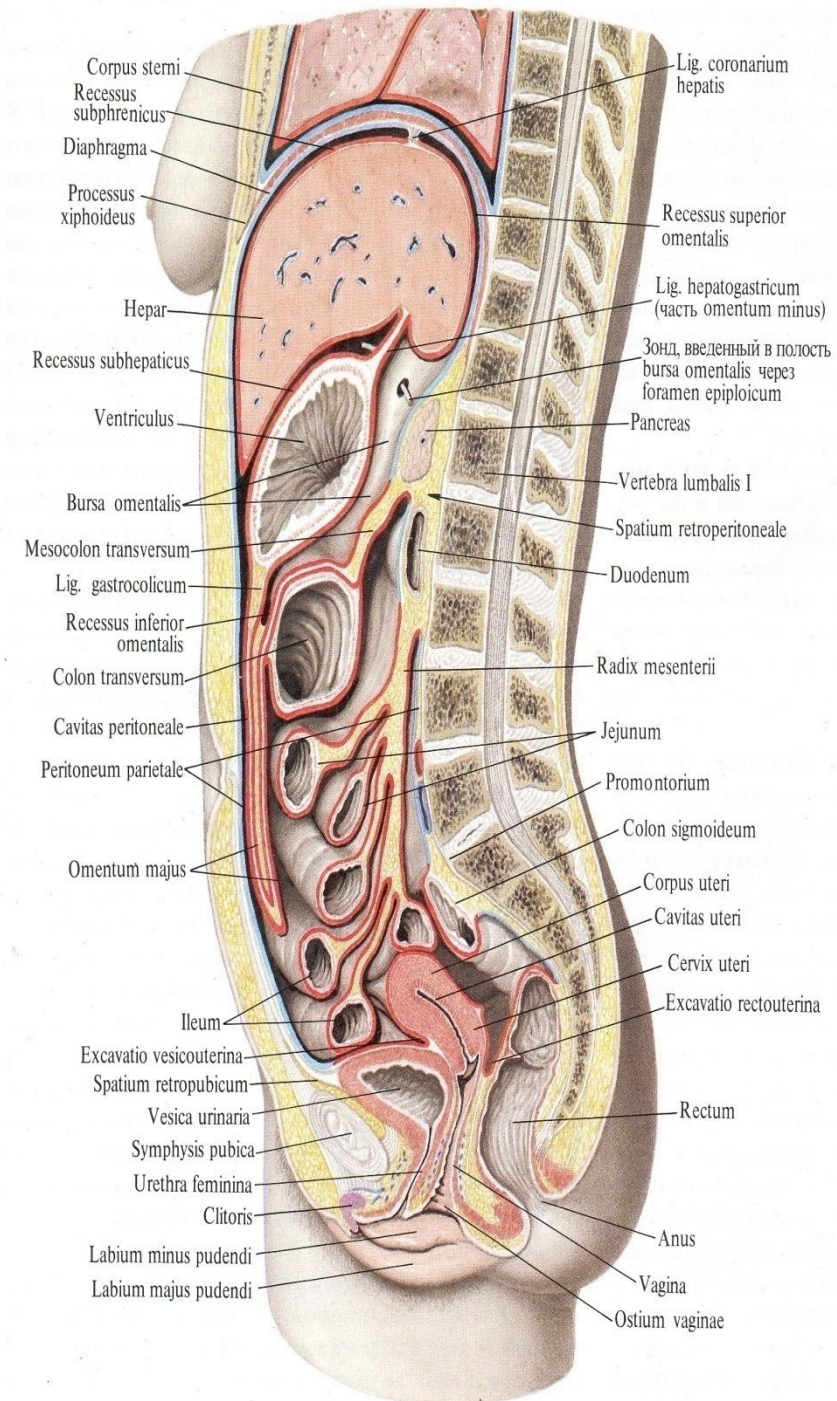
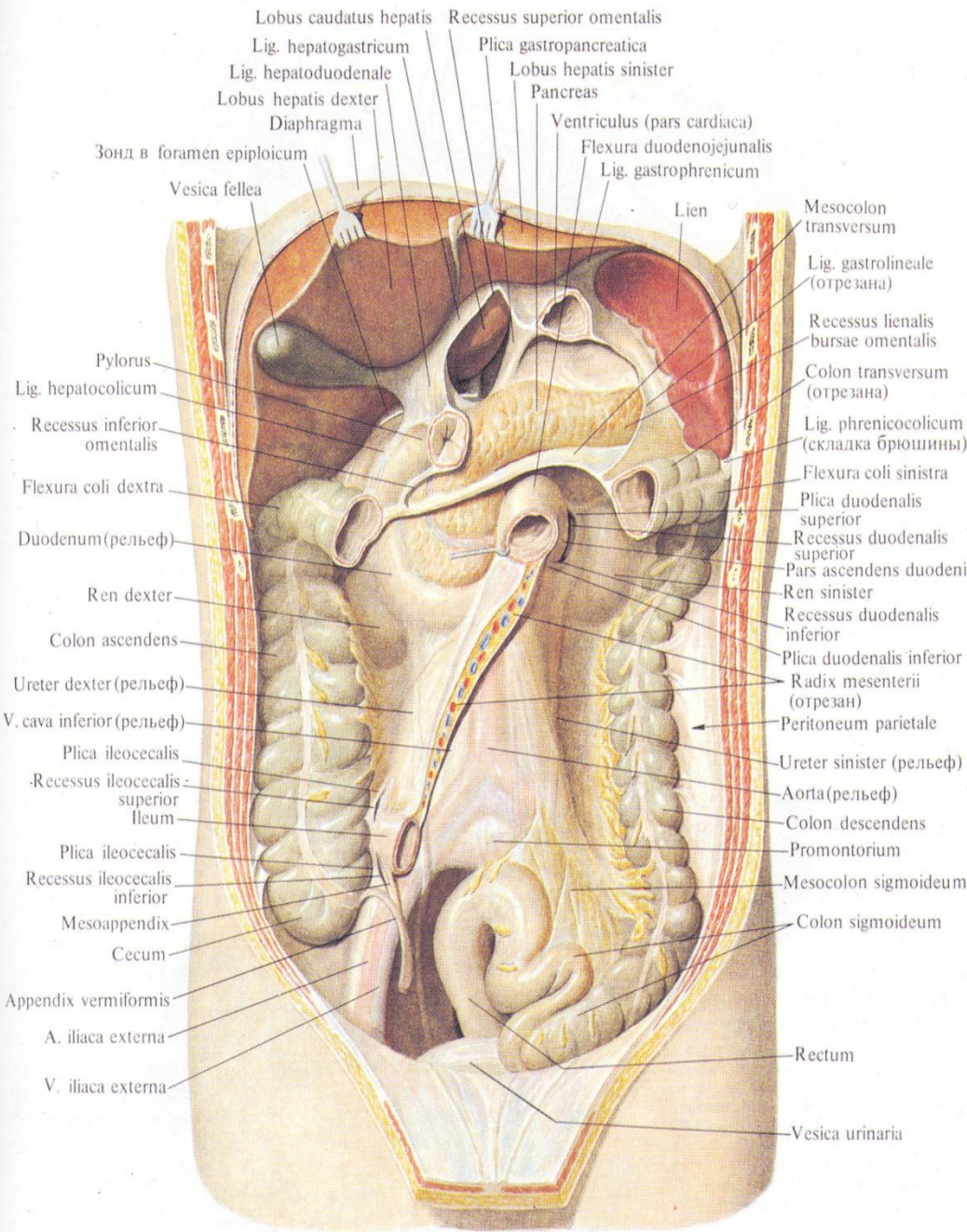


**Peritonitis** is the inflammation of visceral and parietal peritoneum, which is accompanied with hard general symptoms of organism disease and in a short time leads to serious, often irreversible damage of vitally important organs and systems.

# Peritoneum structure.

M.A. Baron (1939) presented the most full knowledge of abdomen structure. He distinguished 6 layers there:

- ▣ - mesothelium, covering the surface of serous membrane;
- ▣ - basal membrane;
- ▣ - the superficial wave collagen layer;
- ▣ - the superficial diffuse elastic net;
- ▣ - deep longitudinal elastic net;
- ▣ - deep lattice collagenoelastic layer.



# Blood support and innervation

## ▣ Blood support

*Parietal Peritoneum* – segmental artery from aorta, epigastric artery

*Visceral Peritoneum* - truncus caeliacus, mesentery artery.

## ▣ Innervations

*Parietal Peritoneum*– somatic

*Visceral Peritoneum*– vegetation

# The classification of peritonitis

- 1) Etiology: The primary peritonitis and secondary
- 2) Clinical passed: acute and chronic
- 3) In dependence of the character of effusion in abdominal cavity peritonitis differ to - serous, fibrinous, purulent (suppurative), hemorrhagic, ichorous etc., and their combinations (serofibrinous, fibrinopurulent etc.).
- 4) In dependence from the infection agent types there are peritonitis caused by:
  - ▣ 1) Intestinal microorganisms: Escherichia Coli, Streptococcus: aerobe (Enterococcus) and anaerobes (Peptococcus), gas-making (Clostridia) and not gas-making (bacteroids) anaerobes, Klebsiella, Proteus, Pseudomonas aeruginosa etc.
  - ▣ 2) Not gastrointestinal bacteria: Gonococcus (Neisseria), Pneumococcus, Hemolytic Streptococcus, Mycobacterium tuberculosis, etc.

**And :** aseptic peritonitis  
fibroplastic peritonitis

## **Pathomorphology of the acute peritonitis.**

**It is determined that the functional status of the peritoneum and omentum play the main role in the character of protective role of the organism against the infection that invades into the peritoneal cavity.**

### **The first phase (early stage).**

- ▣ abundant volume of the turbid exudates in the abdominal cavity
- ▣ serous cover's hyperemia
- ▣ The inflammatory process yet is usual localized in one or another area of the abdominal cavity in this phase.

### **The second phase (late stage).**

- ▣ Besides the turbid effusion in the abdominal cavity, there are the fibrinous applications in the form of threads among the intestine loops.
- ▣ The pus is denser and has a typical odor. The expressed hyperemia of the serous cover, edema and swelling of the intestine is detected. In some places, especially in diaphragm area, all peritoneum layers are infiltrated with leucocytes and lymphocytes.
- ▣ The inflammation has a diffuse character in this phase of the peritonitis.

#### **Вторая фаза (поздняя стадия).**

- ▣ - в брюшной полости отложения фибрина; - гной более густой и имеет характерный запах; - отмечается резкая гиперемия серозных покровов; - отечность и вздутие кишечника; - воспаление имеет диффузный характер.

# ***The third phase (terminal stage).***

- ▣ *Третья фаза (конечная стадия).*
- ▣ There is a significant quantity of the purulent effusion. The peritoneum is deprived from mesothelium on the numerous places and is covered by the fibrinous applications, which contains a lot of leucocytes and other cellular elements. The intestine is much swelled, edemic; its color is dark red. The blood vessels are expressively widened. The inflammatory process includes the whole abdominal cavity and its depth reaches the tissues adjacent to peritoneum. There is edema and hemorrhages are observed in the muscles adjacent to it. Sometimes there are bacteria accumulations in the muscles. In 7 days the necrosis of the arteriole walls may outcome.

- значительное количество гнойного выпота;    - брюшина покрыта отложениями фибрина;    - кишечник резко вздут, отечен, темно-красного цвета;    - воспалительный процесс охватывает всю брюшную полость;    - в близлежащих к брюшине мышцах наблюдается отек и геморрагии.

# pathogenesis

The peritonitis pathogenesis is complicated; the changes in organ and functional systems are different during its development and depend from the stage of the disease. In accordance to this, the next stages of the changes in organism are distinguished.

- ▣ 1. The reaction to the local inflammatory process. These changes are peculiar to the inflammation of any localization. They are characteristic for the early reactive peritonitis stage and for the diseases of the abdominal cavity organs, preceding to it.
- ▣ 2. The reaction of the toxins that outcome to the system bloodstream, which is sometimes characterized with the symptoms, peculiar to end toxic shock, that corresponds mainly to the toxic stage of the peritonitis.
- ▣ 3. The organism reaction on the complicated combinations of factors that is peculiar to the terminal stage of peritonitis, which passes with the predominance of the septic shock signs.



# Clinical signse

- In the reactive stage (the first 24 hours) the leading symptoms of peritonitis are acute pains in the abdomen that increase in the case of changing the body position, cough, motions. Usually the patient lies on the back or on the ill side with the legs close to the abdomen; he spare the abdomen during breathing and cough, avoid unnecessary motions, because they lead to the increasing of pains. In the case of pain's localization in the upper floor of the abdominal cavity its irradiation to the back or to the thoracic girdle is possible.
- The vomiting with stomach content don't bring the relief usually, it can be sole or rare. The pulse become more frequent up to 90 – 100 per minute, arterial pressure is normal or decreased. In the case of some diseases that cause the peritonitis, the development of shock is possible (perforation of the hollow organs, wound, thrombosis and emboli of mesenterial vessels, strangulate ileus, acute pancreonecrosis and others).
- During the superficial palpation of the abdomen the defensive tension of muscles (defense muscular) is detected accordingly to the zone of parietal peritoneum of the front abdominal wall, which is affected with the inflammatory process.

# Diagnostic

- ▣ Shetkin - Blumderg symptom
- ▣ Paralytic bowel obstruction signs
- ▣ Vaginal, rectal examination

## Laboratory investigation:

- ▣ Leukocytosis
- ▣ Relative high rate of Ht
- ▣ Dysproteinemia
- ▣ Hypercoagulation
- ▣ High rate of bilirubin. Nitrous productes
- ▣ acid-base balance, electrolyte rates

# The differential diagnostic of acute peritonitis

1. Urolithiasis
  2. Poisoning of heavy metals
  3. hemorrhagic diathesis
  4. cardiac infarction, fractures of rib
- ▣ The most often a doctor has to differentiate the peritonitis that develops as a result of the pathologic process in the genitourinary apparatus (uratic diathesis, tuberculosis, inflammation etc.) from the different spastic diseases of the digestive system (spastic colitis, pylorospasm etc.),
  - ▣ chronic painful pancreatitis, the exacerbation of the ulcer disease of stomach and duodenum, and many other typical diseases that take a course with exacerbation.

*All these diseases have their specific clinic, and in the case of the careful and attentive examination of the patient it is possible to avoid the mistakes.*

# Principles of surgery

1. **Approach**
2. **Elimination of source of peritonitis**
3. **Sanitization of abdominal cavity**
4. **Decompression of small and large intestines**
5. **Adequate drainage of abdominal cavity**