MINISTRY OF HEALTH OF UKRAINE

ODESA NATIONAL MEDICAL UNIVERSITY

Faculty *Medicine*
Department *of Surgery with Postgraduate Education*

APPROVED BY

Vice-Rector for Scientific and Pedagogical Work

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METHODOLOGICAL RECOMMENDATION FOR PRACTICAL CLASSES OF THE ACADEMIC DISCIPLINE

Faculty, course Medical 6th year

Academic discipline Surgery

(name of the discipline)

PRACTICAL CLASSES

Practical class № 15

Topic: "The course of acute diseases in the elderly"

Approved:

At the meeting of the Department *of Surgery with Postgraduate Education* of Odesa National Medical University

Odesa National Medical University

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PRACTICAL CLASSES

Practical class № 15

Topic: "The course of acute diseases in the elderly" – 2 hours.

1. 1. Relevance of the topic: this topic is relevant in terms of the formation of clinical thinking among specialists of various specialties and areas. Also, this topic is of interest in terms of important features during an acute illness of elderly people, which determines the correctness and timeliness of the established diagnosis.

2. Objectives:

2.1. Learning objectives:

- Acquaint the student of higher education with the list of the most common acute diseases of the elderly. I level
- A student of higher education should know and learn the pathogenesis of acute diseases in the elderly. II level
- To give students of higher education the opportunity to master the skills of palpation, percussion and auscultation of the abdominal cavity, interpretation of laboratory and instrumental research. III level
- The student of higher education should be able to clinically analyze the data obtained during the examination of the patient. III level

2.2. Educational goals are related:

- with the formation of a professionally significant personality of the doctor;
- Study by a higher education student of the deontological, psychological and professional foundations of a doctor's work.

3. Interdisciplinary integration

Disciplines	To know	To be able to
Previous disciplines. Anatomy	Peculiarities of the topography of the organs of the abdominal cavity and pelvis in the elderly	
Pathophysiology	Peculiarities of physiological and pathophysiological processes in the elderly	
The following disciplines. Propaedeutics of internal diseases	To be able to interpret general clinical and biochemical analyses, their changes in the elderly	Palpation Percussion Auscultation
3.**Interdisciplinary integration** **<u>Topic</u>**		

Acute abdomen. Abdominal injuries. External abdominal hernias. Internal abdominal hernias. Chemical burns and cicatricial strictures of the stomach. Damage to the stomach and duodenum. Peptic ulcer disease of the stomach and duodenum and its complications. Stomach cancer. Liver injuries. Liver abscesses. Non-parasitic liver diseases. Gallstone disease. Mechanical jaundice. Postcholecystectomy syndrome.	Know the methods of research and diagnosis of pathologies of the abdominal cavity	To be able to carry out differential diagnosis between various acute diseases of the abdominal organs in the elderly
Liver tumors. Acute pancreatitis. Pancreatic cancer. Injuries of the pancreas. Damage to the spleen. Spleen disease.		

4. Content of the class

<u>Acute appendicitis in elderly patients,</u> and even more so in patients of senile age, often proceeds smoothly, often with additional layers, so the correct decision on the nature of the disease in this group of patients is a difficult diagnostic task.

Due to the increase in the overall life expectancy of the population, the number of elderly and senile people has recently increased. This can be judged by the percentage of elderly and senile patients hospitalized for various diseases.

When examining elderly and senile patients, their age-related psychology should be taken into account.

Elderly people, experiencing a loss of strength, a decrease in the ability of many vital functions, are more cautious in their decisions. By this age, many of them have

suffered a number of serious illnesses, the residual effects of which often continue to bother them. If an elderly person had a hernia or gastritis shortly before the attack of acute appendicitis, he or she is more likely to attribute the onset of abdominal pain to an exacerbation of these diseases. Elderly patients often start self-medication in acute appendicitis, use laxatives and cleansing enemas.

Late admission of patients with acute appendicitis is explained by a number of reasons. One of the reasons is that acute appendicitis in the elderly and senile age in most patients initially occurs without a clearly expressed pain syndrome.

In the elderly, acute appendicitis often begins with general malaise and disruption of physiological discharges. Abdominal distention, mild nausea, gas and stool retention appear. Patients most often attribute such phenomena to senility.

Doctors often explain mild abdominal pain in elderly and senile patients by the phenomena of coprostasis and accumulation of gases in the intestines. In this case, cleansing enemas can give a positive result. After defecation, the abdomen of such a patient becomes less distended, the pain subsides, and the general condition improves.

Features of the course of peptic ulcer disease in the elderly

The growing number of elderly patients with peptic ulcer disease and its complications, the increase in the number of large and giant ulcers in the structure of the disease, and the prolonged period of scarring are a serious problem.

The peculiarities of functional and morphological changes in peptic ulcer disease, such as a decrease in gastric secretory activity, prevalence of atrophic forms of gastritis, and severe microcirculatory disorders in the elderly require further study and systematization to create a therapeutic and diagnostic algorithm and predict the course of the disease.

According to the acid-peptic theory, ulcer formation is primarily based on an imbalance between the state of protective factors that determine the resistance of the gastroduodenal mucosa and aggression factors.

In the elderly, the aggressive role of gastroduodenal motility disorders increases. One of the manifestations of these aggressive factors is biliary reflux (BR). There are two forms of BR: physiological, which is an additional factor in the neutralization of hydrochloric acid, and pathological, which activates pepsinogen even in the absence of hydrochloric acid. In the elderly, pathological BR occurs in 45% of patients. When bile acids enter the gastric lumen in conditions of delayed reverse evacuation, especially during the fasting period, the phenomenon of reverse diffusion of hydrogen ions is realized, which plays an important role in ulcer formation. This probably explains the increase in the number of combined ulcers in the stomach and duodenum in the elderly.

Indicators of gastric secretory activity according to pH-metry differ in young and old people.

The group of “healthy” patients included patients who did not have complaints, anamnesis, and ulcerative lesions at EGD with morphological examination of the mucosa characteristic of peptic ulcer disease. The young age group also included patients aged 20-40 years with peptic ulcer disease or nonulcer dyspepsia.

The obtained results showed that in elderly patients the aggression index and the intensity of acid production are significantly lower than in young people, and the protective function of the antrum is more impaired, as evidenced by the value of the ratio index - it exceeds 1, while the normal value is 0.3-0.7 units.

Interesting results were obtained when comparing the morphological data of the

gastric mucosa.

In the group of relatively healthy elderly patients, the severity of active gastritis is much lower, atrophy of the antrum mucosa prevails, and intestinal metaplasia is often observed. HP infection rate is not more than 10%.

In peptic ulcer disease in the elderly, active gastritis is observed in more than half of the cases, but duodenal ulcers do not have atrophy and intestinal metaplasia, and HP infection is found in more than half of the patients. In gastric ulcers, atrophy and intestinal metaplasia in the antrum prevail, and HP infection is detected in 13.5% of cases. The presence of atrophy in the fundus of the stomach (in 37-40% of our patients) indicates the failure of defense factors, is a prognostically unfavourable sign and occurs in 75-80% of patients with giant and difficult to heal ulcers.

Thus, in the elderly and young, duodenal ulcer disease is characterized by similar morphological changes, which indicates preserved functional activity of the stomach. In gastric ulcer disease in the elderly, functional and morphological parameters are reduced, which can lead to malignization.

After analysing the results, we can identify criteria for predicting the course of peptic ulcer disease in the elderly. We have divided them into aggression factors, factors of inadequate mucosal protection and provoking factors (comorbidities).

By comparing the clinical course of peptic ulcer disease with prognostic criteria, we found a certain pattern according to which patients without a peptic ulcer history with a combination of three forms of comorbidities have a high risk of acute gastric or duodenum ulcers.

In the presence of a peptic ulcer history and a combination of two forms of concomitant pathology with one of the aggression factors, there is a risk of a complicated course of peptic ulcer disease. The most common complications are ulcer perforation or bleeding.

If the course of peptic ulcer disease in patients is associated with factors of inadequate protection of the mucous membrane and is combined with two or more concomitant diseases, we observe ulcerative lesions of large and giant size. Another feature in this group of elderly patients is the prolonged scarring of these ulcers and resistance to conservative treatment.

Features of the course of acute cholecystitis in elderly patients

They are characterized by a high incidence of destructive forms of cholecystitis and their complications with peritonitis. It should be borne in mind that such changes in the gallbladder can develop on the first day due to perforation of the gallbladder. The atypical course is manifested by the discrepancy between the clinical picture of the disease and the pathomorphological changes in the gallbladder. The clinical picture is dominated by symptoms of intoxication, while pain and signs of peritonitis may be unclear.

COMPLICATIONS:

Gallbladder hydrops - is an aseptic inflammation of the gallbladder that occurs as a result of a blockage of the bile duct by a calculus or mucus. In this case, bile is absorbed from the gallbladder, and a clear exudate (white bile) accumulates in its lumen. During palpation, patients have an enlarged and painless gallbladder. There is purulent bile in the gallbladder cavity.

Gallbladder empyema is a hydrops that was not eliminated in time, which transformed into a new form during repeated infection. The gallbladder in such patients

is palpated as a dense, moderately painful mass. There are no symptoms of peritoneal irritation.

Periodically, high body temperature and chills are observed. There is a high leukocytosis in the blood with a shift in the blood formula to the left.

Biliary pancreatitis. Its main manifestations are deterioration of the patient's condition, the appearance of girdling pain, repeated vomiting, signs of cardiovascular failure, high amylasuria, the presence of an infiltrate in the epigastric region and positive Mayo-Robson symptoms.

Jaundice often occurs when the passage of bile into the duodenum is disturbed due to choledochal obstruction by a calculus or due to edema of the pancreatic head. In this case, there is jaundice of the sclerae, bilirubinemia, dark urine and light, uncoloured feces.

Cholangitis. In patients with this pathology, against the background of jaundice, the body temperature rises to 38-39 °C, fever with heavy sweating, high leukocytosis, and decreased liver function tests.

Hepatitis is manifested by jaundice, increased general weakness, increased blood levels of alanine and asparagine aminotransferases and alkaline phosphatase. The liver in this pathology is painful during palpation, with sharp edges.

Infiltration is a complication that can develop on the 3rd to 4th day after an acute cholecystitis attack. It is characterized by dull pain, the presence of a dense tumour-like mass with indistinct contours in the right hypochondrium, an increase in body temperature to 37.5-38 °C, and negative symptoms of peritoneal irritation.

Abscess. Patients complain of high fever, pain in the right upper quadrant of the abdomen, where a painful tumour-like mass is palpated, fever, general weakness, lack of appetite, jaundice, and sometimes vomiting. X-ray examination of the right hypochondrium shows a horizontal level of fluid and gas above it. There is a high leukocytosis in the blood with a shift of the leukocyte formula to the left.

Liver and kidney failure can develop in very severe forms of cholecystitis. The general condition of the patient is severe, with severe intoxication, agitation, hallucinations, delirium, oliguria and anuria.

Peritonitis is the most common complication of gallbladder perforation into the free abdominal cavity and is manifested by sharp abdominal pain and repeated vomiting. The patient is covered with cold sweat, the skin is pale, blood pressure is low, the pulse is frequent and weak. During the objective examination, tension of the muscles of the anterior abdominal wall is noted.

Acute pancreatitis in the elderly:

Acute pancreatitis is one of the most severe and dangerous diseases of the abdominal cavity, with a mortality rate of 15-20% in acute pancreatitis, according to the World Congress of Gastroenterology. Elderly people account for 30-66% of patients with acute pancreatitis. The highest incidence of the disease is observed between 61 and 70 years of age. Women predominate among patients. All this suggests that with age there are a number of factors contributing to the development of this pathology.

The most common cause of acute pancreatitis in the elderly and old people is biliary tract disease. According to statistical data, 60-80% of patients with acute pancreatitis had a previous or concomitant biliary tract disease.

The alimentary factor is of great importance in the occurrence of this pathology in old age. Often the disease develops after abundant consumption of protein and

especially fatty food, alcohol. This is also facilitated by a plentiful meal at night.

These reasons play a major role in the onset of the disease in elderly people, but their importance increases significantly with aging. This is primarily due to morphological and functional changes in the pancreas, which begin to manifest themselves in the course of aging of the pancreatic lymphatic vessels after 30-40 years. In this regard, the development of periproduct fibrosis, epithelial hyperplasia up to the formation of nipple-like outgrowths directed inside the duct, obliteration of the ducts, a decrease in the total mass of glandular parenchyma, and the development of adipose tissue deserve special attention. By the age of 75-90 years, some of the lobules are completely replaced by adipose tissue, and the total amount of functioning tissue sometimes decreases to 30-40%. There is a certain sequence of morphological changes in the gland: first, vascular changes develop, then connective tissue and adipose tissue grow, followed by atrophy of the gland. In turn, age-related changes in the structure of the secretory apparatus of the gland are one of the main reasons for the weakening of its external secretory function with aging.

The most common symptom of the disease in older people is an attack of sudden pain in the epigastric area when eating a large amount of food, especially fatty or canned food. The pains are compressive in nature, often girdling. They can be so intense that some patients experience shock. The second most frequent symptom of the disease in the elderly and old people is frequent uncontrollable vomiting in small portions (“by the spoonful”), which usually does not alleviate the patient's condition. Vomiting in 80-90% of cases is accompanied by pain. The presence of bile in the vomit indicates the patency of the common bile duct. In severe forms of acute pancreatitis, bloody vomiting is observed.

Intestinal paresis is often noted in elderly patients with acute pancreatitis. Despite the severe pain, the abdomen is soft on palpation, and only slight muscle tension is detected in the epigastric region. This discrepancy is a characteristic feature of pancreatitis in older people. The tongue is usually dry and coated. Patients are restless. The skin of the face acquires a pale cyanotic hue, sometimes there is jaundice of the sclerae and skin. Many patients have areas of cutaneous hyperalgesia in the area of D segments. Breathing is rapid (28-30 per minute), pulse is frequent (100-140 per minute), of low filling and tension, blood pressure is often reduced.

However, in the elderly and old people, more often than in young people, acute pancreatitis occurs with mild and slowly progressive symptoms: there are mild pains in the epigastric area without radiation to the back and lower back, no vomiting, and the abdomen is slightly distended. Often there are pains in the heart area, mimicking the picture of coronary insufficiency, sometimes painful attacks resemble renal or hepatic colic. In some cases, the pain is continuous, resembling that of acute cholecystitis, and sometimes it is paroxysmal, as in cholelithiasis or urolithiasis.

Older people are characterized by a more frequent transition of acute serous pancreatitis to necrotizing and purulent pancreatitis. The main criteria for this transition are increased abdominal pain, signs of peritoneal irritation, fever up to 38-39 °C, abdominal and pleural effusion (exudate contains pancreatic enzymes), increased diastasis in the urine, leukocytosis and increased neutrophil shift to the left, deterioration of the general condition with increasing intoxication, and, finally, the development of shock, which is often the direct cause of death. At the same time, in elderly patients, both the temperature reaction and changes in the blood may be mild. Quite often, in

elderly and old patients, the relatively favourable course of acute pancreatitis is unexpectedly complicated by acute cardiovascular and renal failure, renal coma, and intestinal obstruction.

Laboratory tests play an important diagnostic role in recognizing acute pancreatitis. One of the most constant signs (in 75-90% of patients) is an increase in urine and blood amylase levels up to 256-5000 units or more in 2-4 hours after the onset of the attack. It is advisable to determine amylase at the height of the attack several times a day. However, in the elderly and old people with acute pancreatitis, amylase levels may be low, and in the case of pancreatic necrosis against the background of deterioration of the patient's condition, amylase in the blood and urine may even be within normal limits. This is due to the fact that the reduced amount of functional pancreatic parenchyma is accompanied by destructive changes caused by the pathological process. As a result, there is an almost complete destruction of the acinar cells of the gland, which produce pancreatic enzymes. Thus, the absence of hyperfermentemia and hyperfermenturia does not exclude the presence of acute pancreatitis in elderly patients.

A blood test reveals moderate leukocytosis with a neutrophilic shift to the left, eosinopenia, lymphopenia, monocytopenia, elevated ESR, hypoproteinemia, and an increase in the gamma globulin fraction. Hyperglycemia and glucosuria are often observed in elderly patients, which is associated with insufficient pancreatic incretory function.

Acute pancreatitis should be primarily differentiated from such diseases as myocardial infarction, acute cholecystitis, hepatic colic, gastric ulcer, acute peritonitis, intestinal obstruction, acute appendicitis.

It should be emphasized that acute pancreatitis in the elderly due to its frequent atypical presentation is diagnosed in about 25% of cases. Therefore, in case of any abdominal pain in the elderly and old people, you should think about acute pancreatitis.

Therapeutic measures for acute pancreatitis should be carried out in a hospital and begin as early as possible. It is necessary to create physiological rest for the gland: strict bed rest, hunger for 3-5 days, an ice bubble on the stomach. On fasting days, the patient is given intravenous drip of saline solution with 5% glucose - no more than 1500-2000 ml per day to combat intoxication and dehydration. Electrolyte metabolism is corrected, as it is often disturbed. In case of frequent vomiting and severe stomach distention, it is advisable to pump out its contents with a thin probe inserted through the nose.

To stop the pain and suppress the external secretory function of the pancreas, 0.75 ml of 0.1% atropine solution is administered 2-3 times subcutaneously; it is advisable to use no-shpa, papaverine, halidor and other antispasmodics in combination with promedolol, dimedrol. Morphine is not recommended, as it can cause spasm of the sphincter of Oddi and increase pain. A good therapeutic effect is provided by bilateral ureteral novocaine block (50-80 ml of 0.25-0.5% solution) and intravenous administration of novocaine (5-10 ml of 0.5% solution) in saline.

An important factor in the treatment of acute pancreatitis is the use of drugs that inhibit the activity of pancreatic enzymes (tracylol, cialis, contrail). In the first 3-4 days, 25,000-50,000 units of the drug are administered per day intravenously drip in 200 ml of saline, then the dose is reduced to 10,000-20,000 units per day daily for a week.

In case of shock, 1.5-2 litres of 5% glucose solution is administered

intravenously as a drip, caffeine, ephedrine, camphor, cordiamine is administered subcutaneously, and 200-250 ml of blood or plasma is transfused daily. From the first days of the disease, calcium gluconate or calcium chloride is prescribed intravenously. In severe edematous phase of acute pancreatitis, it is advisable to use steroid hormones. Antibiotics are prescribed to fight infection. In order to prevent thrombosis in the first days of the disease, anticoagulant therapy is performed.

In elderly and senile patients, surgical intervention for acute pancreatitis is performed only for vital indications due to the development of complications (abscess, bleeding, perforation, pseudocysts). This is due to the fact that patients of this age have changes in the cardiovascular and respiratory systems, metabolic disorders, and sharply limit the body's adaptive capacity, causing the development of severe complications in the postoperative period (cardiovascular insufficiency, pneumonia, thromboembolism, etc.).

Acute pancreatitis is much more severe in the elderly and old people, and is more likely to be fatal (70% of all deaths from acute pancreatitis are over 50 years old). The most common causes of death include the development of heart, liver and kidney failure, and intestinal obstruction. Focal pneumonia, thromboembolic complications, and diabetic coma account for a significant percentage.

In the prevention of acute pancreatitis, timely treatment of liver and biliary tract diseases, dietary compliance and a rational diet are of primary importance. The caloric intake between attacks in the elderly should not exceed 2200 kcal, and in the old people - 2000 kcal.

Four warm meals a day at the same time is recommended. The foods included in the diet should be well chopped. The diet excludes cakes, cream products, fried meat, smoked sausages, canned foods, fatty cabbage soup and soups with strong meat or fish broth, pickled and salted vegetables, spicy marinades and seasonings, hard-boiled eggs, and any alcoholic beverages.

Sour milk, kefir and other lactic acid products are recommended. Patients' diets should contain foods rich in protein (1.2-1.5 g of protein per 1 kg of body weight per day), with preference given to such foods as cottage cheese, lean veal, egg white, various cereals (buckwheat, oatmeal, etc.). It is also allowed to eat low-fat boiled meat, baked meat pudding, meatballs, chopped meat, and lean varieties of freshwater fish. Carbohydrates (up to 300 g per day) and fats (up to 30 g per day) should be limited in the diet, with vegetable fats (sunflower and corn oil) being preferred.

The menu should include at least 600 g of vegetables daily. It is advisable to eat some raw vegetables. Fruits and berries (apples, black currants, briars, prunes) contribute to normal digestion.

It is useful to conduct a so-called fasting day once a week, prescribing the patient 1 litre of kefir and 400 g of apples or 1 litre of fruit juice and 400 g of cottage cheese per day. With good tolerance, you can practice the drinking version of unloading: 10-15 glasses of boiled water and a glass of raisins or dry compote. Strict adherence to the diet is due to the fact that in the vast majority of cases, the development of the disease is associated with a deviation from it.

Elderly and senile people are recommended to systematically use light choleretic remedies - infusions of briar and corn stigmas, choleretic tea. Drink the infusions 30 minutes before meals, half a glass 3 times a day, warm. It is also advisable to conduct weekly blind probes - on an empty stomach, the patient drinks a glass of a warm solution

of sorbitol or xylitol (20 g), Carlsbad salt or Barbara (1-3 teaspoons per glass of water), after which it is necessary to lie on the right side for 1 ½ hours with a warm heating pad under it.

For preventive purposes, it is advisable to periodically undergo sanatorium treatment courses at drinking resorts (Truskavets, Borzhomi, Karlovy Vary).

Age-related physiological changes in the gastrointestinal tract:

Malabsorption syndrome
Diverticulosis, constipation
Fecal incontinence
Pancreatic insufficiency
Cholelithiasis

Esophagus: reduced force of contractions, delayed sphincter relaxation

Stomach: atrophy, slowed motor activity, decreased gastric secretion

Small intestine: reduced absorption of D-xylose, large amounts of fat, vitamin D, folic acid, calcium, zinc

Colon: atrophy of the muscle lamina, increase in collagen and elastin, increase in food digestion time

Anorectal area: decrease in anal sphincter tone due to a decrease in muscle mass and impaired perineal innervation

Pancreas: atrophy, increased diameter of the ducts, in 10-15% - amyloid deposition in the pancreas

Gallbladder: decreased reaction to cholecystokinin, increased bile lithogenicity (increased cholesterol content in bile, increased micelles size)

Disease's characteristic of the elderly

Dysphagia, reflux esophagitis,
esophageal diverticulitis
Atrophic gastritis, erosive and
ulcerative lesions
Malabsorption syndrome
Diverticulosis, constipation
Fecal incontinence
Pancreatic insufficiency
Cholelithiasis
The characteristic pathology is vascular
disorders
Ulcers and erosions of the stomach
and duodenum
Bleeding disorders
Ischemic pancreatitis
Abdominal ischemic disease
Mesenteric thrombosis

Diagnostics:

Abdominal palpation - moderate pain in the epigastrium and near the navel
Systolic murmur over the abdominal aorta, in the mesogastrium (not always)
Instrumental methods (X-ray, endoscopic) - no changes.
Laboratory methods - lipid metabolism disorders

Fecal examination - neutral fat, undigested muscle fibers, mucus
Verification of the diagnosis:
Ultrasonography of abdominal vessels
Angiography of the abdominal aorta and its branches is the gold standard
Treatment of abdominal coronary artery disease
Fractional nutrition
Calcium antagonists (nifedipine) 10 mg orally before each meal
Antispasmodics (no-shpa, Duspatalin, spasmoman, dicetyl)
Pentoxifylline IV and orally
Disaggregants (aspirin, Cardiomagnyl) Rheopolyglucin 400 ml / day IV
Nicotinic acid derivatives (complimin 150 mg 3 p / d, theonicol 150 mg 3 p / d)
Surgical reconstruction of blood flow

Thrombosis and embolism of the mesenteric arteries:

Sudden onset of intense cramping abdominal pain with a maximum in the mesogastrium and right side of the abdomen
On palpation - bloating, moderate tenderness, no tension of the abdominal wall muscles
Later - vomiting, loose stools with an admixture of blood and mucus
Shock
Signs of intestinal obstruction (abdominal X-ray - increased pneumatization, horizontal levels by the end of 1 day)
Intestinal gangrene, peritonitis

Acute disturbance of mesenteric circulation:

Mortality rate - 85-95%
There are no characteristic clinical or standard specific laboratory tests for the diagnosis of ischemia
Late diagnosis is the main cause of death of patients with intestinal ischemia. It is necessary to suspect intestinal ischemia in all elderly patients with acute abdominal pain!

Clinical features of ulcer disease in the elderly:

Frequent damage to the stomach: gastric ulcer - 73%, duodenum ulcer - 27% HP infection - weak (atrophy)
Large sizes of the ulcer defect (2-3 cm)
Manifestation of the disease and exacerbations in the form of bleeding (52%)
Tendency to frequent and prolonged exacerbation (76%)
Atypical pain syndrome or its absence (78%), weight loss, weakness
Absence of seasonal exacerbations (82%).

On the basis of complaints, data of objective and instrumental research, it is necessary to first of all exclude diseases of retroperitoneal organs imitating an acute abdomen: myocardial infarction, basal pleuropneumonia, spontaneous pneumothorax, renal colic, Schönlein-Henoch capillarotoxicosis. Then choose the optimal research program for the differential diagnosis of acute diseases of the abdominal cavity. With the modern possibilities of instrumental diagnostics (ultrasound, X-ray and endoscopic

methods, laboratory tests), establishing the disease that caused the clinical picture of an acute abdomen does not present great difficulties.

Patient M., 75 years old, entered the surgical clinic with pain in the lower half of the abdomen. From the anamnesis: sick for about 16 hours, when pains appeared in the lower right half of the abdomen. Gradually, the pain increased, nausea appeared. The patient was treated independently, taking antispasmodic drugs. During the examination of the abdomen, positive symptoms of Rovsing and Sytkovsky were noted. A diagnosis was made: "acute appendicitis". Phlegmonous appendicitis was detected during the appendectomy. Histological signs of the purulent process in acute appendicitis are:

A. Leukocyte infiltration of the wall.
B. Primary effect.
C. Enlargement of lymph nodes.
D. Vascular expansion.
E. Vascular narrowing.

On the 4th day after appendectomy (phlegmonous appendicitis), a 76-year-old patient complained on acute abdominal pain (colic-like), vomiting, abdominal distension, retention of stool and gases. What was the complication?

A. Adhesive intestinal obstruction.
B. Perforation of the cecum.
C. Thrombosis of mesenteric vessels.
D. Pelvic abscess.
E. Bleeding from the appendicular artery.

In a 70-year-old patient, 6 hours after compression of the inguinal hernia, it involuntarily retracted. After a 4-hour observation in the hospital, the patient underwent surgery. Herniotomy, plastic surgery of the inguinal canal was performed. At the same time, a full bowel revision was not carried out. The next day, the patient developed peritonitis. What is the cause of peritonitis?

A. The intestine that was resected was necrotized.
B. Thrombosis of mesenteric vessels occurred.
C. There was bleeding from the vessels of the spermatic cord.
D. There was an early adhesion obstruction.
E. Pylephlebitis appeared.

A 62-year-old patient was admitted with complaints of intense constant pain. Previously noted heartburn, periodic pain in the epigastrium. Boas sign is positive. Previous diagnosis?

A. Ulcer disease with penetration into the pancreas.
B. Acute pancreatitis.
C. Perforating ulcer.
D. Crohn's disease.

A 55-year-old patient was admitted to the surgical department with complaints of widespread pain throughout the abdomen, weakness, malaise, and an increase in body

temperature up to 39°C. Objectively: dry tongue, tachycardia, decreased diuresis. Five days ago, a giant cyst of the pancreas was detected in the patient in the hospital according to ultrasound. What is the most probable diagnosis?

A. Pancreatic cyst rupture.
B. Perforating stomach ulcer.
C. Aortic aneurysm.
D. Acute destructive pancreatitis.
E. Acute gangrenous cholecystitis.

The patient, 70 years old, has been ill for 10 days. Body temperature is normal. Pain in the right pubic region, where a tumor-like formation of a dense consistency is determined. Symptoms of peritoneal irritation are negative. Loss of body weight is associated with lack of appetite. What disease did the patient have?

A. Appendicular infiltrate.
B. Typhlitis.
C. Tumor of the sigmoid colon.
D. Tumor of the cecum.
E. Tumor of the right kidney.

Patient N. was hospitalized in the surgical department with complaints of severe abdominal pain, mainly in the right hypochondrium, vomiting, fever. The examination revealed symptoms of peritoneal irritation, leukocytosis before 3 p.m. Which of the following is an indication for immediate surgical intervention?

A. Peritonitis.
B. Constant pain.
C. Hyperthermia.
D. Vomit.
E. Leukocytosis.

Patient P., 68 years old, was hospitalized with complaints of moderate pain in the epigastric area, weakness, weight loss of 10 kg in the last month, jaundice, dark urine, discoloration of feces. The level of bilirubinemia is 86 g/l. Alkaline phosphatase 350 g/l. Stercobylin was not found in feces. What method of X-ray examination should be used for diagnosis?

A. Retrograde cholangiopancreatography.
B. Oral cholecystography.
C. Stream cholecystography.
D. Infusion cholecystography.
E. None of the above.

Patient M., 68 years old, had a history of attacks of acute pain in the epigastric region with vomiting, fever, change in the colour of urine, and discoloration of feces. On the 3rd day of the disease, jaundice appeared, which, according to the doctor, is of a mechanical nature. Which of the following indicators increases with mechanical jaundice?

A. Direct blood bilirubin.
B. Blood protein.

C. Blood leukocytes.
D. Urobilin urine.
E. Erythrocyte sedimentation rate.

The patient, 63 years old, complained of severe pain in the right hypochondrium, jaundice of the skin, dark urine and discolored stool. The pain appeared 3 days ago and gradually worsened. During the examination, an enlarged liver and the presence of free fluid in the abdominal cavity were revealed. What laboratory indicator will be the most informative for the diagnosis of mechanical jaundice?

A. Elevation of direct bilirubin level.
B. An increase in the level of indirect bilirubin.
C. Increase in creatinine level.
D. Increase in hemoglobin level.
E. Increase in the level of amylase.

1. Plan and organizational structure of the class

№	Main stages classes, their function and content.	Learning objectives in mastery levels.	Means of training and control.	Materials for methodical support of class visibility, knowledge control of those who study.	Time (in minutes or %) of the total learning time.
1	Preparatory stage	To check the knowledge of the student of higher education and their level of training	Seminar		10%
2	Basic stage	Formation of professional abilities, skills, mastery skills, conducting curation, determining the treatment regimen, conducting a laboratory study	Tests	Work with patients in the department of general surgery and cardiac surgery	60%
3	Final stage	Control and stages of the level of professional abilities and skills, summarizing the classes, providing homework	Daily survey of higher education applicants, testing of practical skills	Conducting classes at office of practical skills	30%

2. Materials for methodical provision of classes.

2.1. Control materials for the preparatory stage of the lesson: test control questions “initial level of knowledge”.

2.2. Materials for methodical support of the main stage of the lesson: methodological developments of the department on the topics of diseases of the abdominal cavity and the formation of practical skills and abilities.

2.3. Control materials for the final stage of the lesson: Questions of the boundary and initial level of knowledge, task Krok-2.

Literature:

1. **https://www.saudedireta.com.br/catinc/tools/e_books/Oxford%20Handbook%20of%20Clinical%20Surgery,%204th%20Edition.pdf**
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