) acute appendicitis

 b) perforating ulcer

 c) acute intestinal obstruction

 d) acute pancreatitis

 e) strangulated hernia

6. For peritonitis it is not typical:

а) abdominal wall tension

 b) symptom of Courvoisier

 c) increased heart rate

 d) stool and gas retention

 e) vomiting

7. The pathognomonic symptom of the perforation of the hollow organ into the free abdominal cavity is:

а) high leukocytosis

 b) positive symptom of Schetkina-Blumberg

 c) Free gas under the right dome of the diaphragm

 d) dullness in the shallow abdominal cavity

 e) absence of peristaltic noise

8. For the late stage of peritonitis it is not typical:

а) abdominal distention

 b) dehydration

 c) disappearance of intestinal noises

 d) increased peristalsis

 e) hyperproteinemia

9. The cause of pseudo-peritoneal syndrome may be:

а) acute appendicitis

 b) intestinal obstruction

 c) pneumothorax

 d) retroperitoneal hematoma

 e) nephrolithiasis

10. What symptoms do not relate to the initial stage of peritonitis:

а) abrupt electrolyte shifts

 b) tendency to tachycardia

 c) abdominal tenderness during palpation

 d) tension of abdominal muscles

 e) augmentation of leukocytosis

**Methods of control of the homework at the classroom:**

 1. The solution of situational tasks of different levels of assimilation

 2. Curation of patients with evaluation of the results of their examination:

а) collecting complaints, studying anamnesis;

b) assessment of the general condition of the patient;

c) identification of local signs and symptoms of a disease;

d) assessment of paraclinical studies on the history of the disease;

e) differential diagnostic;

f) conclusions on diagnosis

g) principles of conservative and operative treatment

h) definition of treatment tactics

 3. Show patient to group.

 4. Reading and analysis of radiographs

 5. Performance with essay.

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Lection of department.

Attachment

Answers to tests

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| --- | --- |
| 1-d | 6-b |
| 2-b | 7-c |
| 3-e | 8-d |
| 4-c | 9-e |
| 5-а | 10-а |

**The theme of lessons: “VARICISE VEINS”**

**The purpose of the lesson**: learn at the level of reproduction from memory etiology, pathogenesis of varicose veins, clinical manifestations, methods of diagnostics and differential diagnostic of varicose veins.

**To the lesson student should:**

1. Know the causes of development of varicose veins, classification, methods of clinical diagnosis and instrumental research.

 2. Understand the pathomorphological features of the venous wall, the pathogenesis of varicose veins, depending on the type of lesion and the degree of venous outflow disturbance, to evaluate the data of objective patient research.

3. Be able to correctly collect an anamnesis of the disease, to conduct a clinical examination using functional tests on the passage of deep veins and the consistency of the venous valve apparatus.

4. Know the differential diagnosis of varicose veins: with postthrombophlebitic disease, lymphatic insufficiency, congenital angiodysplasia, femoral hernia.

**Theoretical information**

Varicose disease refers to the pathological expansion of the peripheral veins of the limbs.

In Russia, a varicose disease affects about 30 million people, of whom 15% have trophic disorders. High prevalence of the disease, a significant number of relapses require timely diagnosis and adequate treatment of varicose veins.

Varicose disease of the lower limbs is a polyethiologic disease, in the genesis of which important are: heredity, obesity, violation of the neuro-hormonal status, lifestyle peculiarities, weakness of the venous wall, congenital angiodysplasia, underdevelopment of valvular valve apparatus and etc.

**Classification.** Venous disease takes into account: the form of the disease, the degree of chronic venous insufficiency and the complications caused by the disease. The following forms of varicose veins are distinguished:

1. intradermal and subcutaneous varicose veins without a pathological venous discharge;

2. segmental varicose with reflux on the surface or perforator veins;

3. widespread varicose veins on the surface and perforators;

4. varicose veins with reflux on the deep veins.

In terms of the degree of chronic venous insufficiency: 0 st. - there is no venous insufficiency; 1 st. - a syndrome of "heavy legs" - a transient edema; 2 st. - persistent edema, hyper or hypopigmentation, lipodermatosclerosis, eczema; 3 st. venous trophic ulcer.

Complications of varicose veins are bleeding, thrombophlebitis, trophic ulcer.

**Clinical picture**. In the early stages of varicose veins, as a rule, hemangiectasias or varicose veins are developed. Only after a few years and even decades, varicose extensions may appear in the pools of small or large subcutaneous veins.

When the varicose veins begin with the appearance of typical venous nodules, two variants of the development of the disease can be distinguished: 1. the appearance of varicose veins on the shin indicates the predominant lesion of the perforating veins; 2. The appearance of varicose veins initially on the thigh and antero-medial surface of the tibia, popliteal fossa points to the leading role in the development of the disease of high veno-venous discharge. Regardless of what discharge prevails, the joining of symptoms of chronic venous insufficiency occurs identically.

In most patients 3-5 years after the appearance of varicose veins, functional disorders (complaints of a feeling of heaviness in the legs, pain in the leg, foot and leg flutter) occur at the end of the day. As the disease progresses, the phenomena of venous insufficiency increase - the edema becomes more pronounced and permanent, the heaviness in the legs increases, and signs of trophic disturbance appear in the form of hyperpigmentation zones, trophic ulcers located mainly on the medial surface of the shin. Often, varicose disease is complicated, in later stages, thrombophlebitis, phlebothrombosis, bleeding from varicose veins.

Very important in clinical practice is the differential diagnosis of various diseases accompanied by the development of varicose syndrome.

Due to the common nature of many clinical manifestations of various pathological conditions, primarily varicose and postthrombophlebitic diseases, congenital venous dysplasia, and lymphatic outflow disorders, considerable diagnostic difficulties are possible.

In the diagnosis of varicose veins, the following tasks should be solved: 1. to confirm the presence of the pathology of the venous system of the limbs; 2. to reveal reflux on subcutaneous and perforating veins; 3. assess the state of venous outflow through deep veins; 4. differentiate the nature of pathological changes in the veins (depending on the type of disease). To solve these problems, it is necessary to carefully collect an anamnesis of the disease and complaints of the patient. The most characteristic manifestation of lesions of the venous system of the lower limbs is fatigue in the legs after a prolonged stay in orthostasis. In a clinical examination, both lower extremities, as well as inguinal areas and the anterior wall of the abdomen, should be examined. Palpation allows to detect defects in the fascia corresponding to the exit of insufficient perforating veins. Percussion test allows to diagnose valvular insufficiency of the main subcutaneous veins. It is always necessary to determine pulsation on the arteries of the extremities.

When carrying out various physical tests (Troyanov-Trendelenburg, Delbe-Perthes, Pratt, Gachenbruch, etc.), the frequency of false positive or false-negative results reaches 60%. In this regard, modern diagnosis of varicose veins should be based on these special methods of instrumental research. Priority is given to ultrasound dopplerography, which makes it possible to reliably estimate the permeability of veins, as well as to reveal the majority of pathological veno-venous refluxes. The most informative method of examination is duplex angioscanning with color mapping of subcutaneous and perforating veins. The use of ultrasound methods for assessing the state of the venous system of the lower limbs allows you to abandon the conduct of radiopaque phlebography.

**Differential diagnostic**

In clinical practice, most often it is necessary to carry out differential diagnosis of varicose veins with postthrombophlebitic disease, congenital dysplasia, lymphatic outflow, femoral hernia.

Post-thrombophlebitic disease - a varicose form, occurs mainly at the age of 40-60 years, usually after a previous deep phlebothrombosis. Distinguish: occlusal, recanalization and mixed forms of the disease, depending on the violation of patency of deep veins of the extremity. Most often secondary varicose veins of the superficial veins appear in a few months from the onset of the acute period of deep phlebothrombosis and are localized on the lower leg, thigh, pubis and anterior abdominal wall, depending on the level of occlusive disturbance of venous outflow along the deep veins.

As the chronic venous insufficiency progresses, the edema develops in the clinical picture of the disease, followed by signs of tissue trophism (hyperpigmentation or hypopigmentation, lipodermatosclerosis, eczema, trophic ulcers). Allocate: edematous, ulcerative, painful, varicose and mixed forms of the disease. In contrast to varicose veins, the first sign of the disease is swelling, which after a night rest is significantly reduced. Feelings of heaviness in the legs, pains appear in the first weeks of the disease, and trophic disorders develop after 3-5 years, are often circular, progress rapidly. A significant role in clarifying the nature of venous outflow disturbance has an ultrasound examination of the venous outflow system.

Congenital venous dysplasia occurs as a result of a violation of embryonic development of blood vessels. Most often in clinical practice there are patients of infant and young age with arterio-venous jaws (shunts). Under the influence of arterial pressure, the walls of the veins become thinner, the veins increase considerably in diameter and, more often on the lateral surface of the thigh and lower leg, varicose veins of the subcutaneous and dermal veins appear. Varicose veins often occur on the anterior abdominal wall and in the pubic region. The skin over the dilated veins is hot to the touch. Edema is more often noted in the distal parts of the limb and is of a permanent nature. Patients are constantly worried about the severity of the affected limb. Trophic disorders appear at the age of 25-30 years and are localized on the lateral surface of the shin. The affected limb is longer than healthy by 3-5 cm, characterized by acromegaly, hypertrichosis.

In contrast to varicose veins, patients have vascular spots on the skin in the form of hemangiomas, a venous pulse is detected, and systolic-diastolic noise is often heard in places of arterio-venous anastomosis. The most informative methods of investigation are angiography and ultrasonic duplex angioscanning with color coding.

Disturbance of lymphatic outflow (elephantiasis, lymphadema) develops due to congenital underdevelopment of the lymphatic system of the limbs, or after repeated erysipelas of the skin of the limbs, accompanied by lymphangitis and lymphadenitis. Often, the violation of lymphatic drainage is associated with damage to the lymph vessels and nodes with injuries. Disturbance of lymph drainage leads to lymphatic dilatation of the vessels distal to occlusion, lymphatic stasis occurs.

The disease develops slowly, the swelling grows gradually, becomes dense and does not disappear after horizontal rest. The extremity is sharply increased in volume, the skin is tense, it is not going to fold. Sometimes there is sweat lymph on the skin.

In later cases, edema becomes dense due to the complete replacement of subcutaneous fat with connective tissue. The trophism of tissues is broken, there are eczematous areas, ulcers. In contrast to chronic venous insufficiency, swelling with elephantiasis is constant and dense. There is no mesh of varicose veins. Venous pressure is not increased. According to ultrasound, deep veins are intact. Surface veins are not dilated. Lymphography makes it possible to reveal the level of occlusion and the presence of enlarged lymphatic vessels.

Femoral hernia. The disease is characterized by the appearance of protrusion of a rounded shape, located below the puert ligament. For the femoral hernia may be taken an enlarged venous junction at the site of the large saphenous vein in the femoral. Direction of the hernial protrusion allows you to define the hernial gates. Femoral hernia is characterized by symptoms of coughing and increase in size when straining. Unlike a hernia, if you press a vein below the node with your finger or lift the lower limb, the varicose node collapses.

Acute thrombophlebitis means inflammation of the vein wall, accompanied by the formation of a thrombus in its lumen.

Acute superficial thrombophlebitis of the lower extremities is a complication of varicose and postthrombophlebitic diseases. In connection with this, the term "acute varicothrombophlebitis" is now widely used. The disease has a persistent and often long-term recurrent course. The development of thrombophlebitis is promoted by significant changes in the walls of the veins, enlarged lumen, slowed blood flow, changes in adhesion and aggregation properties of blood elements.

**Classification.**

Allocate: 1. Acute superficial thrombophlebitis in the basin of a large saphenous vein; 2. Acute superficial thrombophlebitis in the basin of a small saphenous vein; 3. Acute superficial thrombophlebitis in the basin of large and small subcutaneous veins. By the prevalence of distinguish: a) local; b) progressive ascending. Also distinguish: uncomplicated and complicated (PE, transition to deep veins, periflebit and paravasalous phlegmon).

**Clinical picture**.

Due to the superficial location of the subcutaneous veins, acute surface thrombophlebitis has a vivid clinical picture. In this case, local symptoms predominate: skin hyperemia, infiltration over the varicose veins, varicosity, pain, absence of a common edema of the limb. The main symptom is pain along the thrombosed vein, which increases with movement, physical activity. When examining a patient in a vertical and horizontal position, the palpable painful cord does not change the size and configuration.

Overall health in most patients remains satisfactory. Particular attention should be paid to the localization of thrombophlebitis. The presence of an inflammatory infiltrate in the projection of the main trunk of large or small subcutaneous veins extending proximally to the mouth is defined as an acute ascending thrombophlebitis. This condition is very dangerous due to the increasing risk of thromboembolic complications (PE). The presence or absence of an ascending character of thrombophlebitis determines the tactics of treatment for each patient. Laboratory diagnosis is assigned an auxiliary value: in blood tests there is leukocytosis, an increase in ESR, a system of hemostasis is investigated. The ultrasound duplex scanning of veins (or ultrasound of veins), which allows to determine with absolute accuracy the extent of thrombosis, its boundaries, establish a fixed thrombus or float (free floats) is crucial in confirming the diagnosis. Later, after determining the tactics of treatment, ultrasound of the abdominal cavity is prescribed (often the cause of thrombophlebitis can be oncological pathology), chest x-ray.

**Differential diagnostic**

Acute surface thrombophlebitis should be differentiated with erysipelas, lymphostasis, primary varicose veins of the surface veins, phlebothrombosis.

Erysipelas is an acute serous, progressive inflammation of the skin, less often of the mucous membranes, caused by streptococci. Allocate: erythmatous, bullous, bullous-necrotic forms of erysipelas. There are pronounced edema, skin hyperemia, a sharp increase in temperature of the local and general, the most severe pain at the slightest touch to the surface of the skin. In the future, "bubbles" (bullae) are formed with ulceration and necrosis of the skin. Unlike superficial thrombophlebitis, the erysipelas does not have any clear localization and connection with the venous system. If necessary, ultrasound of the veins, excluding acute thrombophlebitis.

Lymphangitis is an acute inflammation of the lymphatic vessels, which occurs as a reticular or stem lesion, is a complication of the primary purulent-inflammatory process of the limbs. There is hyperemia in the form of longitudinal bands, patients experience itching, burning. It is very important to identify the primary purulent-inflammatory focus, which can be localized on the fingers, feet or legs. Expansion of superficial veins is absent, in contrast to acute thrombophlebitis.

Lymphostasis is a chronic disease caused by a violation of lymph drainage in the skin, subcutaneous tissue, fascia. The disease develops slowly. During lymphostasis, two stages are distinguished: 1 stage of lymphadema, stage II of fibredema. Lymphostasis is characterized by a gradual thickening of the lower extremities, the nature of the edema is dense, the skin is dry, it does not gather into the folds, there is no network of varicose veins. Violations of trophic tissue lead to the development of maceration and eczematous areas.

Varicose veins of the superficial veins are a disease of the lower limbs, accompanied by the appearance of the tortuosity of the subcutaneous veins, their enlargement, saccular expansion, the gradual development of trophic skin disorders in the form of indurated skin tightening, a change in its color. Varicose veins of the superficial veins without inflammation proceed as a slowly progressing disease with the development of chronic venous insufficiency. On examination and palpation, softly elastic, receding in the horizontal position, enlarged veins, absent infiltration and hyperemia are revealed, which is typical for superficial thrombophlebitis - by the method of ultrasound of the veins, the insufficiency of the perforating and ostial valves is revealed, and the absence of thrombosis.

Phlebthrombosis is a thrombosis of deep vein, manifested by the swelling of the limb edema, pain. The skin acquires a pale cyanotic color. "Centimeter" determines the difference in circumference of the shin and hip compared with a healthy leg. There is no hyperemia and ripple in the projection of superficial veins. The diagnosis is verified by ultrasonic duplex scanning.

Acute phlebothrombosis is an intravital thrombus formation in the lumen of the veins in the absence of inflammation of the vessel wall.

Deep vein thrombosis of the lower extremities almost always leads to serious consequences. The significant diameter of large veins contributes to the formation of embolus thrombosis in them and often leads to pulmonary embolism. In the long term, patients develop posttrombophlebitic disease with varying degrees of chronic venous insufficiency, leading to disability of patients.

**Classification**

 is based on the topical location and extent of thrombus formation in deep veins: 1. deep vein thrombosis of the lower leg; 2. thrombosis of the superficial femoral vein; 3. thrombosis of the common femoral vein; 4. segmental thrombosis of the iliac veins; 5. widespread thrombosis of the ileum-femoral vein; 6. thrombosis of the internal iliac vein system; 7. Thrombosis of the inferior vena cava: a) infrarenal segment, b) renal segment, c) hepatic segment.

**The clinical picture**

 of deep vein thrombosis (DVT) consists of a complex of symptoms characterized by a sudden disturbance of venous outflow while maintaining an influx of arterial blood.

Edema, cyanosis of the affected limb, dilated nature of pain, local skin temperature increase, subcutaneous vein overflow, pain along the vascular bundle are characteristic to varying degrees for acute thrombosis of any localization. Movement in the joints is limited only slightly. General signs of aseptic phlebitis and periphlebitis - subfebrile condition, weakness, adynamia, leukocytosis differ in a large number of patients. The clinical diagnosis in general and the topical, in particular, is based on the analysis of symptoms caused by circulatory disorders and largely depends on the localization of the lesion - shin, femoral vein or pelvic vein.

In the physical examination of patients, positive symptoms of Homans, Moses, and Lovenberg are found. There is an increase in the size of the limb, a network of dilated subcutaneous veins is found on the skin as early as the first day of the disease. The symptomatology of deep vein thrombosis largely depends on the degree of narrowing of the lumen of the thrombus. The most vivid clinical manifestations are observed with complete occlusion of veins.

To determine the topical diagnosis and determine the degree and nature of thrombotic damage, the most informative method of investigation is ultrasonic duplex angioscanning.

The stage of pronounced clinical manifestations of acute venous thrombosis is characterized by edema, bursting character with pains and changes in the coloration of the cutaneous integument of the extremity. Since the swelling of the extremity is the main sign of deep phlebothrombosis, it is therefore more often necessary to differentiate the defeat of deep veins from other pathological conditions accompanied by this symptom.

**Differential diagnostic**

Acute thrombosis of the deep veins of the extremities should be differentiated: with circulatory insufficiency, lymphostasis, anaerobic phlegmon, acute arterial insufficiency, long crush syndrome.

Insufficiency of blood circulation: swelling of the lower extremities develop with severe cardiac pathology, gradually on both legs, accompanied by tachycardia, dyspnea, enlargement of the liver, ascites, oliguria. Swelling of the extremities is loose, pasty. The pain syndrome is not expressed, there is no cyanosis, and the symptoms of Homans and Mozes are negative. The use of cardiac drugs, diuretics in heart failure gives a quick positive effect.

Lymphostasis of the limb develops slowly, beginning with the distal sections. As a rule, it is preceded by such diseases as erysipelas, recurrent lymphangitis, inguinal lymphadenitis, soft tissue tumors, surgical interventions and lesions in the lymphatic drainage zone. Skin covers with lymphostasis are pale, cool. Edema resistant, dense, reaches considerable dimensions. The permeability of the veins with lymphostasis is not broken, there is no pain syndrome, there are no enlarged subcutaneous veins.

Anaerobic phlegmon occurs when anaerobic microorganisms penetrate, due to penetrating soft tissue injuries. Anaerobic phlegmon is characterized by a significant and rapidly progressive swelling of the tissues, the skin becomes brownish-yellow, cyanotic. Assuming the presence of anaerobic phlegmon allows a rapid onset, a strong tearing pain in the limb. The general condition of the patient deteriorates sharply due to intoxication. Patients are nervous, restless, subsequently become apathetic, fall into oblivion. Quickly develops toxic hemolytic anemia. The diagnosis is made on the basis of the rapidly progressive deterioration of the state, severe intoxication, the presence of gas in the tissues, the rapidly increasing edema of the limb and the results of ultrasound and bacteriological studies.

Acute arterial obstruction. The edema of the limb with its ischemia is observed in the late stages. In contrast to DVT, edema with subfascial ischemia. Acute ischemia begins with severe pain, accompanied by loss of sensitivity, cold extremity. Subcutaneous veins are collapsed. Edema of the limb precedes the development of deep paresis. There is no pulsation on the arteries of the affected limb. Muscular contracture and gangrene of the limb are developing rapidly.

The syndrome of prolonged tissue crushing - is ischemic necrosis of the muscles with the subsequent development of acute renal and hepatic insufficiency. The appearance of edema is preceded by a prolonged compression of the soft tissues of the limb. The liberated limb is pale and cold at first. Only the toes are cyanotic. Sharply reduced sensitivity. Pulse on peripheral arteries is not determined. The next day the condition of patients progressively worsens due to autointoxication, lethargy, drowsiness alternating with excitation, vomiting, thirst, back pain, jaundice, nonsense occur. A characteristic symptom is oliguria, urine is red, it determines myoglobin. The tissues of the limb are edematic, dense, tense, active movements are absent, deep sensitivity is disturbed.

а) **List of issues for practical lesson:**

Definition of the term "varicose veins"

Classification of varicose veins in the clinic, etiology, anatomy, pathogemodynamics (CEAP)

What are the causes of the development of primary varicose veins of the lower extremities

List the functional tests that allow you to determine the consistency of the valve apparatus of the veins of the limb and the patency of the deep veins

Instrumental diagnostic methods used in the examination of patients with chronic venous insufficiency

Differential diagnosis of varicose veins with other diseases (elephantiasis, postthrombophlebitis, congenital angiodysplasia, etc.)

What are the methods of prevention of varicose veins?

Possible complications of varicose veins

Methods of treatment of varicose veins

b) **Homework**

Make the table or chart of:

classification of varicose veins;

features of the structure of the valve apparatus of the veins of the limbs;

methods of examination of patients with varicose veins (functional tests);

complications of varicose veins;

methods of surgical treatment of varicose veins of extremities.

c) **Theme of essay for performance at the classroom:**

1. Topography of veins of lower extremities.

2. Pulmonary embolism

3. Modern methods of diagnosis of varicose veins.

4. Modern principles and methods of surgical treatment of varicose veins.

**Tests for homework**

1. The superficial veins of the lower extremities include:

     a) total femoral vein

     b) large saphenous vein

     c) small saphenous vein

     d) superficial femoral vein

     e) the lower leg veins

2. To determine the patency of deep veins of the lower extremities, samples are taken:

     a) Pratt I

     b) Pratt II

     c) Troyanov-Trendelenburg

     d) Fegan

     e) Delbe-Pertes

3. The most informative method of diagnosis of varicose veins is:

     a) sphygmography

     b) thermography of extremities

     c) radioindication with labeled fibrinogen

     d) ultrasonic duplex scanning

     e) phlebography

     f) polarography

4. By what research can the condition of the valvular apparatus of the communicating veins be determined?

     a) Troyanov-Trendelenburg trial

     b) duplex scanning of veins

     c) phlebography

     d) Delbe-Pertes test

     e) Sheinis test

5. What research can reveal the inconsistency of osteal valves of superficial veins?

     a) Sheinis test

     b) the Delbe-Perthes test

     c) Trianov-Trendelenburg trial

     d) Pratt-II trial

     e) Gachenbruch test

     e) duplex scanning

     g) phlebography

6. Complications of varicose veins include:

     a) lymphostasis

     b) bleeding

     c) varicothrombophlebitis

     d) trophic ulcer

     e) PE

7. For congenital venous dysplasia it is characteristic:

     a) transient edema of the limb

     b) an increase in the limb in the volume

     c) skin hyperthermia in the area of ​​dilated veins

     d) presence of dense lymphatic edema

     e) trophic ulcers

8. Elephantiasis (lymphedema) is characterized by clinical symptoms:

     a) varicose veins of the subcutaneous veins

     b) trophic ulcers

     c) transient edema of the limb

     d) dense persistent swelling of the limb

9. Select the operations aimed at eliminating the veno-venous discharge through the perforating veins:

     a) Troyanov-Trendelenburg

     b) Babcock

     c) Coquette

     d) Linton

     e) electrocoagulation of superficial veins

10. Select the surgery to remove the superficial veins of the limb:

     a) Operation of Madelung

     b) Operation of Babcock

     c) Operation Linton

     d) the Troyanov-Trendelenburg operation

     e) Operation of Narat

**COMPLICATIONS OF VARICOSIS**

**Acute thrombophlebitis**

Control questions:

1. What are the causes that lead to the development of acute surface thrombophlebitis?

2. Indicate the main clinical differences between acute varicothrombophlebitis and erysipelas of lower limbs.

3. Name the main clinical symptoms of thrombophlebitis and the methods of its diagnosis.

4. Conduct a differential diagnosis of acute thrombophlebitis with acute phlebothrombosis.

**Tests for homework**

1. Acute varicothrombophlebitis is:

     a) inflammation and thrombosis of large or small subcutaneous veins

     b) thrombosis of the portal vein

     c) phlebitis of the brachial vein

     d) Parkes-Weber-Rubashov disease

     e) aneurysm of the common femoral vein

2. In the diagnosis of acute varicothrombophlebitis, the most informative is:

     a) palpation

     b) phlebography

     c) ultrasound of veins

     d) rheovasography

     e) all methods

3. Acute varicothrombophlebitis is differentiated with all diseases, except:

     a) lymphostasis

     b) erysipelas of inflammation

     c) lymphangitis

     d) obliterating endarteritis

     e) varicose veins

4. Acute varicothrombophlebitis is characterized by everything except:

     a) the presence of the syndrome of "intermittent claudication"

     b) marked swelling of the entire limb

     c) the presence of varicose veins

     d) pain along the thrombosed vein

 e) pain in the lower abdomen

**Acute phlebothrombosis**

Control questions:

1. List the reasons leading to the development of acute deep phlebothrombosis.

2. Name the main clinical manifestations of acute deep phlebothrombosis.

3. Instrumental research methods used in the diagnosis of deep phlebothrombosis.

4. Indicate diseases with which differential diagnosis of acute deep phlebothrombosis should be carried out.

**Tests for homework**

1. In acute deep phlebothrombosis at the level of the shin, the symptoms are positive:

     a) Samuels

     b) Moses

     c) Goldflam

     d) Homansa

     e) Lovenberg

2. The most informative method of instrumental diagnosis of acute deep phlebothrombosis is:

     a) rheovasography

     b) phlebography

     c) duplex angioscanning

     d) radiography

3. Differential diagnosis of acute deep phlebothrombosis of extremities should be carried out with:

     a) erysipelas of the skin

     b) lymphostasis

     c) acute violation of the arterial blood circulation of the limb

     d) syndrome of prolonged tissue crushing

     e) acute radiculitis

4. Ileofemoral phlebothrombosis is characterized by:

     a) pronounced edema of the entire limb

     b) violation of movements in the joints of the limb

     c) increase in the temperature of the skin of the limb

     d) cold extremity

5. Deep phlebothrombosis is characterized by:

     a) reduction of skin sensitivity

     b) increased skin sensitivity

     c) preservation of skin sensitivity

**Methods of control of the homework at the classroom:**

1. The solution of situational problems of different levels of assimilation.

2. Microcirculation of patients with varicose veins (complaints, anamnesis, assessment of general condition, paraclinical methods of examination, diagnosis, differential diagnosis, choice of treatment method).

3. The patient's report to the group.

4. Reading phlebograms.

5. Presentation of micro-abstracts on the subject of the lesson

Savelev V.S.,Phlebology. A guide for doctors. М., 2001.

Evtihov R.М., Putin М.Е., Shulutko А.M. Clinical surgery, 2006

Kuzin М.И. Surgical diseases. Textbook. М.,2006.

Savelev V.S., Kirienko А.I. Surgical diseases. М.,2005.

Acute diffuse peritonitis. Struchkova А.I.,М.,1987.

Lection of department.

Attachment

Answers to tests

|  |  |
| --- | --- |
| 1-b,c | 6-b,c,d,e |
| 2-а,e | 7-b,c,e |
| 3-d,e | 8-d |
| 4-b,c,e | 9-c,d |
| 5-c,e,f,g | 10-а,b,d,e |
| Acute thrombophlebitis |

|  |  |
| --- | --- |
| 1-а | 3-d |
| 2-c | 4-а,b,e |
| Acute phlebothrombosis |
| 1-b,d,e | 4-а |
| 2-c | 5-c |
| 3-b,c,d |  |

**The theme of lessons: “OBLITERATING ARTERIAL DISEASES OF THE EXTREMITIES”**

**The purpose of the lesson**: to learn at the level of reproduction from memory the etiology and pathogenesis of the disease, classification, clinical signs, methods for collecting anamnesis, examination and evaluation of paraclinical diagnostic methods, differential diagnosis.

**To the lesson student should:**

1. Know the classification and clinical manifestations of obliterating diseases of the extremities. Methods of instrumental diagnostics.

2. Understand the etiology, pathogenesis and clinical manifestations of obliterating diseases of the arteries of the extremities.

3. Be able to correctly collect an anamnesis of the disease. Identify the early signs of disease. Evaluate the data of instrumental research methods.

4. Know the differential diagnosis of obliterating diseases of the arteries of the extremities (obliterating endarteritis, obliterating atherosclerosis, Raynaud's disease, Buerger's disease, acute circulatory disturbance in the limbs).

**Theoretical information**

**Classification**.

Obliterative diseases of the arteries of the extremities include:

1. obliterating endarteritis, 2. obliterating atherosclerosis, 3. Raynaud's disease (angiotrophoneurosis), 4. Burger's disease (migrating thromboangiitis). The following stages of the disease are distinguished from the degree of circulatory disturbance in the limb (A.Pokrovsky): 1 - the stage of compensation of blood circulation; 2а stage - subcompensation of blood circulation; 2b stage - initial decompensation of blood circulation; III stage - decompensation of blood circulation; IY stage - destructive changes in the tissues of the limb.

**Clinical picture.** The clinical picture of diseases is determined by the nature of the damage of the vessels of the extremities and the degree of circulatory disturbance in the region, which is supplied by blood vessels. In the first stage of the disease - functional compensation (spastic form) - the patient can pass more than 1000 m before the appearance of intermittent claudication; 2a - the stage of subcompensation, the intensity of intermittent claudication increases and arises when passing 200 meters; 2b stage - the appearance of intermittent claudication occurs when passing from 50 to 200 meters; Stage 3 - the stage of decompensation. Pain in the limbs appear at rest, intermittent claudication occurs when passing 25-50 meters. 4 stage - the stage of destructive changes. The pains in the limbs become permanent, unbearable.

**Differential diagnostic**

Obliterating endarteritis is more common in men under the age of 40 years. Important etiological factors are chronic intoxication, frostbite of limbs, smoking, stress. Patients with obliterating endarteritis have a youthful appearance. The damage begins with small vessels of the extremities, usually after a nervous overexertion and overwork. At the beginning of the disease there is rapid fatigue, cold extremities, paresthesia. As the disease develops, the pain becomes permanent, trophic disorders appear. For obliterating endarteritis, the following symptoms and tests are characteristic: Oppel-Burger symptom, Krakowski's stiffness symptom, Burdenko's symptom, Samuels, Goldflam, Panchenko.

Instrumental diagnostic methods in the early stages of the disease determine changes in pulsation and volume of blood filling of blood vessels, a decrease in blood filling and a decrease in collateral blood flow are noted on the rheovasogram. Dopplerography determines a sharp decrease in the flotation of blood in the peripheral channel. Angiogram marked obliteration of the distal arteries. The walls of the arteries are smooth, and their lumen gradually narrows. Collateral blood flow is not expressed.

In the anamnesis, patients often suffer from infectious diseases. Characteristic for obliterating endarteritis is the appearance of necrosis with preserved pulsations on the femoral and popliteal arteries of the affected limb.

Obliterating atherosclerosis. It develops at the age of over 40 years. The patients look older than their age. The disease develops slowly because it is associated with a violation of carbohydrate and fat metabolism. The appearance of the disease contributes to injury, cooling the body. Often patients have violations of the coronary and cerebral circulation, they suffer from hypertension, diabetes. There is a constant pallor of the skin of the extremities. The circulation of the distal parts of the limbs remains compensated for a long time. Often Lerish's syndrome is identified, that is a blockage at the level of aortic bifurcation and common iliac arteries. As well as with obliterating endarteritis, ischemic symptoms of Samuels, Goldflem, Panchenko, Burdenko and others are expressed. For obliterating atherosclerosis is characterized by a symptom of "empty veins", expressed in the desolation of venous trunks after lifting the lower limbs. Hypercholesterolemia is noted in the blood of patients.

The rheovasogram shows a decrease in blood flow along the main arteries, while the collateral blood flow is preserved. According to the Dopplerography data, a decrease in the flotation index and a defeat of the vessels by a segmental type are noted. Angiograms reveal a dense deformed aorta, edentulous outlines of the main arteries, often there are areas of calcification of blood vessels. There is often no pulse on the femoral vessels. In the absence of a pulse on the femoral arteries, necrosis areas on the foot do not always occur.

Raynaud's disease (angiotrophoneurosis). As a rule, young women (aged 20 to 30 years) psychosthenic constitution, suffer from neurosis. There is a spasm of arterioles of small caliber, especially in the area of ​​phalanges and fingers of the feet, the tip of the nose, ears. Pulse on the peripheral arteries is preserved, large trunks are not affected. Pain, blanching and coldness of the fingertips appear suddenly, are intense often in conditions of low ambient temperature. In later stages, blanching of the skin is replaced by cyanosis and then trophic disorders develop as zones of dry necrosis in the surface layers of the nail phalanges of the fingers. During the exacerbation the symptom with a cold load and a symptom of Krakowski are expressed.

Buerger's disease (migrating thromboangiitis). The disease occurs in young men after a superficial thrombophlebitis. In the course of superficial veins, compaction areas appear in the region of thrombosed inflamed veins with pronounced soreness in palpation. After the acute inflammation subsides, the same thrombophlebitis zones appear in other regions of the superficial venous limb network. After a while (2-6 months), patients noted coldness of the extremities, pallor of the skin, and then expressed signs of violation of the arterial blood supply are intermittent claudication, positive ischemic symptoms, trophic disorders. The cause of the development of the disease is an autoimmune process with epithelial involvement of peripheral vessels with subsequent thrombus formation in their lumen. The clinic and stages of the disease are similar to manifestations with obliterating endarteritis, however, with migrating thromboangiitis, periods of remission and exacerbation of the process are noted. The disease is progressive and often ends with the development of irreversible tissue trophism and gangrene of the extremities.

Acute disturbance of the circulation of the extremities. It develops suddenly. Preceding: atherosclerosis of vessels, myocardial infarction, heart valve flaws, active phase of rheumatism, slowing blood flow, hypercoagulable syndrome, trauma, inflammatory changes in blood vessels. The cause of acute circulatory disorders are thromboses and embolisms.

With embolisms of large arterial trunks, intense pain extends distally from the lesion. The pulse below the obstacle level is absent. The skin is pale, cold to the touch. The motor function of the limb is broken and all kinds of sensitivity, areflexia. The course is progressive, violent.

With a thrombus formation occurring in the lumen of the vessel in the clinic, a prodromal period is observed: convulsions, paresthesia, numbness in the extremities.

With instrumental research, there is a sharp decrease in blood circulation below the blockade level. On arteriograms, the blockade level is seen as a sharp break in the contrasted main vessel. The collateral arterial bed is not determined.

**Control questions:**

1. Causes leading to the development of obliterating endarteritis and obliterating atherosclerosis.

2. Features of vascular lesions characteristic of obliterating endarteritis, atherosclerosis, Raynaud's disease, Buerger's disease.

3. List the angiographic signs, characteristic for obliterating endarteritis and obliterating atherosclerosis.

4. Indicate the features of the clinical course, characteristic of obliterating endarteritis, obliterating atherosclerosis, Buerger's disease, Raynaud's disease.

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

 A patient of 30 years complains of the appearance of strong 2

pains in her fingers, pallor of fingers, feeling of paresthesia.

On examination: the skin of the fingers is pale, cyanotic,

cyanosis of the nails. Pulsation on the radial artery is good.

Positive cold sample. Your diagnosis:

1. Obliterating endarteritis

2. Raynaud's disease

3. Obliterating atherosclerosis

4. Burger's disease

The patient is 41 years old. Has been sick for 3 years. 4

Complains of pain in the right foot. Does not sleep because

of pain. Intermittent claudication after 50 m, paresthesia,

freezing of the right foot. On the 1st finger of the right foot

there is a trophic ulcer. Pulsation on the arteries of the foot is not

determined. On the femoral and popliteal arteries, pulsation

is maintained. Your diagnosis:

1. Obliterating atherosclerosis

2. Post-thrombophlebitic disease

3. Burger's disease

4. Obliterating endarteritis

5. Raynaud's disease

The patient is 62 years old. He has been ill for 15 years. Complaints 3

of pain in the calf muscles when walking. Intermittent claudication

after 100 meters. At night, there is no pain. Trophic disorders on

the limbs are moderately pronounced. The pulse on the femoral

arteries is well defined. Pulse on the popliteal and arteries of the

feet is not determined. Name the stage of obliterating atherosclerosis:

1. 1 stage

2. 2 stage

3. 2b stage

4. 3 stage

5. 4 stage

The patient is 36 years old. Has been sick for 5 years. Complaints of 4

pain in the left lower limb, intermittent claudication. The pain

is permanent. Periodically there is edema of the foot and lower

leg; notes flushing, soreness and tightness along the veins, an

increase in body temperature. When examining the foot and shin

are swollen, the skin is cyanotic-pink in color, along the course of

the subcutaneous veins are dense strands. There is no pulsation of

the arteries of the foot. Indicate the diagnosis:

1. Obliterating atherosclerosis

2. Obliterating endarteritis

3. Raynaud's disease

4. Burger's disease

5. Acute superficial thrombophlebitis

**Class theme:** “Obliterating arterial diseases of the extremities”

**When student prepares to the practical lesson, it is necessary to pay attention to**:

а) **List of issues for practical lesson:**

Definition of the concept of obliterating diseases of the arteries.

Classification of obliterating diseases of the arteries of the extremities by the types and stages of the pathological process.

Causes leading to the development of obliterating endarteritis and obliterating atherosclerosis.

Features of the vascular lesions are characteristic for obliterating endarteritis, atherosclerosis, Raynaud's disease, Buerger's disease.

List the angiographic signs characteristic of obliterating endarteritis and obliterating atherosclerosis.

Specify the features of the clinical course, characteristic for obliterating endarteritis, obliterating atherosclerosis, Buerger's disease, Raynaud's disease.

Differential diagnosis of obliterating diseases of arteries of extremities (obliterating atherosclerosis, endarteritis, Raynaud's disease, Burger's disease). The importance of ultrasound in the differential diagnosis of obliterating diseases of the arteries.

Conservative and operative treatment of obliterating atherosclerosis.

b) **Homework:**

     Make chart or table of:

anatomical structure of arterial bed of extremities;

clinical classification of obliterating diseases;

functional methods of examination of patients with arterial pathology;

principles of treatment of obliterating diseases of arteries;

methods of surgical treatment of obliterating diseases of arteries of extremities.

c) **Theme of essay for performance at the classroom:**

1. Topographic anatomy of the arteries of the lower extremities.

2. Modern methods of examination of patients with pathology of the arteries of the extremities.

3. Conservative treatment of obliterating diseases of extremities.

4. Modern methods of surgical treatment of obliterating diseases of extremities.

**Tests for homework**

1. Lerish's syndrome is:

     a) brachiocephalic nonspecific arteritis

     b) atherosclerotic occlusion of the bifurcation of the abdominal aorta

     c) capillaropathy of the distal parts of the limb

     d) migrating thromboangiitis

     e) occlusion of the inferior vena cava

2. The symptom of "plantar ischemia" is not typical for:

     a) postthrombophlebitic disease

     b) obliterating atherosclerosis

     c) Raynaud's disease

     d) obliterating endarteritis

     e) diabetic angiopathy

3. In the diagnosis of obliterating atherosclerosis the most informative method is:

     a) sphygmography

     b) thermography

     c) ultrasonic dopplerography

     d) aorto-arteriography

     e) rheovasography

4. When surgical treatment of Lerish's syndrome the best method is:

     a) lumbar sympathectomy for Dietsu

     b) thrombectomy with Fogarty catheter

     c) thoracic sympathectomy for Ognev

     d) angioplasty

     e) aorto-bifemoral shunting

5. With obliterating endarteritis, the most commonly affected is:

     a) aortic arch and brachiocephalic trunk

     b) thoracic aorta

     c) lower leg arteries

     d) aortic bifurcation

     e) femoral arteries

6. Chronic arterial ischemia is characterized by everything except:

     a) baldness of the limb

     b) skin pigmentation

     c) deformation of the nails

     d) skin atrophy

     e) cyanosis of the 1st finger

7. High "intermittent claudication" and impotence are signs of:

     a) Raynaud's disease

     b) diabetic angiopathy

     c) obliterating endarteritis

     d) Lerish syndrome

     e) ileofemoral phlebothrombosis

8. In a patient with obliterating atherosclerosis of the IY stage, occlusion of the femoral, popliteal and tibial arteries, gangrene of the foot the operation of choice is:

     a) amputation at the hip level

     b) lumbar sympathectomy

     c) reconstructive vascular surgery

     d) microsurgical transplantation of a large epiploon on the shank

     e) conservative treatment

9. Obliterating atherosclerosis III stage is characterized by:

     a) varicose veins of the subcutaneous veins

     b) trophic ulcer on the shin

     c) "intermittent claudication" after 500 meters

     d) absence of pulsation on the common carotid artery

     e) pain in the limb at rest

10. The most effective drug for the treatment of obliterating diseases of the arteries and diabetic angiopathy is:

    a) papaverine

    b) heparin

    c) vazoprostane

    d) troxevasin

    e) trental

**Methods of control of the homework at the classroom:**

 1. The solution of situational tasks of different levels of assimilation

 2. Curation of patients with evaluation of the results of their examination:

а) collecting complaints, studying anamnesis;

b) assessment of the general condition of the patient;

c) identification of local signs and symptoms of a disease;

d) assessment of paraclinical studies on the history of the disease;

e) differential diagnostic;

f) conclusions on diagnosis

g) principles of conservative and operative treatment

h) definition of treatment tactics

 3. Show patient to group.

 4. Reading and analysis of radiographs

 5. Performance with essay.

**Literature**

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Lection of department.

Attachment

Answers to tests

|  |  |
| --- | --- |
| 1-b | 6-b |
| 2-а | 7-d |
| 3-d | 8-а |
| 4-e | 9-e |
| 5-c | 10-c |

**Theme of the lessons**: **"DISEASES OF THE THYROID GLAND"**

**The purpose of the lesson:** to acquire at the level of reproduction from memory the etiology, pathogenesis, clinic and diagnosis of endemic, sporadic and diffuse toxic goiter, thyroiditis, thyroid cancer, learn to conduct differential diagnosis of these diseases.

**The student must:**

1. Know the classification of thyroid diseases: clinical a picture of endemic, sporadic, diffuse-toxic goiter, acute and chronic thyroiditis, thyroid cancer; methods instrumental and laboratory diagnostics of diseases thyroid gland.

2. Understand the features of the etiology and pathogenesis of diseases thyroid gland.

3. Be able to collect anamnesis, to reveal the objective symptoms of the disease thyroid gland, evaluate the data of instrumental and laboratory research methods required for differential diagnosis of thyroid diseases.

**Theoretical information.**

ENDEMIC AND SPORADIC GOITER.

The goiter is a limited or diffuse enlargement of the thyroid. Endemic goiter occurs in people living in geographical areas, the biosphere of which is poor in iodine, while the incidence of an adult the population of goiter is more than 10%.

Classification of diseases of the thyroid gland, includes:

1. Congenital malformations of the thyroid gland

2. Endemic goiter (and endemic cretinism)

3. The sporadic goiter

4. Diffuse toxic goiter

5. Inflammatory diseases of the thyroid gland (acute and chronic thyroiditis)

6. Damage

7. Malignant tumors

There are five degrees of increase in the thyroid gland. 0 degree - the thyroid gland is almost not palpable; I degree – the gland palpable, but not noticeable when swallowing; II degree – the gland easily palpable and visible when swallowing; III degree - there is a diffuse an increase in the soft tissues of the anterior surface of the neck - a "thick neck"; IV degree - clearly pronounced goiter, the contours of the gland are visible; V degree - a huge, overflowing or hanging on the chest, goiter. According to the form of the enlargement they distinguish: diffuse, nodal and mixed goiter. In functional terms - euthyroid (with normal function of the thyroid gland), hypothyroid (with a diminished function) and hypothyroidism with signs of cretinism.

In terms of severity, they are: light, medium and heavy thyrotoxicosis. According to the stages of the disease (according to Sh. Milk): neurotic, neurohormonal, visceral and dystrophic.

Sporadic goiter develops in areas with sufficient intake of iodine into the body and occurs as a result of insufficient absorption of iodine in the intestines, hormonal disorders, etc. As an endemic goiter, sporadic is classified by size, shape and functional manifestations. The clinical picture of it does not differ from the clinical picture of endemic goiter.

Partly retrograde, retro-tracheal, epiglottis, laryngeal, lingual additional thyroid glands.

**The clinical picture** of euthyroid goiter is very poor: complaints about feeling uncomfortable in the neck, difficulty breathing, less changes in the voice. Respiratory failure is the most common symptom of retrosternal goitre. Upon inspection of these patients it is possible to note expansion of veins of the neck. Violation of breathing causes the development of changes characterized as "goiter heart". Compression of the sympathetic trunk causes the appearance of Gorner's syndrome (ptosis, myosis, enophthalmos), a change in the sweating of the half of the body on the side of compression. With palpation, the thyroid gland is soft, more often unevenly enlarged, mobile. Ultrasound and radioisotope scanning to determine the nature of the increase in thyroid cancer. X-ray examination allows you to set the delay of barium at the level of aberrant goiter, esophageal displacement in the anterior or lateral direction.

 Diffuse toxic goiter. The disease develops acutely, often the cause is a mental trauma.

The main symptoms of the disease are diffuse thyroid enlargement, tachycardia, exophthalmos. Patients complain of General weakness, irritability, weeping, fatigue. Objectively noted the tension, fine tremor of the fingers. The thyroid gland is moderate density, mobile, painless. It determines the positive eye symptoms of: Grefe, Kocher, Dalrymple, Mebius, Stellwag. Absorption of radioactive iodine increased by 4.6 and 24 hours. On ultrasound gland is diffusely enlarged. The concentration of total T4, free T3 and TSH are elevated in almost all patients.

THYROID CANCER

Thyroid cancer can occur in children's and youthful age, but more often after 40 years. Women are sick 4 times more often than men. The most common forms are differentiated forms of thyroid cancer, which include papillary (62%) and follicular (18%) cancer. The undifferentiated form (giant cell, solid, small cell and large cell carcinoma) are observed less frequently.

The most benign course has papillary thyroid cancer. It manifests itself usually in the form of a single dense node in the thyroid gland, rarely see multiple nodes. metastasizes to the cervical lymph nodes, metastases are rarely observed in the second fraction of the thyroid gland, rarely in bones and lungs. Tumor growth is very slow. In the surrounding tissue grows late, in the presence of metastases in the lymph nodes of the neck, the latter also remain mobile for a long time. Usually euthyroid state is kept.

 Follicular cancer – the solid, rounded forms, the node metastasizes to bone, lung, rarely in brain. Cancer of the additional (aberrant) thyroid glands located along the sternum-clavicle-mastoid muscles is usually observed in young adults, develops slowly. It has papillary or papillary-follicular structure.

 Classification. There are four clinical stages of malignant tumors of the thyroid gland: stage 1 – a small tumor in one of the lobes of the gland without metastases; stage 2 – a tumor of the same size, but there are operable metastases in the cervical lymph nodes; stage 3 – a small tumor with inoperable regional metastases or large, stationary, a tumor with or without metastases; stage 4-a fixed or floating tumor with distant metastases.

A method of diagnosing thyroid cancer is its radioisotope study. Radioactive iodine does not accumulate or poorly accumulates in tumor tissues. Ultrasonography has a diagnostic value in the study of formation in a thyroid gland which exceeds the value of 0.5 cm. Puncture site сytology increases the diagnostic accuracy. In undifferentiated forms of cancer by radioimmunological method a change in the level of calcitonin is revealed. The final diagnosis is based on histological examination.

THYROIDITISES

Thyroiditis is autoimmune (Hashimoto thyroiditis). The disease is based on the formation of autoimmune antibodies to thyroglobulin and thyroid tissues.

 There is slow growth, more or less dense goiter, weakness, gradually developing hypothyroidism, there are symptoms associated with compression of surrounding tissues. Goiter with surrounding tissues is not soldered, its surface is smooth, but sometimes hilly. The neck lymph nodes are not enlarged. Often there are atypical clinical forms of the disease: there is a slight thyrotoxicosis, in the future, a one-sided process, proceeding by the type of nodular nontoxic goiter.

In the diagnosis of autoimmune goiter in detecting the increase in the level of gamma-globulins, mosaicity of the scanning image, a positive reaction to the prednisolone test-reducing the size of the goiter play a role.

Thyroiditis chronic fibrous (Riedel's goiter). The thyroid gland develops a chronic productive process with the proliferation of connective tissue, lymphoid cell infiltrates, often with an admixture of eosinophilic leukocytes.

Clinically, gradual enlargement and consolidation of the thyroid gland are revealed. At least – one of its shares. The surface of the gland is uneven, the goiter is very dense - "iron", in far-gone cases, it is soldered with the surrounding tissues, the skin above the goiter is movable, the neck lymph nodes are not enlarged. Palpation is painless, but sometimes there is pain, irradiating in the ear, hoarseness of the voice, violation of swallowing and dry cough, which is associated with the involvement in the process of laryngeal nerves, esophagus and trachea.

 Acute suppurative thyroiditis develops if you get an infection in the thyroid gland by hematogenous.

The disease begins acutely. Worry spontaneous, sharp pain in the neck, increasing in movement, conversation and swallowing. Chills, high fever, painful, initially dense, then fluctuating swelling in the neck. General weakness, sweating, tachycardia. Leukocytosis, elevated erythrocyte sedimentation rate. The accumulation of iodine-131 is normal or reduced.

Thyroditis subacute. Refers to viral diseases. The disease is often preceded by influenza, measles, sore throat. In the area of the anterior surface of the neck, pain occurs, irradiating the lower jaw, ears, the posterior surface of the neck. Noted: General weakness, sweating, fever and chills. The gland is dense, tense and sharply painful. In the blood the increase in ESR is determined.

**Differential diagnosis.**

Thyroiditis of different types must be differentiated from diffuse toxic goiter. A common symptom is diffuse enlargement of the thyroid gland. Unlike thyroiditis in diffuse toxic goiter thyroid gland in palpation is painless. The signs of hyperthyroidism, positive symptoms Dalrymple, Grefe, Stellwag, Mebius are defined. There are no signs of an inflammatory reaction in the blood test. Uptake of radioactive iodine increased, and the level of T4 and T3 is increased in almost all patients.

 Nodular forms of endemic and sporadic goiter should be differentiated from thyroid cancer. Thyroid cancer is determined by the dense hilly formation, relatively fast growing. In later stages it is a little mobile, soldered with the surrounding tissues. There is pain, irradiating the shoulder, ear or neck, difficulty swallowing, voice changes, dilatation of the subcutaneous veins of the neck, face, chest, Gorner's syndrome. There are metastases in the lymph nodes of the neck, lungs, mediastinum and bone. During scanning the cold nodes are determined. Ultrasound reveals signs of malignancy of the node at the size more than 5 mm Fine-needle biopsy allows to perform a cytological examination.

 Unlike thyroid cancer, endemic and sporadic goiter is not accompanied by the damage of regional lymph nodes. When scanning nodular forms of these disease accumulate radioactive iodine – "hot" foci.

**Control questions:**

1. Causes leading to the development of endemic goiter.

2. Causes leading to the development of chronic thyroiditis.

3. Clinical picture of diffuse toxic goiter.

4. Clinical picture of thyroid cancer.

5. Instrumental and laboratory diagnostic methods used in diseases of the thyroid gland.

6. Methods of instrumental diagnostics used in thyroid cancer.

**When student prepares to the practical lesson, it is necessary to pay attention to**:

а) **List of issues for practical lesson:**

Causes leading to the development of endemic goiter.

      Causes leading to the development of chronic thyroiditis.

      Clinical picture of diffuse toxic goiter.

      Clinical picture of thyroid cancer.

      Instrumental and laboratory diagnostic methods used in diseases of the thyroid gland.

      Methods of instrumental diagnostics used in thyroid cancer.

b) **Homework:**

Make the table or charts of:

classification of diseases of the thyroid gland;

blood supply of the thyroid gland;

differential diagnosis of goiter, cancer;

complications of thyroid cancer;

methods of surgical treatment of goiter and thyroid cancer.

c) **Theme of essay for performance at the classroom:**

1. Fascias of the neck.

2. Topographical anatomy of the thyroid gland.

3. Modern methods of diagnosing thyroid diseases.

4. Methods of surgical treatment of goiter and thyroid cancer.

**Tests for homework**

1. In a patient with an endemic diffuse goiter, the enlarged right lobe of the thyroid gland is visible. Specify the degree of enlargement of the thyroid gland to which this clinical picture corresponds:

     a) degree 1

     b) degree 2

     c) degree 3

     d) degree 4

     e) degree 5

2. For endemic goiter, scanning is characterized by the identification of foci of increased accumulation of the iodine isotope 131:

     a) yes, it is

     b) no, it isn’t

3. Positive eye symptoms of Delrymple, Stelvag, Gref, Moebius are characteristic for:

     a) hypothyroidism

     b) goiter of the II degree

     c) hyperthyroidism

     d) thyroid cancer

4. The main laboratory signs of diffuse toxic goiter are:

     a) decrease in the level of calcium in the blood

     b) increased TSH and T3

     c) increase in T4 and T3

     d) decrease in T4 and T3

5. Appearance of the symptom "hoarseness of the voice" in Riedel's goit is explained:

     a) involvement of the facial nerve

     b) involvement of the trachea and esophagus

     c) the presence of metastases

     d) involvement of the laryngeal nerves

6. Name the clinical symptoms of chronic fibrotic thyroiditis:

     a) with dense palpation of iron

     b) the skin above the goitre is mobile

     c) lymph nodes of the neck are enlarged, inactive

     d) there is a hoarse voice

7. Cramps, a symptom of Chvostek and Trusso after a strumectomy say about:

     a) hypothyroidism

     b) thyrotoxic crisis

     c) trauma of the laryngeal nerves

     d) hypoparathyroidism

     e) thyrotoxicosis

8. Complications that are not typical for operations on the thyroid gland are:

     a) bleeding

     b) air embolism

     c) fat embolism

     d) damage to the trachea

     e) damage to the recurrent nerve

9. For the detection of malignant tumors of the thyroid gland is not applied:

     a) trepanobiopsy

     b) needle biopsy with a thick needle

     c) trial excision

     d) determination of thyroid antibody titer

     e) fine needle needle biopsy

10. For toxic thyroid adenoma the operation is shown:

     a) subtotal resection of the thyroid gland

     b) resection of the thyroid gland

     c) resection of the thyroid gland

**Methods of control of the homework at the classroom:**

 1. The solution of situational tasks of different levels of assimilation

 2. Curation of patients with evaluation of the results of their examination:

а) collecting complaints, studying anamnesis;

b) assessment of the general condition of the patient;

c) identification of local signs and symptoms of a disease;

d) assessment of paraclinical studies on the history of the disease;

e) differential diagnostic;

f) conclusions on diagnosis

g) principles of conservative and operative treatment

h) definition of treatment tactics

 3. Show patient to group.

 4. Reading and analysis of radiographs

 5. Performance with essay.

**Literature**

1. Evtikhov RM, Putin ME, Shulutko AM and others. Clinical surgery. Ed. «GEOTAR-MEDIA», 2006.

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5. Lectures of the department.

Attachment

Answers to tests

|  |  |
| --- | --- |
| 1-c | 6-а,b,d |
| 2-b | 7-d |
| 3-c | 8-c |
| 4-c | 9-e |
| 5-d | 10-b |

**The theme of lessons: “Esophagus diseases”**

**When student prepares to the practical lesson, it is necessary to pay attention to**:

а) **List of issues for practical lesson:**

Predisposing factors contributing to the development of esophageal cancer

What are the main clinical signs of esophageal cancer?

Specify, than the radiological picture of achalasia of a cardia differs from a cancer of an esophagus.

Instrumental research methods used in diseases of the esophagus

b) **Homework:**

Make the table or charts of:

classification of diseases of the esophagus;

differential diagnostics;

blood supply to the esophagus;

complications;

methods of surgical treatment.

c) **Theme of essay for performance at the classroom:**

1. Surgical anatomy of the esophagus.

2. Methods of diagnosis of diseases of the esophagus.

3. Principles of surgical treatment of esophageal cancer.

4. Complications of hernia of the esophageal aperture of the diaphragm.

**Tests for homework**

1.In the initial stages of cancer of the esophagus during X-ray examination, one finds:

     a) violation of esophageal motility

     b) a symptom of a "niche"

     c) Stiffness of the wall section

     d) non-expansion of the folds of the mucosa

     e) significant expansion of the overlying department

2. The main method of differential diagnosis of esophageal diverticula is:

     a) esophagoscopy

     b) contrast X-ray examination

     c) ultrasound

     d) radionuclide study

     e) computed tomography

3. Centerer's diverticulum of the esophagus is localized:

     a) in the field of tracheal bifurcation

     b) above the diaphragm

     c) in the upper third of the esophagus

     d) in the pharyngeal-esophageal transition

4. The most dangerous complication of a hernia of the esophageal aperture of the diaphragm is:

     a) gastric bleeding

     b) Insufficiency of the cardia

     c) strangulation of the stomach

     d) reflux esophagitis

5. Radiological signs of achalasia cardia are all except:

     a) a considerable length of the narrowed part of the esophagus

     b) a symptom of a "niche"

     c) accumulation defect

     d) a symptom of the "mouse tail"

     e) rigidity and non-expansion of the folds of the mucosa in the affected area

6. When diverticulitis cervical esophagus shows:

     a) intussusception of the diverticulum

     b) probe power supply

     c) removal of the diverticulum

     d) endoscopic dissection at the site of narrowing below the diverticulum

     e) all of the above

7. In patients with convoluted and multiple post-burn strictures of the esophagus, bougie preference is given:

     a) "blind" through the mouth

     b) under the control of an esophagoscope

     c) retrograde

     d) hollow radiocontrast bougies on a metal conductor

     e) "bougie without end" through the gastrostomy

8. What degree of dysphagia does the clinic correspond to, if any food passes, but the patient has to drink water with it?

     a) 2 degrees

     b) 3 degrees

     c) 4th degree

9. What are the contraindications to radical surgery for esophageal cancer:

     a) the presence of concomitant diseases

     b) exhaustion

     c) cardiac and respiratory insufficiency

     d) marked hepatic and renal insufficiency

10. When localizing a tumor in the lower thoracic or abdominal department of the esophagus, the operation of choice is:

     a) Dobromyslov-Torek's operation

     b) resection of the esophagus and proximal stomach

     c) Lewis operation

**Methods of control of the homework at the classroom:**

 1. The solution of situational tasks of different levels of assimilation

 2. Curation of patients with evaluation of the results of their examination:

а) collecting complaints, studying anamnesis;

b) assessment of the general condition of the patient;

c) identification of local signs and symptoms of a disease;

d) assessment of paraclinical studies on the history of the disease;

e) differential diagnostic;

f) conclusions on diagnosis

g) principles of conservative and operative treatment

h) definition of treatment tactics

 3. Show patient to group.

 4. Reading and analysis of radiographs

 5. Performance with essay.

**Literature**

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6. Lectures of the department.

Attachment

Answers to tests

|  |  |
| --- | --- |
| 1-а,c,d | 6-c |
| 2-b | 7-e |
| 3-d | 8-а |
| 4-а | 9- b,c,d |
| 5-b,c,d | 10-b |

**The theme of lessons “NONSPECIFIC SUPPURATIVE LUNG DESEASES”**

**The purpose of the lesson:** learn at the level of reproduction from memory the etiopathogenesis, classification, clinical signs, complications of acute purulent-destructive lung diseases methods of examination, diagnosis, differential diagnosis of suppurative lung diseases.

To the lesson student should:

1. Know the classification, clinical signs, methods of instrumental and laboratory diagnosis, the nature of complications, suppurative diseases of the lungs.

2. Understand the etiopathogenesis of acute purulent-destructive lung diseases, the relationship between clinical manifestations and the phase of the process.

3. Be able to perform physical examination, to evaluate the data of laboratory and instrumental examination of patients with purulent-destructive lung diseases, which is necessary for differential diagnosis with lung cancer, echinococcosis, bronchoectatic disease.

**Theoretical information**

ABSESSES AND GAGRENA LUNG

The abscess and gangrene of the lungs as separate nosological forms were singled out by Laennec in 1819. He also made the first description of lung gangrene as the most severe form of pulmonary pathology. Sauerbruch proposed to combine these diseases under the general name "pulmonary suppuration." The first information on the pathogenesis of lung gangrene was published in 1871 by L. Traube.

Lung abscess is a purulent or putrefactive disintegration of the lung tissue, more often within the segment with the presence of one or more destruction cavities filled with thick or liquid pus and surrounded by perifocal infiltration of the lung tissue. Gangrene of the lung is a purulent-putrefactive necrosis of a significant area of ​​lung tissue, more often a lobe, 2 lobes or the entire lung, without clear signs of demarcation, which tends to spread further and manifests itself as an extremely difficult general condition of the patient. In contrast to the abscess, the cavity with gangrene of the lung contains the sequestration of the lung tissue.

**Classification.** Distinguish:

1. On the etiology:

a) primary and secondary abscesses

b) aerobic and anaerobic abscesses.

2. By pathogenesis:

a) aerogenic-aspirating

b) hematogenous-embolic

c) traumatic

d) septic

3. By the flow:

a) acute

b) chronic

4. Localization:

a) near-wall

b) median

c) deep solitary, multiple

5. By the nature of the course: a) uncomplicated b) complicated (pleural empyema, pulmonary hemorrhage, sepsis, etc.).

Predisposing factors of pulmonary suppuration are well known: unconsciousness, alcoholism, drug addiction, epilepsy, craniocerebral trauma, cerebrovascular disorders, coma, overdose of sedatives, general anesthesia. In addition, stenosing diseases of the esophagus, immunodeficiency conditions.

The incidence of lung abscesses is quite high for pneumonia (2 to 5%), closed chest injuries (1.5-2%), gunshot wounds (1.5%).

Acute infectious lung destruction is usually nonspecific but sometimes there are mixed forms when nonspecific and specific infectious processes develop simultaneously. At present, gram-negative and anaerobic microorganisms, as well as staphylococcus, are the most frequently detected in infectious lung destruction. However, for the emergence of infectious lung destruction, it is not enough simply to get pathogenic microorganisms into the pulmonary parenchyma, since with the well-preserved purifying function of the tracheo-bronchial tree under normal functioning of local and general defense mechanisms, microbial invasion has no clinical manifestations. For the development of abscess and gangrene of the lung, the impact of pathogenic factors that violate these mechanisms is necessary. These include: high virulence pathogenic microflora; violation of patency and drainage function of the bronchi; disorders of microcirculation in the zone of infectious or post-traumatic inflammation of the lung tissue.

**The clinical picture** of infectious lung destruction is very diverse and depends on the individual (including immunological) features of the body, the stage of the process, the presence of predisposing and accompanying diseases.

There are two periods in the clinical picture: the period of the purulent cavity formation before its breakthrough in the bronchus (closed or blocked stage) and the period after the breakthrough of the abscess into the bronchial tree (open or deblocked stage). During the formation of the infiltrate, the clinic of intoxication dominates in patients - weakness, headache, dry cough, high fever with a hectic range, chills, tachypnea (CDP is up to 40 per min.). Locally there is dull pain in the chest on the side of the lesion, dullness of the percussion sound, weakened bronchial breathing above the infiltration zone.In the debloked stage suddenly appears a large number of three-layered with putrefactive smell of phlegm full mouth. Most often, the deblocking of the abscess is not sudden, and within 2-3 days the patient notes a gradual increase in the amount of sputum, a decrease, at the same time, the degree of intoxication, improvement in well-being, and a decrease in temperature. X-ray in the infiltration area begins to determine the cavity with the level of fluid, which, with a favorable course of the process for 5-7 days gradually decreases. In the peripheral blood, leukocytosis and the stab-shear shift of the formula disappear.

In a number of cases with acute abscess the process does not end safely with the collapse of the cavity, and the abscess passes into a chronic form. The reasons for this are as follows: 1. impaired permeability of the draining bronchus and, as a result, an insufficient outflow of pus from the cavity; 2. presence in the cavity of the abscess of dense, necrotic fragments of the pulmonary parenchyma, necrotic sequesters; 3. increased pressure in the cavity with cough and a wide lumen of the draining bronchus; 4. the formation of pleural clefts, which hamper the collapse of the cavity; 5. when it is inadequately drained.

 With gangrene (gangrenous abscess) of the lung, the clinical picture of the disease is characterized, in contrast to the described, by a severe condition of the patient, in which pronounced intoxication occurs until the development of septic shock, respiratory failure, and often signs of multiple organ failure. As a rule, it occurs in subjects weakened by somatic diseases, or with mental disorders (alcoholism, drug addicts, toxic addicts), aspiration mechanism of microorganisms penetration into the pulmonary parenchyma. The condition of patients resembles a septic shock with centralization of blood circulation, acrocyanosis, tachycardia and lowering of arterial pressure, confused consciousness, which practically does not occur in an abscess. Characteristic is the allocation of a small amount of serous sputum and a sharp putrefactive odor from the mouth. The affected side of the chest lags behind when breathing. The physical data depend on the volume of necrosis of the lung tissue and the severity of the decay - dullness of the percussion sound, its boxed shade above the destruction cavity located subcortically; at auscultation - significant attenuation (absence) of respiratory noises, an amphoric shade over the cavity draining through the bronchus, various moist wheezing. Radiographically determined total infiltrative darkening of the lung without cavities. Abscess and gangrene, in fact, are different types of destructive inflammatory process in the pulmonary parenchyma, but abscess is dominated by purulent melting, and with gangrene - necrosis of lung tissue.

Diagnosis of infectious destruction of the lung is established on the basis of anamnesis, assessment of clinical manifestations, data of laboratory and rentgenological studies. The main source of verification of diagnosis is the data of X-ray studies - fluoroscopy, radiography, tomography. Last decades are characterized by active introduction of methods of the digital medical image in diagnostics of pulmonary suppuration. The leading role in this, no doubt, is computed tomography (CT). On the one hand, it provides invaluable help in the differential diagnosis of cavities of the lungs. On the other hand, under the control of CT, it is possible to conduct a biopsy of solid lung formations, drainage of purulent cavities with an internal pulmonary disposition and a "difficult" trajectory of access to education. Without systematic repeated radiographic examination (after 1-2 days), it is difficult to evaluate the effectiveness of the treatment and to correct the treatment.

In the list of obligatory instrumental studies, it is necessary to note bronchoscopy, which allows to exclude the tumor nature of the process, to take a material intake for bacteriological and cytological research. Fibroblochoscopy in combination with perrubronchial biopsy from the wall of cavity formation should be preferred to such an invasive study as transthoracic transpulmonary biopsy of the abscess wall. Much later, an ultrasonographic study took place in the diagnostic arsenal of pulmonary surgery. A valuable diagnostic method is bronchial arteriography. Catheterization of the bronchial artery and other branches of the aorta is carried out by means of wadded access according to the method of Seldinger. In acute lung abscess, hypervascularization of the lung tissue develops with a significant increase in peripheral branches and an intensive parenchymal phase of contrast. Expansion, tortuosity of bronchial-pulmonary messages are characteristic for a chronic abscess. For gangrene of the lung, a hypovascular variant of the blood supply of the pathological zone is characteristic.

Among the laboratory methods of research it is necessary to isolate bacteriological ones, since they influence the choice of the optimal volume of etiotropic therapy.

**Differential diagnostic**

Differential diagnosis of infectious lung destruction is very difficult due to the variety of clinical manifestations of the disease in different periods.

Quite often an abscess needs to be differentiated from lung cancer. In contrast to abscess, lung cancer is characterized by a prolonged course, a multi-month period of subfebrile condition, an increase in the "small symptoms syndrome," with a meager amount of mucocutaneous sputum, the connection of hemoptysis, the absence of three-layered sputum, as in abscess. During lung cancer there is no abscess-specific phase flow. When a bronchial tumor becomes obstructed and the atelectasis of the lobe develops, the chest wall becomes less horizontal, lagging behind in the act of breathing, and retraction and contraction of the intercostal spaces. In sputum and in bronchial washes, 83% of cases show abnormal cells. The blood is characterized by an increase in ESR up to 60-70 mm / h, leukopenia, hypochromic anemia. In the X-ray study, the tumor is dense, with uneven contours, does not contain the level of fluid, there are signs of cancer lymphangitis (a symptom of the mustache).

In some cases, it is necessary to differentiate the lung abscess from echinococcosis. Specific epidemic data - living in an endemic echinococcus terrain. The first, preclinical period is characterized by complaints of episodic manifestations of urticaria, non-localized pain in the chest, a rare dry cough. When a blood test, as a rule, there is eosinophilia (20-25%), there is a positive reaction latex agglutination on antibodies to echinococcus. Radiographic examination determines cavity fluid formation with thin walls, sometimes a sickle-shaped shadow is seen with an exfoliated chitinous membrane.

It is necessary to differentiate the lung abscess from bronchoectatic disease. The latter often flows for a long time, from a child's age. With bronchoectatic disease, there are occasional exacerbations with febrile fever, a cough with a small amount of purulent sputum. Patients have signs of chronic purulent intoxication - puffiness of the face, thinning, nail plates in the form of hourglasses. Often, the course of the disease is complicated by amyloid disease, in which kidney damage is most often seen with the transition to a chronic form of kidney failure. The westernization of the healthy side of the chest, the dullness of the percussion sound, multiple small and medium bubbling rales are physically noted. Radiographically determined diffuse enhancement of the pulmonary pattern, increased structure of the lung root. More precisely, the diagnosis is possible with tomo- or bronchography, which allows to identify the location and type of bronchiectasis.

Differential diagnostics of acute lung abscesses with various kinds of pleural effusion limited to the pleura and so-called pleuropulmonary cavities, in which one of the walls of the cavity is disintegrating lung tissue, the other is a parietal pleura (empyema of the pleura with destruction of the lung), sub-diaphragmatic abscesses. The most informative in such cases is ultrasound and computed tomography.

BRONCHOECTATIC DISEASE

Bronchiectasis (from the Greek ectaz - stretching) is a morphological concept, denoting persistent pathological enlargement and deformation of the bronchi.

Congenital bronchiectasis is a consequence of abnormal development of not only the tree, but also the respiratory parts of the lung. They are often combined with the developmental defects of other systems and organs. Therefore, they should be considered as an integral part of the characteristic complex of pathological changes that develop as a consequence of embryogenesis disorders: cystic lung hypoplasia, Zivert-Kartagener syndrome (bronchiectasis, pansinuitis, "mirror lung"), Turpin syndrome (bronchiectasis, esophagus, vertebral and vertebral development defects). Sometimes there is a combination of congenital bronchiectasis with polycystic pancreas, cleft upper lip, deaf-mute, congenital heart disease.

Persistent extensions of small peripheral bronchi can develop due to pathological processes in surrounding tissues (chronic abscess, fibrous-cavernous tuberculosis, chronic pneumonia). Such bronchiectasis is usually called secondary, emphasizing that this pathological process is a consequence and an integral part of the underlying disease.

Bronchoectatic disease is an acquired disease characterized by chronic purulent inflammation that affects the entire thickness of the bronchial wall with an irreversible change in its structure and function, which usually occurs in the lower parts of the lungs. It is a pathology of mainly childhood.

The leading role in the development of bronchiectasis has a violation of the patency of the bronchi (medium and small), leading to the formation of obturation atelectasis. Some of the patients have a congenital predisposition to collapse the walls of the bronchus (hypoplasia of cartilaginous rings and smooth muscle fibers), increased viscosity of sputum (with mucoviscedosis), with the formation of dense mucous plugs, obturating the lumen of the bronchi. In children, the flexible wall of the bronchus is often squeezed by enlarged lymph nodes with bronchoadenitis, more often tuberculosis, pneumonia, especially measles, and other respiratory infections that cause hyperplasia of the lymphoid tissue. Below the place of obturation, a bronchial secret begins to accumulate.

**Classification of bronchiectasises**

I. By origin:

1. Congenital (including combined with other developmental anomalies - Zivert-Kartagener syndrome)

2. Acquired (with bronchoectatic disease)

II. By primary lesion of lung structures:

1. With primary lesion of pulmonary parenchyma

2. With primary lesion of bronchi

III. According to the form of bronchiectasises:

1. Cylindrical

2. Sacred

3. Spindle-shaped

 4. Mixed

IV. According to the clinical course:

1. Remission

2. Exacerbation

3. Continuously recurring course

V. By the presence of complications:

1. Uncomplicated course

2. Complicated: - pulmonary hemorrhage - hemoptysis - pyopneumothorax – abscess

VI. By the state of the function of external respiration:

 1. Without respiratory failure

2. Respiratory failure I, II and III st.

3. Pulmonary heart failure.

The detailed diagnosis of bronchoectatic disease should be based on all the characteristics listed in the classification, the designation of localization and the prevalence of the pathological process.

**The clinical picture** of bronchiectasis is characterized by the duration and phase of the flow, periodic exacerbations with febrile, abundant separation of purulent sputum, persistent and chronic purulent intoxication (symptom of "drumsticks" and "watch glass"), and a specific complication of bronchiectasis, which is amyloidosis of the kidneys.

In the first stage of the development of the disease there is a moderate expansion of the lumen of the small bronchi by accumulating mucous bronchial discharge without alteration of the epithelium of the walls of the bronchus. The transition of the pathological process into the second stage means the occurrence of purulent inflammation in the occluded part of the bronchial tree. This is due to a decrease in the effectiveness of the protective mechanisms that mucosa of the respiratory part of the lung (alveolar macrophages, immunoglobulin A) under the influence of viral infection, beriberi and malnutrition. Another cause of development of purulent process is bronchial obstruction, which prevents its full emptying. Purulent inflammation spreads to the walls of the bronchi, in which squamous metaplasia of the cylindrical epithelium and ulceration of the mucosa are noted. In the future, inflammatory changes spread to the deeper layers of the bronchial wall, there is a cicatrical degeneration of the smooth muscles and submucosal layer. It is at this stage of the disease that the pathological process becomes irreversible in connection with the loss of muscle function of the bronchial wall of the contractile function, and hence the "purifying" function of the bronchi. There is a closure of the pathological vicious circle - violation of patency of the bronchi - purulent-inflammatory process - a violation of the function - progression of purulent inflammation - deepening of the violation of drainage function, etc.

In the third stage of the development of bronchiectasis, pathological changes are expressed in all layers of the bronchial wall and spread beyond the bronchial tree. Bronchi become sharply enlarged, containing in the lumen a purulent or purulent and ichorous exudate with an unpleasant acute putrefactive odor. The cartilaginous skeleton of the bronchi undergoes connective tissue degeneration, and in the places of ulceration of the mucosa whole "fields" of granulation tissue are formed. Such a violation of the structure of the bronchi leads to a decrease in their resistance and to the action of the so-called "bronchodilation" forces - an increase in intrabronchial pressure when coughing, stretching with accumulating sputum, which ultimately causes the appearance of sack-shaped expansions of the areas of the bronchial tree. In the pathological process, peribronchial tissues (sclerosis of peribronchial tissue, hypertrophy of bronchial arteries, bronchoadenitis) and pulmonary parenchyma (foci of pneumonia, pneumofibrosis) are inevitably involved. With angiography, there is an increase in the lumen of the bronchial arteries 4-5 times, the number of arterio-arterial anastomoses and the width of their lumen increases. This leads to a significant discharge of arterial blood from a large circle of blood circulation into the pulmonary artery system, pulmonary hypertension occurs, and subsequently a "pulmonary" heart is formed. The prolonged existence of a purulent process in the lung leads to the emergence and progression of systemic lesions: the formation of chronic pulmonary heart failure, diffuse chronic purulent bronchitis, emphysema, dystrophy of the parenchymal organs and anemia.

In the diagnosis of bronchiectasis, the leading place is occupied by X-ray examination, and in particular, total and selective bronchography and tomography. A frequent radiologic sign of bronchiectasis is a decrease in the volume of the affected lobe or the entire lung, compensatory emphysema of the "intact" lobe, displacement of the mediastinum and interlobar cracks due to a change in the architectonics of the bronchial tree. Angiopulmonography, perfusion scanning, is used to fully determine the function of the affected lung (pulmonary blood flow) section. Bronchoscopy is a very important diagnostic value. Bronchoscopic manifestations of endobronchitis make it possible to judge in more detail the quality of the spent lesion sanation and to suspect the congenital character of bronchial pathology (deformation of bronchial rings, tracheobronchomegaly, etc.).

**Differential diagnostic**

The differential diagnosis of bronchiectasis should be carried out with chronic empyema of the pleura. Similar to bronchoectatic disease is a long, chronic nature of the course of the disease, the presence of periodic exacerbations, the phenomena of chronic purulent intoxication. During the exacerbation, there are also complaints about subfebrile condition, cough with separation of purulent sputum, coming from the cavity of chronic empyema through the draining bronchus (with chronic empyema, as a rule, there is bronchopleural fistula). In the blood there is leukocytosis, a shift in the formula of white blood, an increase in ESR. The appearance of the patient differs: as a rule, chronic pleural empyema occurs in middle and old age, there is a narrowing of the intercostal spaces, their entrainment over the cavity of the empyema, there is also a blunting of percussion sound and weakened bronchial or amphoric respiration. To precisely verify the diagnosis, lung radiography helps to visualize the cavity of the chronic empyema, which has a paracostal arrangement and dense walls. In case of doubt, polycystonic X-ray of the lungs, superexposed images, bronchography and pleurography are used, even more rarely, with suspicion of pleural mesethelioma - thoracoscopy (pleuroscopy) with biopsy, computer tomography. In recent years, there have been data on the diagnostic value of ultrasound scanning.

Chronic lung abscess also has similarities with bronchoectatic disease in the form of long flow, the presence of phases of exacerbation and remission, the presence of chronic purulent intoxication. In contrast to bronchiectasis, an X-ray examination reveals a cavity formation with a liquid level located in the thickness of a light, rounded form. With chronic lung abscess in the bronchi draining it, in the lower parts of the lung due to chronic purulent panbronchitis, secondary bronchialectasies can occur, which, however, are of a purely regional, secondary nature. In doubtful cases, bronchography helps in the differential diagnosis, revealing the generalized nature of the lesion and the absence of an abscess cavity in bronchitis. Lung cancer can be similar to suppurative non-specific lung diseases if the endotracheally growing tumor overlaps the bronchus lumen, causes atelectasis of a group of segments or lobes with the development of abscess formation in it, or the disintegration of the tumor with the formation of perifocal abscesses. However, in cancer, this occurs as a subacute state, which is preceded by a long period of the disease with hemoptysis, increasing intoxication. Typically, these are elderly patients, heavy smokers, while patients with bronchiectasias are usually young. In doubtful cases, fibrobronchoscopy is used to visualize the tumor. Also, with the X-ray study, you can identify the shadow of the tumor with polycyclic contours and areas of decay in the thickness of it, "a whisker symptom." In doubtful cases, a study of wash water on atypical cells, selective bronchography is used.

Differential diagnosis should be performed intrasyndrome (bronchoectatic disease, bronchiectasis as a manifestation of other pathological processes - chronic bronchitis, tuberculosis, bronchiectasis in congenital pathology - cystic hypoplasia, tracheobronchomegaly, Zivert-Kartagener syndrome, etc.).

**Control questions:**

1. Specify the mechanisms of penetration of microorganisms into the pulmonary parenchyma in the occurrence of abscesses.

2. Name the factors contributing to the chronic acute abscess.

3. List the methods of X-ray studies used in the examination of patients with lung pathology.

4. Give a classification of bronchiectasis.

5. The goals and objectives of the method of bronchography.

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

 In the development of pyopneumothorax with lung abscess, 2

first of all it is shown:

1. endobronchial administration of proteolytic enzymes

 2. drainage of the pleural cavity

3. antibiotics

4. X-ray therapy

5. introduction of cytotoxic agents

Complications of acute lung abscess can not be: 5

1. breakthrough abscess in the pleural cavity

2. bleeding

3. aspiration of pus in the healthy lung

 4. sepsis

5. formation of the dry cavity in the lung

Gangrene of the lung is characterized by: 5

1. development of the disease with a decrease in body immunity

2. no granulation shaft at the boundary of the lesion

3. the widespread necrosis of the lung tissue

4. the pronounced intoxication

5. all listed correctly

List the main periods in the clinical picture of acute lung abscess: 2,5

1. period of imaginary well-being

2. the period before opening in the bronchus

3. the period of subcompensation

4. decompensation period

5. the period after opening in the bronchus

List additional methods of examination of a patient with 2,4

a lung abscess:

1. EGDS

2. X-ray of the lungs

3. sigmoidoscopy

4. radiography

**The theme of lessons “ACUTE AND CHRONIC PLEURAL EMPYEMA”**

**The purpose of the lesson**: learn at the level of reproduction from memory etiology, pathogenesis, clinical manifestations, classification, methods of diagnostic of acute and chronic pleural empyema

To the lesson student should:

1. Know the etiology and pathogenesis, the classification of pleural empyema, the ways of the formation of acute pleural empyema, the methods of diagnosis of acute and chronic empyema of the pleura.

2. Understand the sequence of application of various medical and diagnostic measures for acute pleural empyema, the causes of the transition of acute pleural empyema to chronic.

3. Be able to conduct a physical examination, to evaluate the data of laboratory and instrumental research methods for acute and chronic pleural empyema.

4. Know differential diagnostics with: hydrothorax, specific pleural lesion, echinococcosis, chronic lung abscess.

**Theoretical information**

Empyema pleura is a purulent or putrefactive inflammation, developing in the pleural cavity with the involvement of the pathological process of the parietal and visceral pleura. The term "empyema" (translated from Greek as an abscess) was used in the days of Hippocrates to refer to accumulated pus in an anatomically prepared cavity (empyema of the gallbladder). The term "pleural empyema" does not differ in meaning from the term "purulent pleurisy", but is more often used in surgical practice.

Empyema of the pleura is often not an independent disease, but is a pathological process that complicates lung diseases, abdominal organs (pancreatitis, subdiaphragmatic abscesses) and systemic diseases of the blood, connective tissue. Most often pleural empyema complicates the course of acute pneumonia (5-8%), lung abscesses (9-11%), lung gangrene (80-95%). With closed chest injuries, pleural empyema occurs in 3-5% of cases, and with penetrating wounds - in 10-15%.

**Classification**. The most important classification criterion determining treatment tactics and prognosis is the absence of pleural cavity communication with the external environment (closed pleural empyema) or its presence (open pleural empyema). In terms of the volume of pathological contents of the pleural cavity, there are: total pleural empyema, subtotal and delimited. By localization, the delimited empyema of the pleura is divided into: apical, parietal, basal, interlobar, paramediastinal. Separate parapneumonic pleural empyema (a combination of pneumonia and pleural empyema) and pleural empyema with destruction of lung tissue (abscess of the lung, gangrene of the lung). The so-called metapneumonic pleural empyema is the suppuration of abacterial parapneumonic pleurisy or hydrothorax, which is not recognized in time. They isolate a special type of open empyema of the pleura with the destruction of the lung tissue - pyopneumotorax. The nature of changes in the walls of the pleural cavity and the clinical course of empyema up to 8 weeks is regarded as acute, and 8 weeks after the occurrence - as chronic.

**The clinical picture** of acute empyema consists of a syndrome of purulent-resorptive fever with a hectic range of the temperature curve, weakness, chills, headache, and in the absence of adequate treatment - the development of the syndrome of sequential multi-organ failure, with decompensation of the functions of vital organs.

When examining the chest - lagging the affected side with respiratory movements, swelling of the intercostal space. Voice tremor in the zone of maximum accumulation of exudate is not carried out. During percussion, a blunt sound is detected above the accumulation of fluid, its boundary is located in an oblique direction (the Demoiso line), in the presence of air in the pleural cavity, the horizontal border of blunting is determined, and above it - tympanite with a metallic shade. At auscultation - absence of respiratory noises on the part of damage.

The reason for the transition of acute empyema to chronic is often inadequate or untimely used therapeutic measures, which is why, as a result of purulent destruction of the pulmonary parenchyma, a bronchopleural fistula is formed, which subsequently supports the existence of chronic pleural empyema. Purulent-destructive process in the pleura causes the occurrence in the body of a number of severe changes in the heart, liver, kidneys, characteristic of prolonged purulent intoxication.

When the pyogenic shell is destroyed by bacterial enzymes, the pus can go beyond the pleural cavity, forming abscesses between the muscles of the chest, under the skin or open outwards. Spontaneous breakthrough of purulent accumulation can also occur in the pericardial cavity, esophagus, through the diaphragm into the abdominal cavity.

From the instrumental diagnosis, a radiographic study is the leading one. The most simple and informative method of X-ray examination is polypositional fluoroscopy. It allows you to accurately localize the pathological process, determine the degree of delimitation of exudate, and also to determine its volume sufficiently accurately. Polypozitional pleuroraphy is performed to accurately determine the dimensions of the empyema cavity, its configuration, the condition of the walls, the verification and localization of the bronchial pleural communication. Endoscopic methods (bronchoscopy, thoracoscopy), as well as ultrasound scanning, provide a more detailed picture of the character of morphological changes in the pleural sheets and the pleural cavity. The final method of verifying the diagnosis is a pleural puncture: getting purulent contents from the pleural cavity allows to consider the diagnosis of pleural empyema as absolutely reliable.

**Differential diagnostic**

The empyema of the pleura must be differentiated from the specific (mycotic, tubercular) lesion of the pleura, when the primary process precedes the development of pleural empyema. To establish the correct diagnosis, a targeted study of exudate (on mycobacterium tuberculosis, fungi), puncture biopsy of the pleura, serological tests, and thoracoscopy with biopsy is necessary. In addition, pleural empyema should be differentiated with the following pathological conditions: hydrothorax, hemorrhagic pleurisy, subpleural echinococcal cysts, chronic lung abscess.

Hydrothorax (presence of fluid in the pleural cavity) - occurs with left ventricular heart failure and quite often serves as a differential diagnosis with acute pleural empyema, as it has the property of becoming infected and passing into the acute empyema of the pleura. A number of studies have shown a fairly significant decrease in immunity indices in patients with heart failure, which makes them sensitive to microbial factors. A distinctive feature with some generality of the x-ray picture is the absence of purulent-resorptive fever and purulent intoxication during hydrothorax. However, with a dubious clinical and radiologic picture, pleural puncture helps with the study of the resulting contents. For the transudate, the relative density of 1001-1015 is typical, for the exudate 1016-1025, the protein content in the exudate is 30-50 g / l, in the transudate is 1-2 g / L, the Livutta test for the serosomucin content in the exudate is always positive, according to the cellular composition in the exudate leukocytes predominate, in the transudate they are only 10-20 in the field of vision, lymphocytes predominate.

Festering hemothorax is also a stage of acute pleural empyema, since without adequate emptying of its punctures, it can with great probability turn into acute empyema. Radiographically, their picture is very similar. In the study of blood sampling, Petrov and Efendiev (Petrov - test for lysis of erythrocytes - "lacquer blood" - when diluting punctate with saline 1: 5) are poured into the tube, some blood is poured from the pleural cavity and diluted with a 5-fold amount of distilled water. uninfected blood after 5 minutes there is a complete hemolysis and the liquid becomes transparent, lacquer.If there is pus in the blood, the liquid becomes cloudy with the flocculent precipitate of fibrin, Efendieva - change in the ratio plasma, and shaped elements.Punctate in a test tube is defended or centrifuged.With this, two layers are formed - the upper (plasma), the lower layer - the uniform elements.If the blood is not infected, the correspondence between the plasma and the shaped elements will be 1: 1. In infected blood, this ratio changes in the direction of increasing fluid and reducing the sediment - turbidity (fibrin).

Hemorrhagic pleurisy is a classic example of lung cancer. With the development of processes of decay of the lung tumor, the clinical signs of purulent intoxication, according to the X-ray picture, are very similar to acute empyema (which can also complicate the course of lung cancer, but the actual hemorrhagic pleurisy does not require puncture or drainage, they can even cause infection of the pleural cavity and vice versa the development of empyema), from which the importance for determining the therapeutic tactics of delineation of these conditions follows. The most reliable way is a diagnostic puncture. With hemorrhagic pleurisy, the effusion corresponds to the transudate by physical parameters. By the cellular composition, erythrocytes predominate, and neutrophils are only rare, and atypical tumor cells can also be detected. At bacteriological research the transudate is sterile.

Subpleural echinococcal cysts - especially when suppuration is very similar to the chronic empyema of the pleura. However, they are characterized by a departure from the sputum scraps of the chitinous membrane and daughter scolexes, a positive latex agglutination reaction to echinococcus antigens corresponding to epidemics. Festering echinococcal cyst, even with a full-fledged conservative treatment, unlike the nonspecific chronic empyema, does not go into the remission phase, because it can not get rid of scraps of the chitin capsule of the parasite supporting the suppuration. In the peripheral blood there is pronounced eosinophilia (20-25%), which is not typical for chronic pleural empyema.

Chronic lung abscess is similar to chronic empyema of the pleura clinic of chronic purulent infection, duration, phase flow with periodic exacerbations and remissions. Differentiate these states only with the help of X-ray studies, and with paracostal localization of the abscess the picture can be quite identical. What distinguishes them is that in a chronic empyema the cavity is stretched in a vertical direction, with an abscess tends to a rounded contour, with chronic empyema, the walls of the cavity become thinner with an increase in the period of the disease, and become thicker with an abscess. X-ray and tomography help in differential diagnosis of polycystonic.

**Control questions:**

1. Name the reasons for the transition of acute empyema to chronic.

2. List the complications of lung cancer.

3. Give a classification of acute and chronic empyema of the pleura.

4. List the main clinical signs of acute pleural empyema.

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

The reason for the transition of acute empyema to chronic can not be: 4

1. a failed attempt to obliteration of the cavity in an acute period

2. premature drainage removal

3. a large primary cavity

4. tuberculosis and other specific flora

5. bronchopleural fistula

Chronic pleural empyema is considered: 4

1. from the second week

 2. from the fourth week

 3. from six weeks

4. from eight weeks

5. from three months

The outcome of the treatment of pleural empyema without bronchopleural fistula is determined by the nature of:

1. changes in the visceral pleura 1

2. the amount of pus in the pleural cavity

3. changes in the parietal pleura

4. changes in the lung tissue

5. microflora

To avoid hemorrhage it is not recommended to remove at once more than this amount of pleurocentesis 3

1. 1000 ml of liquid

2. 500 ml of fluid

3. 1500 ml of liquid

**The theme of lessons: “ECHINOCOCCOSIS OF THE LUNG”**

**The purpose of the lesson**: learn at the level of reproduction from memory the clinical signs, classification, methods of laboratory and instrumental diagnosis, differential diagnostic of echinococcosis of the lung.

**To the lesson student should:**

1. Know the stages of development of lung echinococcosis, the clinical picture, the methods of laboratory and instrumental diagnostics, the nature of the complications of the disease.

 2. Understand the etiology and pathogenesis of lung echinococcosis, the dependence of its clinic on the form and stage of the disease.

3. Be able to collect complaints and anamnesis, to reveal the objective symptoms of the disease, to evaluate the data of laboratory and instrumental research.

4. Know the differential diagnosis of this disease with lung abscess, lung cancer, tuberculous lesion of the lung.

**Theoretical information**

Echinococcosis of the lung is a disease characterized by development in the lung tissue of the echinococcal cyst and a specific clinical picture of the pathological process.

**Classification**. The clinical classification of lung echinococcosis includes three stages:

1. Hidden (asymptomatic)

2. Clinical manifestations

3. Complications

**Clinical picture**. In the first stage patients do not have complaints. At this time, examination of patients according to the systems, there are no signs of lung echinococcus. The stage of clinical manifestations includes two periods: the period of development of a closed bladder without complications and the period of opening of the echinococcal cyst in the bronchus is an open period. In the first period, complaints are meager. The patient's condition is satisfactory, there is a slight pain in the chest, without a clear localization, a rare dry cough, normal body temperature, no shortness of breath, no signs of intoxication. At physical research only at the large sizes of a cyst shortening of a percussion sound, the weakened breath are revealed. A moderate eosinophilia is observed in the blood test, the latex agglutination reaction is positive.

The radiograph of the lungs defines rounded, homogenous, clearly delineated shadow that does not have a horizontal level of fluid and a tight capsule around. Sometimes you can find a sickle-shaped shadow of an exfoliated and asleep chitinous shell. When a cyst breaks through the bronchus, there appears a cough with the passage of a clear, odorless liquid, with scraps of chitinous membrane, hemoptysis, weakness, fever, shortness of breath and urticaria, asphyxia may occur. When suppuration cyst sputum is purulent, odorless and does not break down. The temperature rises, but there are no signs of intoxication. There is no shortness of breath and cyanosis, there is no evidence of chronic intoxication (changes in fingertips and nail plates). In the lungs, humid finely bubbling rales are heard. On the X-ray of the lungs, a cavity is defined with a liquid level that does not have a dense capsule. Sometimes you can find a sickle-shaped shadow of an exfoliated and asleep chitinous shell. The rupture of the echinococcal cyst may be accompanied by severe bleeding.

**Differential diagnostic**

Differential diagnosis should be carried out with lung cancer, lung abscess, bronchoectatic disease, pulmonary tuberculosis.

Lung cancer. In the early stage of the disease, peripheral lung cancer, as well as lung echinococcosis, is characterized by the presence of a rounded shadow on the chest radiograph. In contrast to cancer with echinococcosis, you can establish an epidemiological anamnesis (contact with domestic animals, large and small cattle) and for a long time there is no clinic. In lung cancer, the manifestation of the process begins with a subfebrile condition, weakness and a dry cough that is of an overwhelming nature with a scant amount of mucus containing blood veins, which is not typical for echinococcus during the closed bladder. In the future, the patient's condition progressively worsens, hemoptysis increases up to pulmonary hemorrhage, cachexia, anemia, sprouting of the intercostal nerves or metastases in the vertebral bodies with their subsequent destruction and development of radicular compression develops, an unusual atherosclerotic pain syndrome develops. With endobronchial growth of the tumor, bronchial obstruction and development of shared atelectasis occur with time. At the same time, there is an abnormality of the thoracic wall, a lag in breathing, retraction and convergence of the intercostal spaces. Echinococcus lung is characterized by a slow expansive growth and development of atelectatic syndrome is extremely rare.

In the blood of a patient with lung cancer there is an acceleration of ESR up to 50-70 mm / hour, which can also be noted in patients with echinococcus lung. In the analysis of sputum in patients with lung cancer, atypical cells are microscopically determined in 83% of cases. With cancer radiographically, the shadow of the tumor is dense, with uneven, bumpy, "landscape-like" outlines, has short shadows - "antennae", reaching the root of the lung, so-called "cancer paths" - a sign of tumor germination along the lymphatic collectors and bronchi. When the tumor disintegrates in the center of the shadows, a cavity appears with polycyclic contours that does not contain a liquid level. For echinococcus, on the roentgenogram of the lungs, a distinct, round, homogeneous shadow with even edges is characteristic. Sometimes the symptom of "detachment" is determined, and signs of involvement of lymphatic reservoirs are never determined.

The abscess of the lung is characterized by the severity and phase of the flow of the process. It flows in the form of two clearly pronounced periods: the phase of infiltrate formation and the phase of breakthrough of the abscess in the bronchi. In the first phase, patients complain of persistent chest pain, weakness, chills, unproductive cough, high hectic temperature, dyspnea. There is a blunting of percussion sound, weakened bronchial breathing. In the blood, high leukocytosis, increased ESR. With suppuration of echinococcal cysts, there is also a high leukocytosis and an increase in ESR, however, in this case, the appearance of cough is not typical, the spontaneous breakthrough of a suppurated cyst in the bronchus or pleural cavity occurs much later than with abscess. Normally, dead parasites usually contract after a long period after infestation. With the breakthrough of the echinococcus cyst, in case of suppuration, sputum does not have a three-layered abscess characteristic of the abscess. In the expectorated sputum you can find scraps of chitinous membrane and scolexes. With a breakthrough in the bronchus of echinococcal cysts from the liver in sputum there is an admixture of bile.

Bronchoectatic disease manifests itself from childhood, is either congenital in nature, or occurs due to such diseases as whooping cough, flu, the primary tuberculosis complex. Patients constantly see mucous sputum discharge, dyspnea, subfebrile condition in the mornings, phase flow characterizes with increasing duration of the disease, signs of chronic purulent intoxication (deformation of nail phalanges, amyloidosis, chronic anemia and hypoproteinemia often joins). Unlike echinococcus, there is never eosinophilia, more typical leukocytosis with a shift of the formula to the left, an increase in ESR. The radiological picture is completely different: with a bronchoectatic disease, there is never a clear, round, homogeneous shadow, as in echinococcus, and bronchography always reveals sack-like or clearly-expanded bronchi that are absent in echinococcus.

With pulmonary tuberculosis, as in the complicated form of echinococcus lung, subfebrile temperature is determined, dyspnea with exercise, cough. In contrast to echinococcosis, pulmonary tuberculosis reveals its epidemic history, sputum meager and before the formation of the cavern there is no hemoptysis. Microscopic examination of sputum determines the presence of mycobacterium tuberculosis in it. Radiographically, tuberculosis reveals miliary and focal infiltrative "foci", and with the disintegration of the cavern with the so-called "path" to the lung root. With tuberculosis, other radiographic signs of tuberculosis are revealed - traces of dissimination. Positive serological reaction Mantoux.

**Control questions:**

1. Indicate the ways of invasion of echinococcus into the human body.

2. Classification of lung echinococcosis.

3. Clinical picture of lung echinococcosis.

4. Clinic of penetration of the echinococcal cyst in the bronchi.

 5. What are the methods of instrumental diagnosis of lung echinococcosis?

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

What is the most common cause of spontaneous pneumothorax: 4

1. lung abscess

2. lung cancer

3. bronchiectasis of the lung

4. bullous lung cysts

5. lung echinococcosis

For the radiographic picture of lung echinococcosis it is characteristic: 2

1. rounded shadow without clear contours

2. Rounded shadow with smooth, well-defined contours

3. Rounded shadow with a path to the lung's root.

Hemoptysis is an early symptom for: 5

1. Lung abscess

2. Lung cancer

3. Empyema

4. Bullous lung cyst

5. All wrong

Select all the symptoms that characterize the Gorner triad: 2,3,5

1. exophthalmus

2. ptosis

3. miosis

4. edema of the face

5. enophthalmus.

When a circular shadow is detected on the chest radiograph: 5

1. Tomography

2. Dynamic observation

3. Pirke and Mantoux test

4. fibrobronchoscopy with biopsy

5. pneumomediastinography

**The theme of lessons: «LUNG CANCER»**

**The purpose of the lesson:** learn at the level of reproduction from memory etiology, pathogenesis, clinical manifestations, classification, methods of diagnostic of lung cancer.

**To the lesson student should:**

1. Know classification of lung cancer, clinical manifestation, methods of laboratory and instrumental diagnostic, nature of complications.

2. Understand etiology and pathogenesis of lung cancer, dependence of the clinic of this disease on the form and stage of the disease.

3. Be able to collect complaints and anamnesis, reveal the objective symptoms of the disease, evaluate the data of laboratory and instrumental research.

 4. Know the differential diagnosis of this disease with: abscess and lung echinococcus, pulmonary tuberculosis, mediastinal tumor.

**Theoretical information**

Lung cancer occupies one of the first places among oncological diseases. Men are sick four times more often than women.

**Classification**. There are central lung cancer - endobronchial and peribronchial. Peripheral cancer - intra-luteal, subpleural, "cavitary", Penkost’s cancer (apex of the lung).

International classification:

T - primary tumor

T 0- no signs of primary tumor

T is - noninvasive (intraepithelial) cancer

T 1- tumor up to 3 cm or less, without signs of bronchial wood injury proximal to the lobar bronchus

T 2- tumor more than 3 cm or tumor causing atelectasis, obstructive pneumonitis, or spreading to the root region

T 3 - tumor of any size with direct spread to adjacent organs or causing obstructive pneumonitis of the entire lung or there is pleural effusion

T x - tumor not radiographic or bronchoscopic methods

N - regional lymph nodes

N 0- no signs of lymph node involvement

N 1- signs of affection of peribronchial lymph nodes

N 2- signs of mediastinal lymph node mediation

M - distant metastases

M 0- no signs of distant metastases

M 1 - signs of distant metastases

**The clinical picture** of lung cancer in the initial stages is scant, in the future it is associated with developing complications. There are several typical clinical variants of its course. The central cancer clinic is diverse and characterized by pain in the chest on the side of the lesion. There is a dry cough, subfebrile condition. Gradually weakness, weight loss, anemia increase. Peribronchial growth is accompanied by erosive bleeding. Hemoptysis appears with the advanced course of lung cancer. For peripheral lung cancer, the earliest and persistent symptom is chest pain. More often the pain is constant, not associated with the act of breathing. Then there is shortness of breath. In the X-ray study, the shadow of the tumor is dense, with uneven, bumpy outlines, there are short shadows that go to the root of the lung, the so-called "cancer paths" - a sign of tumor germination along the lymphatic collectors and bronchi. When the tumor disintegrates in the center of the shade, a cavity with polycyclic contours is found that does not contain a liquid level. If a cancer is suspected, sputum examination for atypical cells, bronchoscopy with aspiration biopsy and cytological examination is indicated.

**Differential diagnostic**

Lung cancer should be differentiated: with inflammatory diseases, lung cysts, tuberculosis lesions, mediastinal tumors (teratomas, dermoid cysts, thymomas, lipomas).

Acute and chronic lung abscess. A common manifestation will be a clinic of intoxication, a cough with phlegm, a rounded shadow on the roentgenogram. In contrast to lung abscess with cancer, intoxication is less pronounced. Sputum does not have a three-layered characteristic. On the roentgenogram, a cavity with thicker walls than with an abscess, and the inner contour is eaten, it does not contain liquid.

Echinococcosis of the lung as a lung cancer appears on the roentgenogram with a rounded shadow. In contrast to lung cancer with echinococcosis, you can establish an epidemic history (contact with domestic animals, large and small cattle) and for a long time there is no clinic. With lung cancer, the manifestation of the process begins with a subfebrile condition, weakness and a dry cough that is of an overwhelming nature with a scant amount of mucus containing blood veins, which is not typical for echinococcus during the closed bladder. In the future, the patient's condition progressively worsens, hemoptysis intensifies up to pulmonary hemorrhage, cachexia, anemia, sprouting of the intercostal nerves or metastases in the vertebral bodies, followed by destruction and development of radicular compression, develops a pain syndrome unusual for echinococcosis. With endobronchial growth of the tumor, bronchial obstruction and development of shared atelectasis occur with time. At the same time, there is an abnormality of the thoracic wall, a lag in breathing, retraction and convergence of the intercostal spaces. Echinococcus lung is characterized by a slow expansive growth and development of atelectatic syndrome is extremely rare. In the blood of a patient with lung cancer there is an acceleration of ESR up to 50-70 mm / h, which can also be observed in patients with echinococcus lung. In the analysis of sputum in patients with lung cancer, atypical cells are microscopically determined in 83% of cases. Radiographically, the shadow of the tumor is dense, with uneven, bumpy, "landscape-like" outlines, has short shadows - "tendrils" that extend to the root of the lung, so-called "cancer paths" - a sign of tumor growth of the lymphatic reservoirs and bronchi. When the tumor disintegrates in the center of the shadows, a cavity appears with polycyclic contours that does not contain a liquid level. For echinococcus, the radiograph of the lungs is characterized by a rounded shadow, distinct with even margins. Sometimes the symptom of "detachment" is determined, and signs of involvement of lymphatic reservoirs are never determined.

With pulmonary tuberculosis, as in cancer, subfebrile temperature is determined, dyspnea with exercise, cough. In contrast to cancer, pulmonary tuberculosis reveals an epidemic history. With tuberculosis for several days, the body temperature reaches 38.5. After its reduction, sweating is observed after low stresses and night sweats. Sputum is scant and there is no hemoptysis before the formation of the cavity. Microscopic examination of sputum determines the presence of mycobacteria tuberculosis. Radiographically, tuberculosis reveals miliary and focal infiltrative "foci", and with the disintegration of the cavern with the so-called "path" to the lung root.

When cancer is localized in the apex of the lung (Penkost cancer), in contrast to tuberculosis, a characteristic triad of symptoms (ptosis, miosis, enophthalmus) on the side of the lesion (Horner's village) is associated with compression of the sympathetic trunk. With tuberculosis, other radiographic signs of tuberculosis are revealed - traces of dissimination. Positive serological reaction Mantoux.

Tumors of the mediastinum (teratomas, dermoid cysts, thymomas, lipomas) are characterized by a slow course, absence of such symptoms as coughing, chest pain, hemoptysis, exhaustion. The first signs of a mediastinal tumor are compression of the hollow and nameless veins (upper vena cava syndrome), accompanied by the appearance of cyanosis and edema of the face, neck and hands. With tumor of the thymus gland (thymoma) signs of myasthenia progress. X-ray examination of the lungs in several projections does not reveal any changes in them. Indirect attribute is the displacement of the mediastinum. Pneumomediastinography and mediastinoscopy with biopsy make it possible to establish the exact nature of the lesion.

**Control questions:**

1. Etiology and pathogenesis of lung cancer.

 2. What are the three main symptoms of lung cancer?

 3. Name four forms of peripheral lung cancer.

4. Clinical classification of lung cancer.

 5. Clinical picture of central and peripheral lung cancer.

6. What are the methods of instrumental diagnostics of lung cancer?

**Tests for self-control:**

Symptoms of lung cancer are: **Answers:**

1. dry, barking, cough 4,5

2. dyspnea

3. soreness with tapped chest and spine

4. hemoptysis

5. recurrent pneumothorax

The main radiographic evidence of peripheral lung cancer is: 3

1. Rounded shadow in the lung

2. Rounded shadow with clear contours

3. Rounded shadow with a path to the lung root

4. Atelectasis

5. Mediastinal displacement.

With lung cancer, hemoptysis is an early symptom: 2

1. Yes

2. No

Horner's triad is typical for: 2

1. mediastinal tumors

2. cancer apex

3. lung abscess

4. Which is considered an early symptom for echinococcosismediastinal tumors: 3

1. Horner symptom

2. Grefe symptom

3. symptom superior vena cava

4. hemoptysis

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

**The purpose of the lesson:** to learn the playback level of the 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 Echinococcus granulosus worm. The causative agent of alveolar Echinococcus is the cestode Echinococcus multilocularus. Clinical classification of echinococcosis (L.V. Melnikov) distinguish: the initial (asymptomatic) stage, the second stage – clinical manifestations, the third stage - complications.

**Clinical picture**. The development of echinococcus is very slow for many years. When hydatidosis form a cyst is formed, which increasing includes a 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 determined 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 manifestations, 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 is revealed, often the right of its departments or all sizes in multiple cysts. Sometimes defined protrusion of the abdominal wall, the deformation of the rib arc and ribs like a hump. Liver palpation dense on its surface detected formation of hemispherical shape. Less often determined by the symptom of fluctuation. In some cases, when swinging 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 expressed discomfort. They are worried 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 marked eosinophilia (12-25%), latex agglutination reaction with echinococcal antigen positive. Ultrasound of the liver defines cystic masses in the liver parenchyma.

The third stage-complications is 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 an anterior abdominal wall sharp pain in the right hypochondrium is noted. The temperature rises to 40 º C, is hectic. Quickly increase the phenomenon of intoxication, 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 emptied 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 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 liver echinococcosis 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 liver echinococcosis 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 to the liver come 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 that should be carried out differential diagnosis of hydatid cyst of the liver.

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

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

 For differential diagnosis in a patient 35 3,4

years 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 during the medical examination 1,4,7

in ultrasound examination of the liver revealed cystic

formation of a rounded shape 7x8 cm. Specify additional

methods of examination, which should be used for final

diagnosis:

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 «MASTITIS»**

**The purpose of the lesson**: learn at the level of reproduction from memory classification, clinical manifestations, methods of laboratory and instrumental diagnosis of acute mastitis, a technique for examining patients suffering from mastitis, differential diagnostic.

**To the lesson student should:**

1. Know classification and clinical signs of acute mastitis, etiological factors of its occurrence, methods of laboratory and instrumental diagnostics, prevention of the occurrence of mastitis.

2. Be able to fully collect complaints from a patient with mastitis, perform a physical examination of the mammary glands, evaluate the data of laboratory and instrumental research.

3. Know the clinic necessary for differential diagnosis of mastitis with cancer, lactostasis, fibroadenomatosis of the mammary gland, galactocele, parasitic lesion of the mammary gland, specific infection of the mammary gland (tuberculosis, syphilis).

**Theoretical information**

Mastitis is an acute inflammation of the breast tissue.

**Classification:** by the nature of the inflammatory process are distinguished:

non-suppurative (serous and infiltrative) and suppurative inflammation (abscessed, infiltrative-abscessing, phlegmonous and gangrenous) forms of acute lactational mastitis. Depending on the localization of the focus of inflammation, mastitis can be: subcutaneous, subareolar, intramammary, retromammary and total, when all parts of the breast are affected.

**Clinical picture:** The acute beginning, usually at 2-4 weeks of the postpartum period is characteristic of typical clinical manifestation of serous mastitis. Temperature rises rapidly to 38-39 degrees and it’s often accompanied by chills. General weakness, fatigue, headache are developing.

There is pain in the breast but may be such variants of clinical course of mastitis in which overall phenomenon precedes the local ones. The beginning mastitis develops into infiltrative form for 2-3 days with inadequate therapy. There is palpating dense, painful infiltration in the breast. The skin over infiltrate is edematous. The transition of mastitis to a purulent form occurs within 2-4 days. Temperature rises to 39 degrees, chills occurs.there are signs of intoxication: lethargy, weakness, poor appetite, headache. The local signs of the inflammatory process grow: swelling and soreness in the lesion, softening areas in the infiltration area with infiltrative-purulent form of mastitis.

20 percent of patients with purulent mastitis is manifested in the form of abscess form. With the prevailing options are furunculosis and abscess areola, less frequent intramammary and retromammary abscesses, which are strips, bounded by a connective tissue capsule.

10-15 percent of patients purulent mastitis proceeds as a phlegmonous form. The process captures most of the gland with the melting of its tissue and the transition to surrounding fiber and skin.The general condition of the woman in such cases is severe. The temperature reaches 40 degrees, tremendous chills, pronounced intoxication are observed. The mammary gland sharply increases in volume, the skin is edematous, hyperemic with a cyanotic shade, palpation of the gland sharply painful. Phlegmonous mastitis can be accompanied by septic shock.

A rare gangrenous form of mastitis has an extremely severe course with pronounced intoxication and necrosis of the mammary gland. The outcome of gangrenous mastitis is unfavorable. Any form of mastitis in the interests of the child, breastfeeding should be discontinued. The indication for suppressing lactation in matthes is:

a rapidly progressing process, despite intensive therapy

multifocal infiltrative-purulent and abscessed mastitis.

phlegmonous and gangrenous form of mastitis

any form of mastitis in recurrent period

sluggish mastitis, which is not amenable to complex therapy, including surgical opening of the outbreak

**Differential diagnostic**

Differentiate acute purulent mastitis is necessary to differentiate with breast cancer, lactostasis, fibroadenomatosis of mammary gland , galactocele, parasitic lesions of the breast and specific infections of the mammary gland (tuberculosis, syphilis).

Breast cancer has some common feautures with acute purulent mastitis in the following situations: the adherence of purulent complications during the decay of the tumor in the late stages of the course of the process and in the so-called mastitis-like form of breast cancer. Common with the admission of purulent complications during the decay of the tumor is the presence of severe pain, hyperemia and infiltration of the affected breast, and in some cases, when abscessed-fluctuation occurs. The following factors allow to distinguish these conditions: a long-term course of the disease in breast cancer, the presence for several months of volume formation in the gland, sometimes with the formation of ulceration, the presence of enlarged regional lymph nodes, signs of distant metastasis in the flat and spongy bones of the skeleton.As a rule, previously these patients were on treatment for this disease, received radiation therapy and chemotherapy. Often, these patients of pre-menopausal and menopausal age who have abortions in the anamnesis, in the postpartum period, were limitedly breast-feeding their baby. However, with the late treatment of cancer patients, it is sometimes difficult to differentiate between vulgar non-lactational climacteric mastitis and septic complications of the tumor process in the mammary gland.Histological examination of tissues suspected of a tumor, as well as instrumental studies (ultrasound, radiography of the spine, pelvis and thorax, CT), can help to diagnose the indirect signs of tumor growth.

A mastitis-like form of breast cancer is typical for high-grade, poorly-differentiated cancers that occur, as a rule at a young age, most often in the period of hormonal adjustment, in the pubertal period. The disease with this form of cancer develops extremely rapidly, both cancerous intoxication and local changes in the mammary gland grow, early signs of distant metastasis appear. Common with purulent mastitis is some external similarity of local symptoms: the presence of diffuse puffiness, mild hyperemia of the breast, signs of impaired lymph flow from the body (type of skin like a lemon peel), but against the background of changes resembling a phlegmonous form of mastitis, there are no signs of purulent intoxication, process (several weeks in the absence of local dynamics from the mammary gland), signs of cancer intoxication, mild pain syndrome, young age of the patient and (11-15 years) and the appearance of this clinic outside of pregnancy and lactation.

Fibroadenomatosis of the mammary glands is an extremely common pathology as a climacteric, pre-clomacteric, and also of childbearing age. Some doubts in differential diagnosis in fibroadenomatosis can occur with its diffuse small-capped form "pellet breast" with a pronounced pain syndrome, especially growing in the ovulation phase of the menstrual cycle. The absence of hyperemia, infiltration and fluctuations on the background of pain syndrome, the regular occurrence of such complaints and their aggravation in the middle of the menstrual cycle, the absence of signs of purulent intoxication, as a rule, the age of patients over 45 years old, the absence of pregnancy and lactation are distinctive. In doubtful cases are useful ultrasound of the breast and thermography. With mastitis on thermograms of the mammary gland, a region of very high heating in the projection of the focus of inflammation is visible. The temperature gradient can reach 3 degrees. Usually, according to the nature of the disease, we see a hyperemia in the projection of the axillary lymph nodes, which is a reflection of the lymphatic system reaction to inflammation, and consequently is absent in fibroadenomatosis.

Galactocele (retention cyst of the lobule of the breast) is relatively rare and develops several months after the cessation of lactation. The patient notes the presence of a rounded, with clear contours, an elastic, mobile formation in the mammary gland. Unlike mastitis, skin over it is not hyperemic, there is no perifocal infiltration and swelling, regional lymph nodes are not enlarged, mobile and painless. Sometimes there is a Kenig’s symptom. With the development of a secondary infected galactocele, the clinic is transformed into typical manifestations of a mammary abscess and is virtually indistinguishable from that of purulent mastitis. Only anamnestic data on the previously available palpable education can decline towards the diagnosis of suppurative galactocele.

Parasitic lesions of the mammary gland (echinococcal cysts) are quite rare: they are manifested by the presence of a rounded, mobile, elastic formation in the mammary gland. From purulent mastitis also differ in the absence of signs of local and general purulent infection. Ultrasound can help in diagnosis, CT, as well as data of epidemiology, the presence in the anamnesis of echinococcosis of other organs, the positive reaction of latex agglutination with the antigen of echinococcus. It is rare for a giant parasitic cyst size to be clearly defined by the symptom of "hydatid tremor" in undulating palpation of the gland.

In the last decade, in connection with the worsening of socio-economic conditions, the question of the possibility of a specific infection (tuberculosis, syphilis), the damage of various organs, in particular, the breast, is of great interest.

Tuberculosis lesion of the breast can be observed in the newly disseminated forms of the disease. It is manifested by the presence of dense "cold" infiltrates, an increase in regional lymph nodes, the formation of multiple latticed fistulas with a scant caseous discharge, the absence of an acute onset of the disease. Distinctive features from nonspecific mastitis is the absence of local hyperemia, pain and fluctuations, general signs of purulent-septic process, the presence of signs of pulmonary tuberculosis, the corresponding data of epidemics, positive data of serological reactions.

Syphilis of the breast can be a manifestation of the tertiary, humonose period of the disease, when there is a tight bounded infiltrate-gum in the gland. In contrast to purulent mastitis, there is no hyperemia, swelling and tenderness in palpation, and there are positive serological responses to the antigens of pale treponema, a long pre-existing period of the disease. Also, the mammary gland can also be affected in primary syphilis with the formation of primary syphiloma (solid chancre) at the site of the primary affect of the pathogen (usually in the areola region). With a classic picture of a small sore with dense edges and a pink rounded bottom, painless on palpation. Serological reactions, while still negative, characteristic kind of ulcer makes it possible to distinguish it from the nonspecific suppuration (opened abscess) of the paraareolar region.

**Control questions:**

1. Name classification of mastitis

2. Measures for the prevention of lactation mastitis

3. Instrumental methods of diagnosing lactation mastitis

4. Name diseases with which it is necessary to differentiate mastitis

**Tests for self-control:**

Enumerate suppurative forms of mastitis **Answers:**

1) abscessed 1,2,3,4

2) infiltrative-abscessing

3) phlegmonous

4) gangrenous

5) serous

Enumerate forms of non-suppurative mastitis 1,2

1) serous

2) infiltrative

3) abscessed

4) phlegmonous

5) gangrenous

Depending on the localization of the inflammation 1,2,3,4

mastitis can be, choose the right answers

1) subcutaneous

2) subaureolar

3) intramammary

4) retromammary

5) intermuscular

6) total

The transition of serous mastitis to infiltrative and 1

then to purulent occurs within

1) 2-3 days

2) 4-5 days

3) 5-6 days

4) 7-8 days

5) 10-12 days

Phase of development of acute mastitis 1,3,4

1) serous

2) fibrinous

3) infiltrative

4) abscessing

**The theme of lessons «BREAST CANCER»**

**The purpose of the lesson:** learn at the level of reproduction from memory classification, clinical manifestations of breast cancer, methods of laboratory and instrumental diagnosis, differential diagnostic of serious disease.

**To the lesson student should:**

1. Know etiology, pathogenesis, classification and clinical signs of breast cancer.

2. Understand the necessity of oncological alertness when examining women of middle and old age

3. Be able to collect anamnesis, conduct a clinical examination and evaluate methods of instrumental diagnosis of breast cancer

4. Know differential diagnostics with fibroadenoma, galactocele, mastopathy, tuberculosis, breast sarcoma

**Theoretical information**

Breast cancer is a malignant tumor, the primary focus of which occurs in the parenchyma or excretory ducts of the gland. Breast cancer is one of the most frequent malignant diseases. Among women with cancer it is in 2-3rd place.

The disease is mainly observed in middle-aged women and in the pre-climacteric period (36-40%), at a young age only at 1.5-2%. Most often the tumor is located in the upper-outer quadrant of the gland, less often in the upper-inner and lower quadrants. At present, the opinion about the leading role of dyshormonal disorders, and primarily increased estrogenic activity as one of the causes of cancer of this localization, has been confirmed.

**Classification:** nodal and diffuse forms of breast cancer are distinguished. The diffuse form includes edematous-infiltrative, mastitis-like, erysipelas-like, and testaceous forms. There are 4 stages of breast cancer: stage 1 - a tumor less than 3 cm in diameter, does not transfer to the surrounding fiber and skin, without affecting regional lymph nodes; stage 2: A - the tumor does not exceed 5 cm in diameter, goes to the cellulose and has symptoms of adhesion to the skin, the lymph nodes are not affected. B - a tumor of the same size and smaller, but with lesion of single axillary nodes of the first order; stage 3: A - a tumor more than 5 cm in diameter with the germination or ulceration of the skin or penetration into the underlying fascial-muscular layers, but without metastases to the regional lymph nodes, B - tumor of any size with multiple metastases to the axillary, subclavian or parasternal lymph nodes. Stage 4: - a widespread lesion of the breast with dissemination in the skin, extensive ulceration. Tumor of any size, densely fixed to the chest, with or without metastases to the regional lymph nodes. Any breast tumors have distant metastases (into the lungs, pleura, bones, liver, etc.)

**Clinical picture**: the first clinical signs of breast cancer appear when the tumor passes to the fiber and skin. At a palpation in a mammary gland the dense knot is found out. The tumor, proliferating, infiltrates the gland, spreads through the milk ducts, interstitial cracks, lymphatic and blood vessels. Rapid growth of the tumor is observed at a young age (especially if the tumor has occurred during pregnancy, after childbirth, abortion). When not large tumors in the glandular body is characterized by a symptom of "wrinkled skin", resulting from the shortening of Cooper ligaments. This symptom makes it possible to distinguish cancer from mastopathy. For the central localization of the tumor node under the same circumstances, a halo narrows, the nipple becomes entangled, and its deflection toward the node. Having marked the positive symptom of Kenig: the knot does not disappear when pressing it in the prone position to the chest wall. At the expressed tumor infiltration at the primary inspection the signs, testifying to disturbance of lymph circulation in a podoreolar plexus - symptoms of umbiliculation, a site, at central localization - a symptom of Pribram (deformation of a nipple, its indrawing ), Krause (edema of areola) are revealed. The symptom of the "lemon peel" indicates a far-gone process, as it occurs as a result of a cancerous embolism of deep lymphatic vessels with skin swelling. With scirrhous forms of cancer, the gland is tightened as the tumor node grows. When the tumor spreads to the edge of the glandular disk, the nipple is displaced toward it.

Diffuse forms of breast cancer are more malignant. According to clinical manifestations, there are: mastitis-like, edematous-infiltrative, erysipelas, testaceous forms. The first two are characteristics for a young age, especially often in the period of pregnancy and lactation, are rapidly progressing. The testaceous form is more typical for older women, despite the fact that the tumor grows more slowly, this form is prognostically unfavorable.

Paget's cancer is diagnosed in patients aged 45-70 years and is characterized by a lesion of the nipple that occurs with the formation of scales and plaques or with ulceration, wetting, eczematoid changes, combined with itching, tingling sensations, and undefined pain from the nipple area.

**Diagnostics.** The great importance in the diagnostic of early forms of breast cancer are special methods of research - X-ray mammography, various kinds of biopsies and cytological studies. Also, traditional methods of clinical diagnosis of tumors in relatively early stages have not lost their significance.

**Differential diagnostic**

Differential diagnosis of breast cancer should be carried out with fibroadenoma, cystic, fibrotic, nodal mastopathy, galactocele, tuberculosis and breast sarcoma.

Fibroadenoma of the mammary gland is manifested by a tumor-like formation determined by palpation. In cancer, the tumor is dense, bumpy, with limited mobility, with pronounced retraction of the skin above the tumor as a symptom of "umbiliculation" or "lemon peel." In fibroadenoma, the tumor is confined to surrounding tissues, smooth, sometimes hemispherical, dense, with good displacement. In contrast to cancer, fibroadenoma can be multiple and located in both mammary glands. Axillary and supraclavicular lymph nodes are not changed. Fibroadenoma unlike cancer develops more often at a young age, being associated with dyshormonal hyperplasia of the gland tissue. It develops slowly for several years, practically without disturbing the patients.

Mastopathy fibrous or fibrocystic, in contrast to breast cancer, occurs a few days before the onset of menstruation. Pain can be intense and radiate into the arm and shoulder blade. When palpating the gland, there is a moderate soreness and diffuse compaction of the mammary gland with fuzzy contours. After menses, soreness disappears, the intensity of pain decreases. When palpation in the gland, the compaction areas are determined, without clear boundaries in the form of strands, fine granularity. From the nipple, there are discharges of a different nature.

Nodular mastopathy occurs at the age of over 30 years and is manifested by clear formations in the mammary gland. From the nipple, there are discharges of a different nature. Contrastless mammography - shadow is determined by an uneven shape with the less intensive shadows of the ducts leaving it. The resolving power of the method - with tumors of 0.5 cm in diameter on the doublet - defect filling, its narrowing, obturation. Thermography - the body temperature above the cancer node is 1.5-2 degrees higher than over benign formations. It is important to increase the temperature of the skin over the lymph nodes (axillary, subclavian, supraclavicular, parasternal) in the presence of metastases in them.

Retional cyst of the breast (galactocele) is formed as a result of blockage of one or several milk ducts after lactation or after the transferred mastitis. Galactocele develops gradually and is a retention cyst with polypous growths of the epithelium. At palpation in a thickness of a mammary gland the elastic, painless, motionless formation is defined. From the nipple secret stands out of gray-green or hemorrhagic color. In a cytological study, epithelial cells, erythrocytes, leukocytes are determined. With a control mammogram, you can see a cystic formation in the main dairy passages. Galactocele can be malignant and therefore observation is necessary in dynamics.

Breast cancer should be differentiated from tuberculosis of mammary gland , which is most often manifested by tuberculosis granuloma. In this case, a single knot is defined in the mammary gland, gradually increasing, moderately painful. Later, after the formation of the node, the tissues of the gland are melted and fistulous passages with a purulent, discrete discharge are formed. When analyzing pus from fistula, bacilli of Koch can be found. With tuberculosis of the breast, enlarged axillary lymph nodes are painful on palpation, in the form of conglomerates, unlike cancer, when metastases are dense, do not form in packets. It is necessary to take into account an anamnesis (contact with tuberculosis patients).

Sarcoma of the breast, in contrast to cancer, is characterized by rapid and malignant growth, more often observed at a young age. Formation is the areas of uneven density, with areas of softening, a large-hulled tumor without clear boundaries, large sizes. The skin above the sarcoma is stretched, slightly hyperemic, unlike cancer, when the skin changes in the form of a "lemon peel" (lymphostasis). The aspiration biopsy with the subsequent histological, cytological examination of puncture or aspiration material of puncture helps in differential diagnosis

**Control questions**

1. Indicate predisposing factors contributing to the development of breast cancer

2. Instrumental methods used in the diagnosis of breast cancer

3. What are the early and late clinical signs of breast cancer?

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

**Tests for self-control:**

The symptoms of breast cancer: **Answers:**

1. symptom of Koenig 1,2,3,4,6

2. symptom of Pribram

3. symptom of "umbilicating" the skin

4. misalignment of the nipple

5. skin over a tumor in the form of a "lemon peel"

6. skin over a tumor in the form of an "orange peel"

The patient turned to you with complaints about the presence 5

in the left breast of a tumor-like formation. She noticed it

a year ago, but because of the fear of surgery, did not apply.

When viewed in the left mammary gland, a dense tumor measuring

6 by 6 cm, fused to the skin (the skin above it in the form of a lemon

peel) is palpable in the outer-upper quadrant, the nipple is retracted and changes its shape when the tumor moves, in the left axillary region, painless moving lymph nodes. Your diagnosis?

1. fibroadenoma of the mammary gland

2. breast cancer, stage T2N0M0

3. breast cancer, stage T2N1M0

4. breast cancer, stage T1N1

5. breast cancer, stage T3N1M0

The most effective research method for a breast tumor less than 0.5 cm is 1

1. mammography

2. ultrasound

3. termography

4. palpation

5. radioisotope diagnostics

The tumor of a breast in diameter of 1,5 sm with the increased axillary 3 lymphonoduses carry to a stage:

1. I

2. 2A

3. 2B

4. 3A

5.3B

Breast cancer most often metastasizes to the:

1. mediastinum 2

2. bones

3. skin

4. liver

5. adrenal glands

The main ways of outflow of lymph from the breast are 2,3,4,6

1. cross

2. subclavian

3. axillary

4. parasternal

5. intercostal.

6. supraclavicular.

To diffuse forms of breast cancer are all except 5

1. edematous-infiltrative

2. mastitis-like

3. erysipelas

4. testaceous type

5. Paget's cancer

In the supine position, the breast tumor disappears with the symptom of

1. umbiliculation

2. Kenig 2

3. Payr

4. Pribram

5. the "orange peel"

In the second stage of breast cancer, the tumor reaches a size of

1. up to 2 cm

2. 2-5 cm

3. 1 cm 2

4. 5-7 cm

5. more than 8 cm

For breast cancer are not typical metastases in 2,3,4

1. the lungs

2. the liver

3. the brain

4. the navel 5. the bone

**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 of ulcerative ulcerative colitis began acutely, without remission, slowly, gradually progresses.

 For any form of ulcerative colitis is characterized by the presence of anemia. On examination of the patient the attention is drawn to an 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 people 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.** When diverticulitis marked by pain in the abdomen, unstable stool, decreased appetite, nausea. Palpation of the abdomen in the affected area is painful. The temperature can be subfebrile. In blood – leukocytosis. If 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 in 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 for 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 T

 – 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. When rectoromanoscopy 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, notes 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 of the intestine near the tumor is not changed, the filling defect | 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 a 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

with 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 does not belong: 5

1. diverticulitis

2. bleeding

3. perforation

4. fistula

5. malignization

Main clinical manifestations of recto-sigmoid 1,2,3

colon cancer are:

1. the clinical picture of intestinal obstruction

2. bleeding

3.  tenesmus

4. weight loss

5. pain during defecation

Which of these methods 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

Choose the most informative method of x-ray 3

examination in colon cancer:

1. review radiography of the abdominal cavity

2. the study of the passage through the bowel

3. barium enema ( irrigoscopy)

4. pneumoperitoneum;

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

 **The purpose of the lesson:** to learn the playback level of the memory etiology, pathogenesis, classification, clinical manifestations, methods of examination and differential diagnostics of diseases of the rectum.

**By the lesson the student should:**

1. Know etiology and pathogenesis of acute and chronic paraproctitis, hemorrhoids, rectal neoplasms, classification and clinical symptoms, methods of laboratory and instrumental diagnostics, the nature of complications.

2. Understand the principle of oncological alertness in the examination and treatment of proctologic patients, deontological peculiarities of this group of patients.

3. Be able to correctly collect anamnesis of the proctologic patient, to make rectal research, to formulate the diagnosis.

4. Know the differential diagnosis of acute and chronic paraproctitis, hemorrhoids, benign and malignant diseases of the rectum, abscess bartolinitis, furuncles and carbuncles of the perineum, abscesses of the pelvis and prostate gland, anal fissure.

**Theoretical reference.**

 **Classification** of diseases of the rectum:

1. Acute abscess:

a) subcutaneous,

b) the submucosa;

c) ileorectal;

d) pelviorectal;

e) retroreсtal.

2. Chronic paraproctitis (rectum fistula):

a) intersphincteric;

b) transsphincteric;

с) extrasphincter.

 And also on an anatomical basis - full, incomplete, external, internal.

3. Hemorrhoidal disease (hemorrhoids):

a) internal;

b) external;

с) mixed.

4. Anal fissure.

5. Tumors of the rectum:

a) benign;

b) malignant.

**Clinical picture.** Acute abscess – an acute purulent inflammatory process in pararectal tissue. A frequent cause is acute cryptic with the breakthrough of abscess in one of cellular spaces pararectal spaces. Allocate localization: subcutaneous, submucosal, ileorectal, pelviorectal and retroreсtal paraproctitis. The main symptoms of acute abscess are: pain, increase of general and local temperature, " fear of stool ". In the stage of infiltration, patients rarely turn to the surgeon. You should consider a high propensity for abscess formation due to the constant infection from the lumen of the rectum. Inadequate treatment or self-treatment often lead to the development of subsequent chronic fistula paraproctitis.

 Chronic paraproctitis is clinically manifested by the formation of complex fistulas between the rectum and the perianal area. The factors of its development are: inadequate treatment of acute paraproctitis, most often its opening from a small incision and insufficient drainage of the cryptogenic abscess; complex multilevel character of purulent cavity, significantly complicating its adequate revision; severe concomitant diseases (diabetes mellitus, immunodeficiency of primary and secondary character, cancer). There are: complete and incomplete, intersphincteric, extrasphincter and transsphincteric fistulas.

In the diagnosis of anal fistula and anorectal abscess it is necessary to apply finger examination of the rectum, anoscopy, sigmoidoscopy, fistulography.

**Differential diagnosis.**

Differential diagnosis should be carried out between the existing classification of diseases and abscessed boils and carbuncles of perianal region, acute bartholinitis, abscess of the small pelvis, prostate gland, epithelial coccygeal course.

 Abscident furuncles and carbuncles of the perianal region are similar in clinical manifestations to the subcutaneous form of acute paraproctitis by the presence of fever, sudden pulsating pain in the perineum, the presence of perianal inflammatory infiltrate. These diseases are distinguished by the appearance of inflammatory infiltrates that have a strictly superficial localization with a single or multiple necrotic cores. Rectal examination demonstrates that infiltration for boils and carbuncles is not connected with the lumen of the rectum. To clarify the diagnosis they use abscesses or introduction into the cavity of the abscess a coloring mixture (4% indigokarmine solution), which certify the presence or absence of a connection with the lumen of the rectum.

Acute bartholinitis in a stage of abscessation also may resemble an acute paraproctitis. History of bartholinitis abscess formation occurs in 7-10 days from the onset of the disease, and in acute abscess after 2-3 days. Bartholinitis is not characterized by a violation of the act of defecation, and for acute paraproctitis such a phenomenon is typical. On closer inspection with bartholinitis is almost always seen on the eve of the opening of the vagina hole of the ductless Bartholin gland, which when pressed on the infiltrate comes the pus, there is no connection with the crypts of the anal canal. In doubtful cases, diagnostic tests are used with the introduction of methylene blue into the cavity of the abscess and the tampon into the rectum – staining the tampon with blue will indicate the connection of the abscess cavity with the lumen of the rectum.

 Abscesses of the pelvis (Douglas space) occur mainly in the postoperative period in patients who underwent common peritonitis 7-14 days after surgery. In this case, the purulent focus is located in front of the rectum wall, is not associated with crypts, the mucosa above it is not changed, it is mobile. In the diagnosis helps rectal examination, ultrasound of the pelvis.

Prostate abscess is a complication of acute prostatitis, develops with inadequate treatment for 7-16 days of the disease. It differs from acute paraproctitis by sharp phenomena of pollakiuria up to infrarenal anuria due to compression of the prostatic part of the urethra, pyuria in urine tests, which does not happen with acute paraproctitis. Rectal finger exam allows the palpation of an enlarged, sharply painful, prostate gland with a focus of softening. . With ultrasound with the rectal probe abscess cavity is visualized, its relationship with the surrounding structures is established.

Hemorrhoidal disease (hemorrhoids) – primary varicose transformation of cavernous bodies from the outside and inside of the anal sphincter, can be complicated by the development of: phlebitis of the hemorrhoidal node, its infringement, anal fissure, cryptitis and acute paraproctitis, chronic anemia due to frequent blood loss. Secondary varicose veins of the venous cavernous plexus of the anal region is a sign of portal hypertension. This is characterized by the presence of tension in the area of other portocaval anastomoses – the anterior abdominal wall ("Cruveilhier's sign / Medusa head"), esophageal-cardiac zone, the presence of jaundice, ascites.

Pilonidal sinus - an anomaly in the development of the skin of the sacral - coccygeal region, due to the involvement of the skin as a result of incomplete reduction of the former muscles of the tail. Pustules are formed in the surrounding tissue, not associated with the sacrum and coccyx. The transition of the acute stage of inflammation after the opening of the ulcer is characterized by the formation of an external fistula, which is not associated with the anal region. In a complicated, questionable cases they use fistulography. Benign rectal polyps have a similar appearance with hemorrhoids, but they are arranged randomly, and with hemorrhoids in typical places at 3,7,11 hours. Palpation they do not collapse and do not increase. At the slightest doubts in favor of benign tumors, rectoscopy with biopsy is used.

Anal cracks are more common in women, in 90% of cases localized on the posterior wall of the anal canal. Clinically they are characterized by severe excruciating pain, fear of stool. Finger examination is impossible due to pain. At anoscopy the strip-defect of a wall of the anal channel and "watchdog" hillocks at its bottom edge is defined.

Cancer of the rectum arises in the mucosa, growing deep into the wall of the intestine and on its circumference, clinically characterized by a long symptomless (painless). The pain develops when the tumor sprouts in an area rich in nerve endings or in connection with the development of acute intestinal obstruction. An earlier symptom is the presence of pathological secretions. The onset of anemia of patients develop gradually. Keeping in mind the cancer alertness diagnosis should be based on screening: finger rectal examination, rectoscopy with biopsy of a dubious focus. With the decay of the tumor accession of purulent-septic complications is possible, formation of cancrous and paracancrous abscesses and fistulas.

 **Control questions:**

1. Name the classification of diseases of the rectum.

2. List the instrumental methods of diagnostics used in proctologic patients.

3. What are the clinical signs of acute paraproctitis.

4. Tell us the differential diagnosis of chronic paraproctitis from rectal cancer.

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

The cause of external intestinal bleeding is most often: 4

1. intussusception
2. dysentery

3. polyps

4. hemorrhoids

5. cancer

Early diagnostic technique for suspected rectal disease is: 3

1. radiography

2. sigmoidoscopy

3. finger rectal examination

4. Ultrasound

5. collection of anamnesis

For hemorrhoids is not typical: 5

1. the bleeding

2. loss of nodes

3. itching

4. phlebitis of the node

5. melena

With suspected rectal cancer in the first place, you need to perform: 3

1. EGDS

2. Ultrasound examination of abdominal cavity

3. rectoromanoscopy with biopsy

4. finger rectal examination

5. laparoscopy