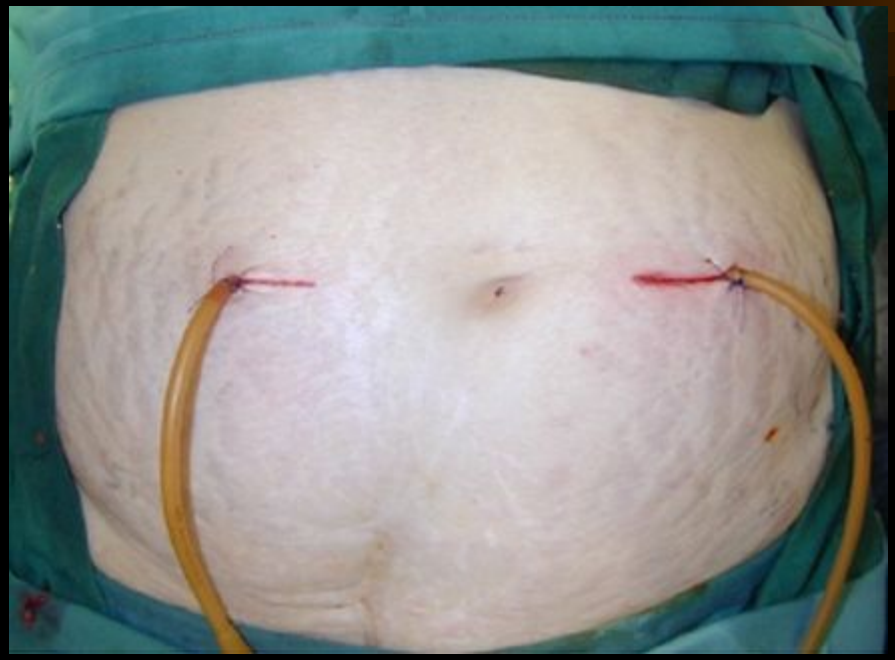
Medical academy named after S.I.Georgievskiy.
Department of surgery № 2.
Head of the department prof. Ilchenko F.N.

ACUTE PERITONITIS



Peritonitis – is the acute or chronic peritoneal inflammation with characteristic local and general changes in the organism and severe dysfunction of vital organs

Acute peritonitis complicates approximately 0.8-2 % of all “clear” operations, and 20 % of all inflammatory pathology of the abdominal cavity.

Mortality rate of peritonitis rises to 70-80 %.

ETIOLOGY

As the complication of surgical pathology

Appendicitis – 50 %
Cholecystitis – 16 %
Perforation of gastric ulcer and cancer – 7 %
Pancreatitis – 6 %
Mesenteric thrombosis – 6 %
Colon cancer – 2 %
Postoperative peritonitis – 13 %

Primary peritonitis

Tuberculosis, canceromatosis, pneumonia, streptococcal infection, gonorrhea

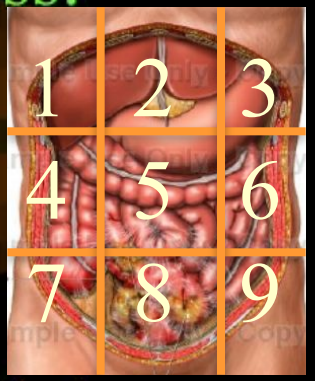
Toxico-chemical aseptic peritonitis

Blood, urine, bile, pancreatic juice

CLASSIFICATION

According to the extension of inflammatory process:

- Local – involvement of 1 anatomic area,
- Diffuse – involvement of 3-6 anatomic area,
- Generalized – involvement of all peritoneum.



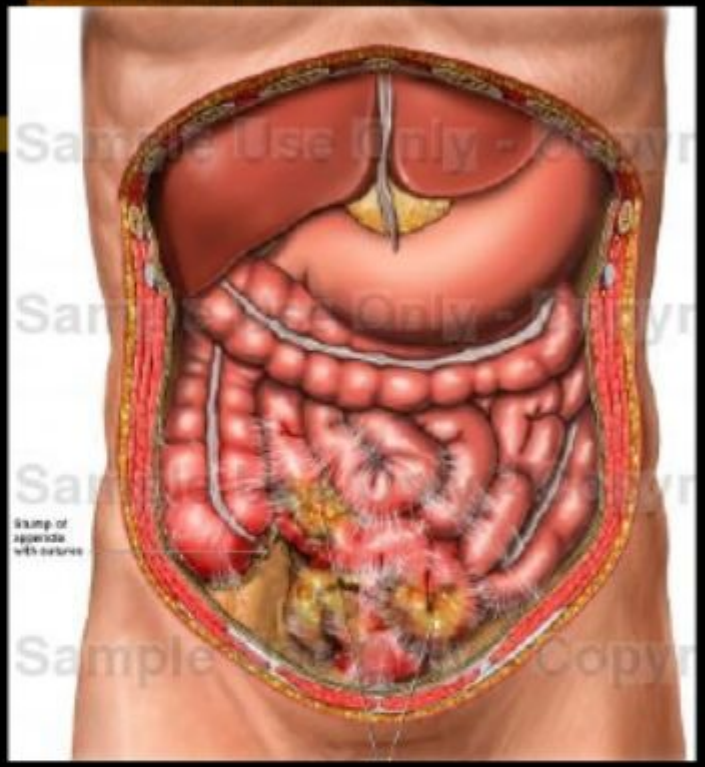
According to the character of the exudate: serous, fibrinous, fibrino-purulent, purulent, hemorrhagic, septic.

According to the stages:

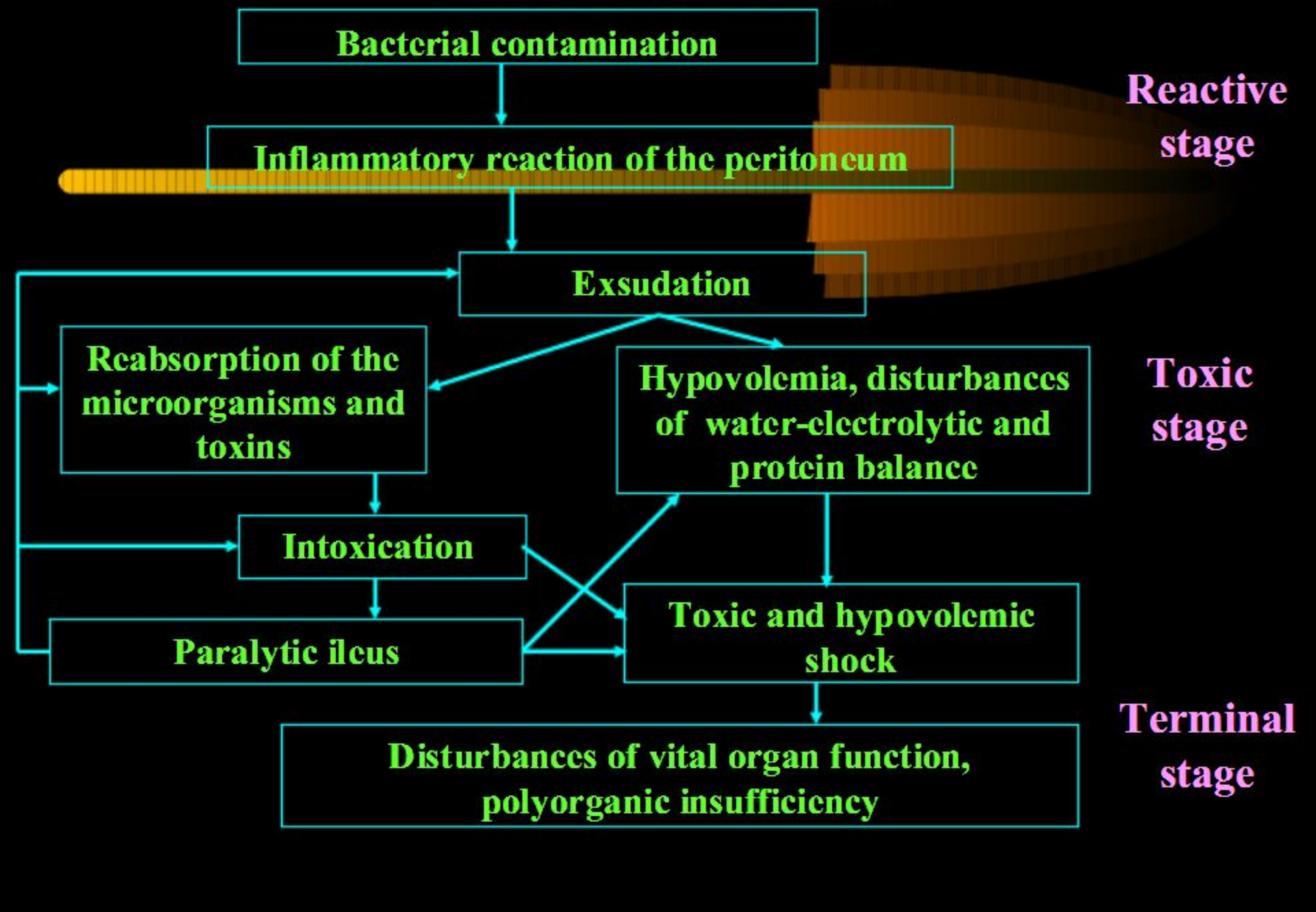
- Reactive (first 24 hours) maximal manifestation of local signs of the disease;
- Toxic (24-72 hours) – gradual reducing of local signs and increasing of general intoxication.
- Terminal (after 72 hours) – severe, often unreversable intoxication with vital function decompensation.

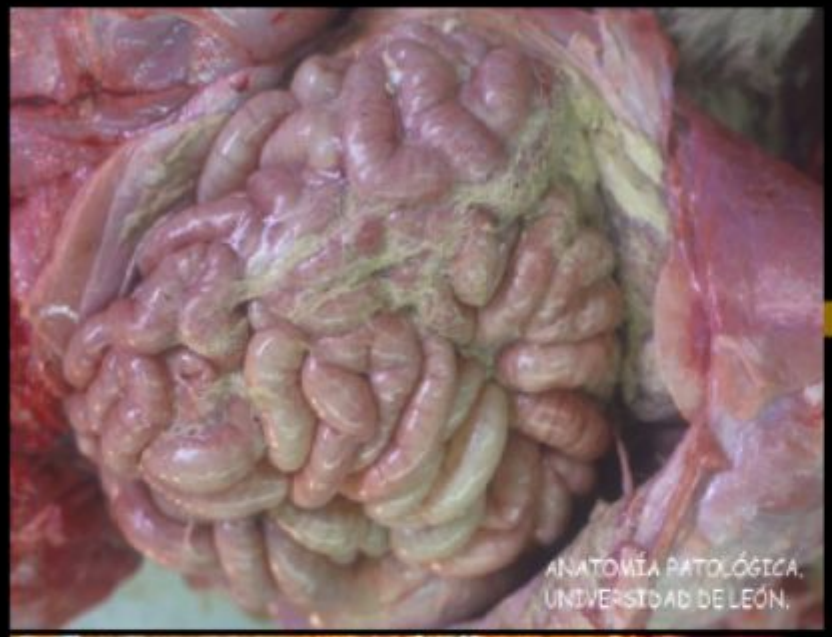
PATHOGENESIS

- Pathogenic microorganisms
- Intoxication
- Hypovolemia
- Disfunction of vital organs



PATHOGENESIS

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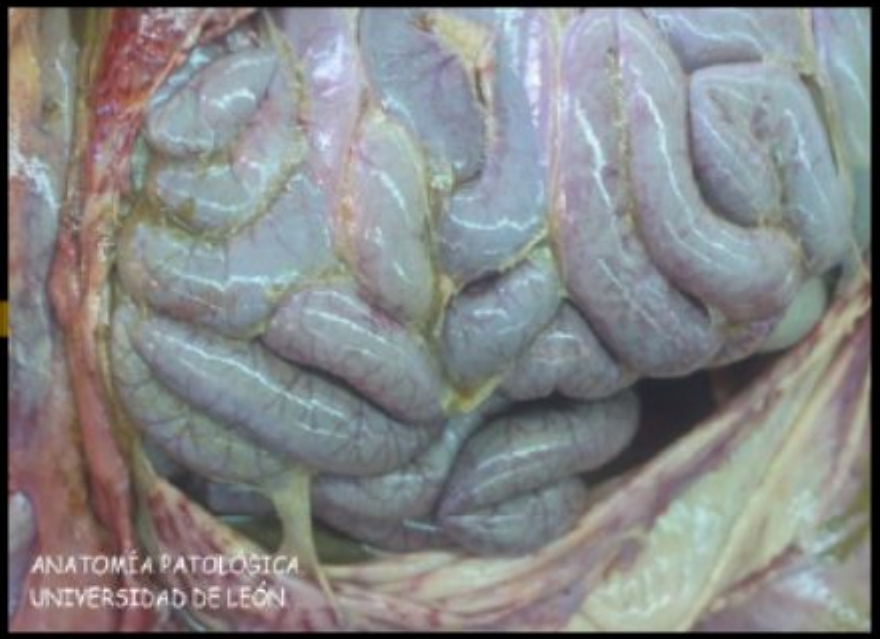
UNIVERSIDAD DE LEÓN.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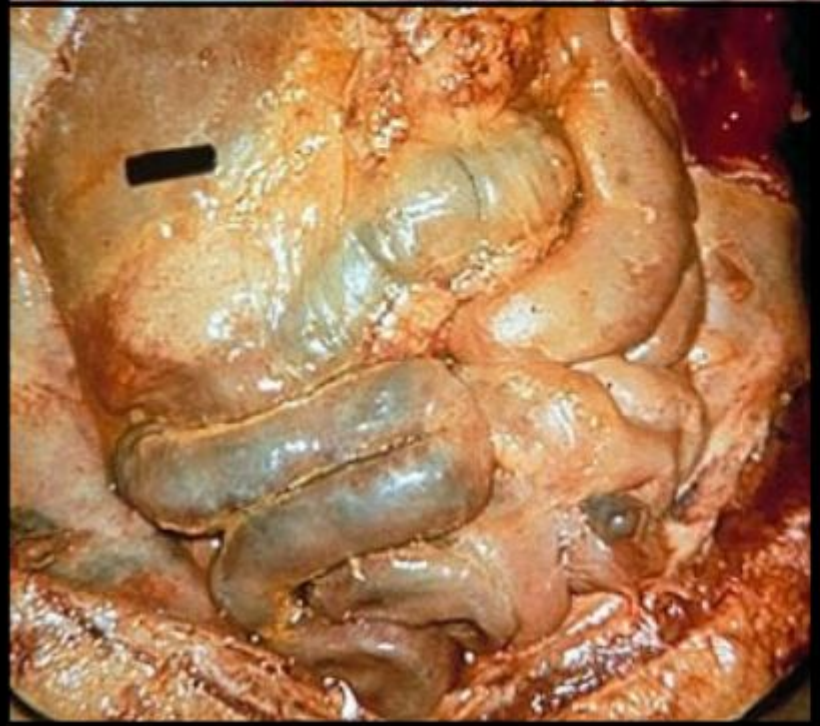


CLINICAL MANIFESTATIONS

Reactive stage

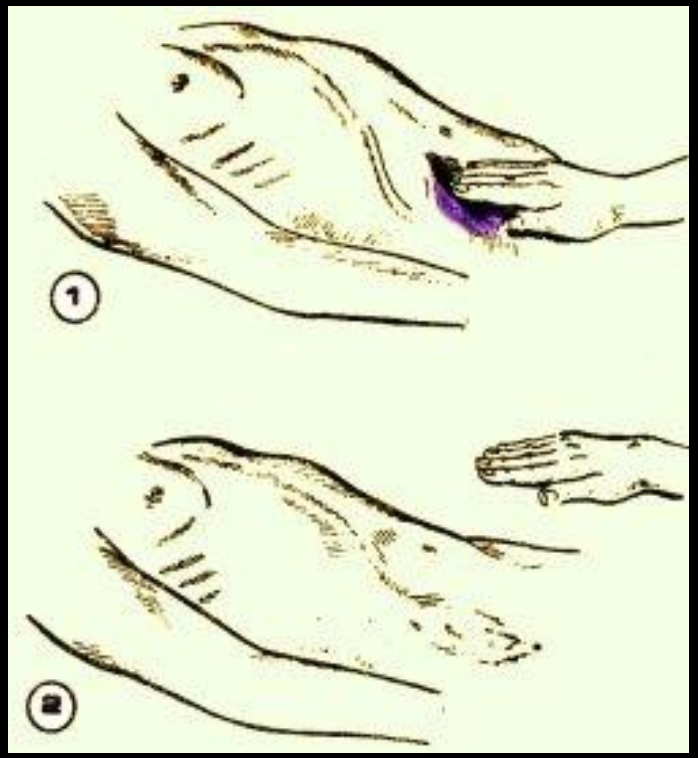
- Sharp intensive pain.
- Forced patient's position in bed.
- Tachycardia 100-120 /min.
- Dryness of tongue.
- Abdominal tension over the site of inflammatory process or desk-like abdomen.
- Peritoneal signs (Blumberg's sign)
- Decrease of peristalsis
- X-ray examination could reveal pneumoperitoneum, Kloiber's cups, intestinal pneumatisation, pleurisy, lung atelectases

Peritoneal signs

Voskresenky's sign

Blumberg's sign

Blumberg sign



The abdominal wall is compressed slowly and then rapidly released. A positive sign is indicated by presence of pain upon removal of pressure on the abdominal wall. It is very similar to rebound tenderness and might be regarded by some authors as the same thing, or at least a particular application of it.

CLINICAL MANIFESTATIONS

Toxic stage

- Decrease of pain.
- Intensive vomiting.
- Positive peritoneal signs (Blumberg's sign)
- Decrease of abdominal tension, abdominal distension.
- Absence of peristalsis, paralytic ileus.
- Tachycardia >120 /min.
- Hypotonia.
- Tachypnea.
- Increase of body t° (> 38° C).
- Dry tongue (like a brush).
- Euphoria.

CLINICAL MANIFESTATIONS
Terminal stage

- Disturbanses of CNS (adynamia, euphoria, psychomotoric excitement).
- Facies Hyppocratica (prostration, face with drawn features, hollowed eyes).
- Anuria.
- Shallow breathing.
- Fecal vomiting, absence of peristalsis, abdominal distension paralytic ileus.
- Positive peritoneal signs (Blumberg's sign).
- Thread-like pulse (impossible to count), hypotonia.
- Cardiac arrhythmia, cardiac failure.
- Disturbanses of blood coagulation.

Differential diagnostics

Signs	Abdominal (peritoneal)	Thoracoabdominal	
		Pulmonary, pleural	Cardiac
Onset of the disease	Gradual in inflammatory processes, sudden in perforation, trauma	Gradual	Sudden
Anamnesis	The disease begins from the pain in abdominal region	Often previous cold factor	Cardiac pathology In anamnesis
Pain in the abdomen	Appears suddenly, permanent, increases during cough, accompanied by vomiting	Appears gradually, permanent, diffuse, considerably increases during deep breathing	Appears gradually, diffuse, increases during physical loading
Face	Pale, with drawn features and hollowed eyes	Hyperemic, cyanosis	Acrocyanosis, fear in eyes
Pulse	Frequent, weak	Full, tachycardia in relation to the body temperature	Weak, often arrhythmia
Tongue, lips	Dry, coated tongue	Moist tongue, lips are cyanotic, with herpes	Moist tongue

Differential diagnostics

Signs	Abdominal (peritoneal)	Thoracoabdominal	
		Pulmonary, pleural	Cardiac
Abdominal palpation	Painful, during deep palpation pain increases	Painful, pain increases during superficial palpation	Slightly painful, during deep palpation pain does not increase
Tension of abdominal wall	Marked expressed, especially in the site of the source of peritonitis	Expressed in the upper parts of the abdomen	Slightly expressed or absent
Blumberg's sign	Positive	Negative	Negative
Intestinal peristalsis	Diminished, then disappears	Not changed	Not changed
Dynamics of peritoneal signs	Progress	Regress	Regress
X-ray of the chest	Pathological changes are absent	Signs of pneumonia, pleurisy	Pathological changes are absent
ECG	Without changes	Without changes	Substantial changes

Postoperative peritonitis

Signs	Noncomplicated postoperative period	Postoperative peritonitis
General condition	Improves to 3-4th day	Worsening to 3-4th day
Pulse	Normal to 3-4th day	Rapid pulse, not related to t°
Body t°	Normal to 3-4th day	Increased all the time
Abdominal distension	Appears to 3-4th day and relief after the enema, flatus tube	Progressively increases, enema and flatus tube inefficient
Peristalsis	Restores	Absence of peristalsis
Abdominal pain	Disappears on 1st-2nd day	Progressively increases
Abdominal tension	Disappears to 3-4th day	Progressively increases

Postoperative peritonitis

Signs	Noncomplicated postoperative period	Postoperative peritonitis
Tongue	Cleans and wet to 2-3rd day	Dry and coated all the time
Thirst	Disappears after infusion therapy	Increases despite adequate infusion therapy
Stool evacuation	Appears to 5-6th day	Absent
Nausea	Not typical	Typical
Vomiting	Not typical	Typical
Arterial pressure	Correspond with preoperative	Hypotonia
Diuresis	Normal	Decreased

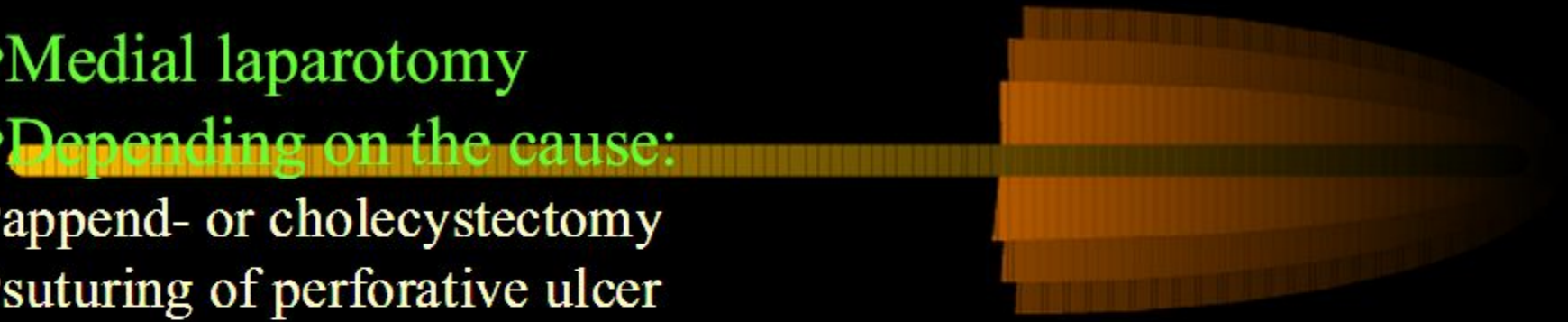
TREATMENT

Peritonitis is the absolute indication for the operative treatment

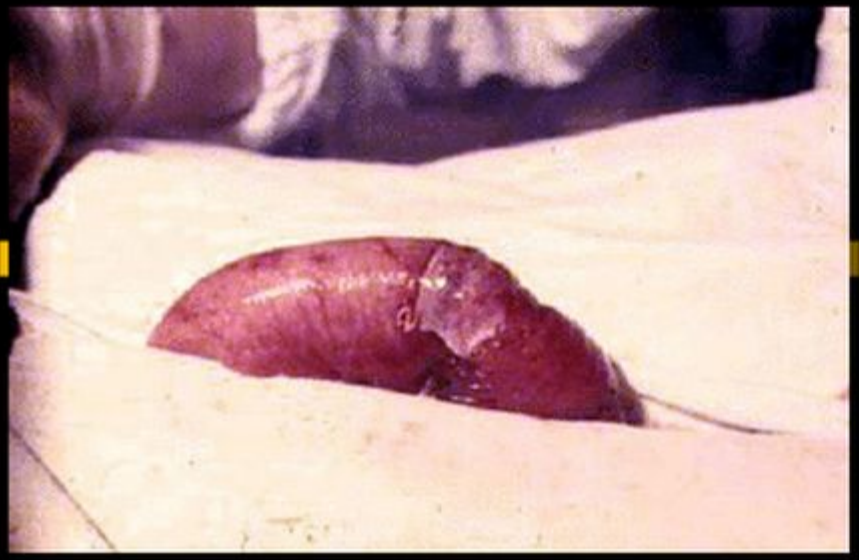
Tasks:

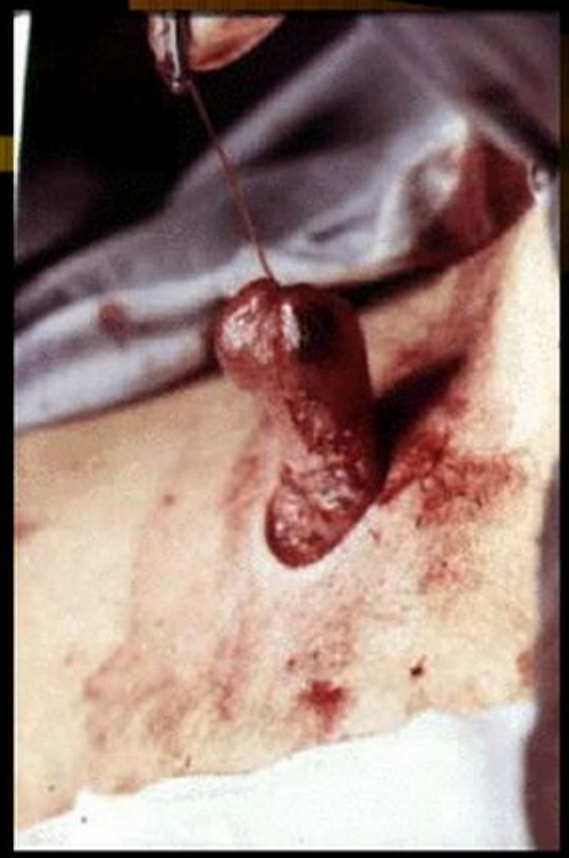
- Removal of the source of inflammation
- Evacuation of the exsudate and fibrin
- Washing of the abdominal cavity
- Satisfactory draining of the abdominal cavity

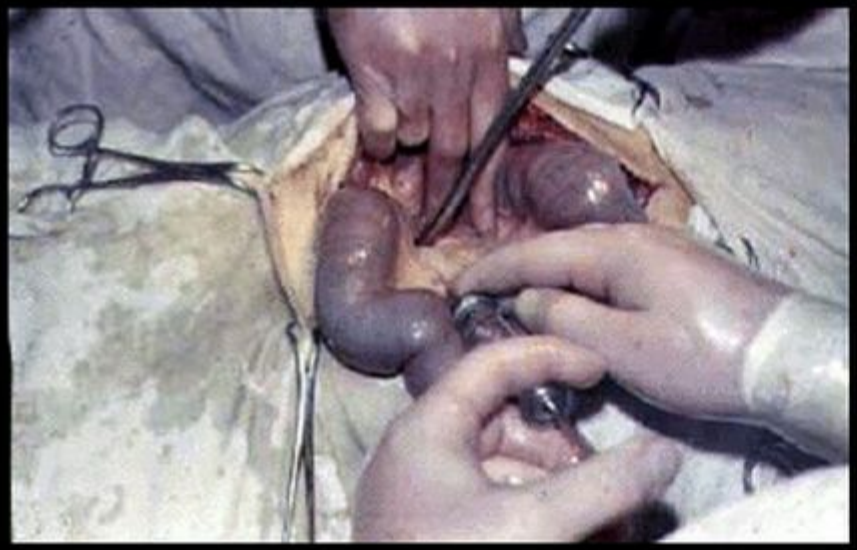
Surgical treatment



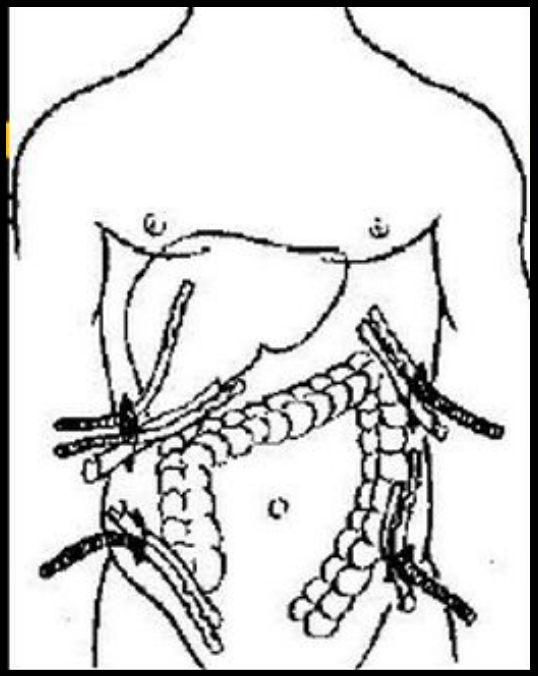
- Medial laparotomy
- Depending on the cause:
  - append- or cholecystectomy
  - suturing of perforative ulcer
  - resection of the colon with colostomy
  - reinforcement of anastomosis suture
- Sanation and washing of the abdominal cavity
- Intestinal intubation
- Procaine block of mesenteric root
- Drainage of the abdominal cavity, peritoneal lavage

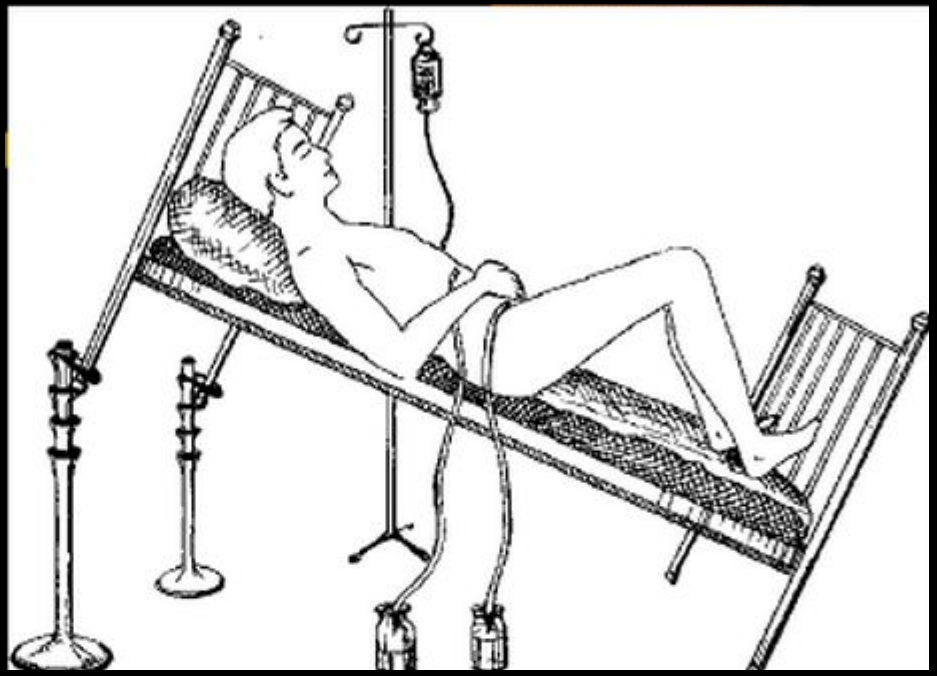






Peritoneal lavage





Pre- and postoperative treatment

- Antibacterial therapy, anti-inflammatory therapy
- Correction of blood rrheology
- Immunocorrection
- Correction of water-electrolyte and protein balance
- Desintoxication
- Renewal of peristalsis
- Correction of cardiac activity and breathing
- Parenteral nutrition

Subdiaphragmatic abscess

Causes:

- Surgical operations (operations for stomach cancer and ulcer, pancreatic resections, operations for stomach peritonitis and intestinal obstruction, splenectomy)
- Abdominal trauma (hematoma, bile accumulation)
- Purulent processes of the organism (paranefritis, liver abscess, pleural empyema)

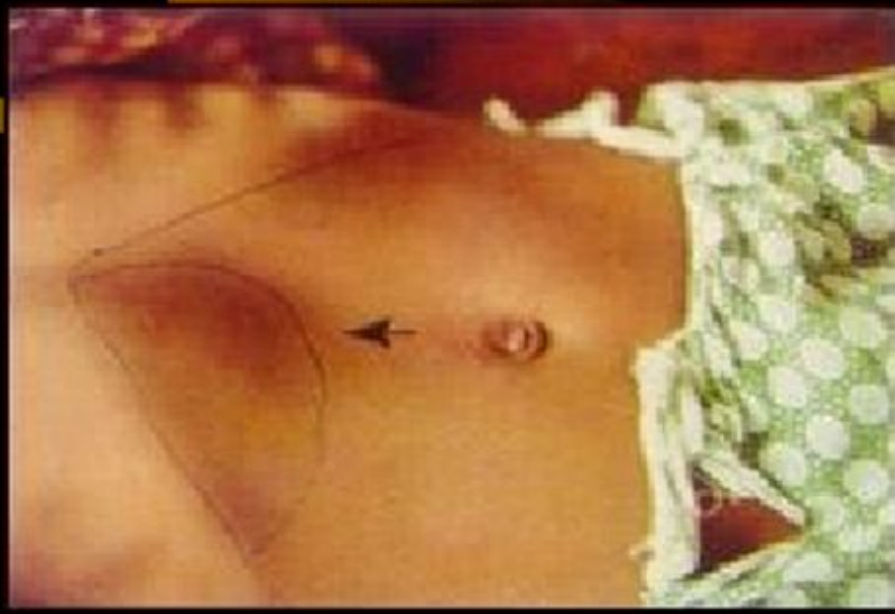
Classification:

- Left-, rightside, bilateral
- Intra-, exraperitoneal

Subdiaphragmatic abscess

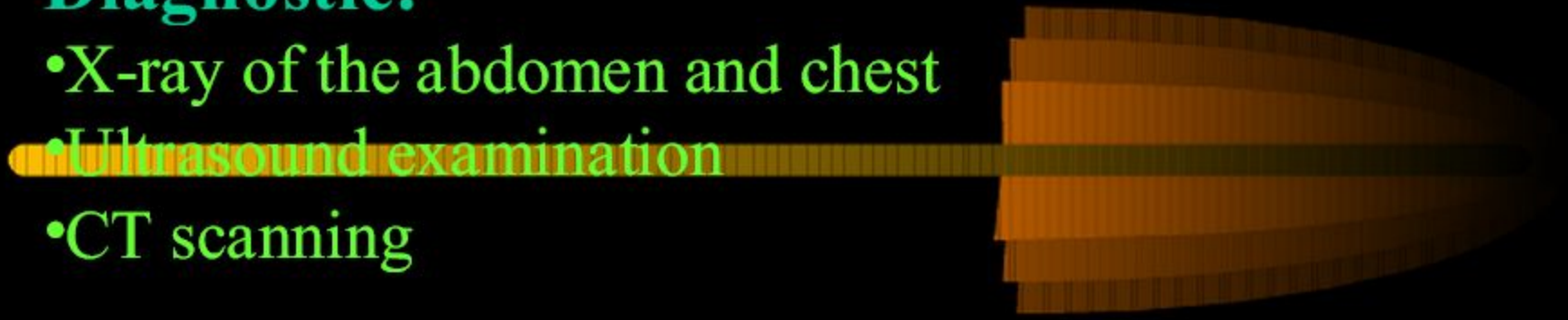
Clinical manifestation:

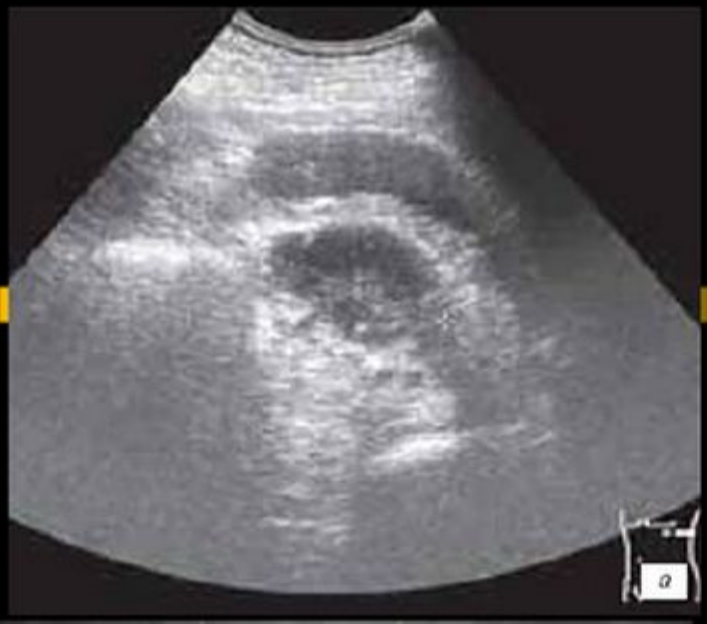
- Intensive pain in upper part of the abdomen
- Phrenicus-sign
- Hectic temperature
- Intoxication
- Restriction of breathing, paradox breathing

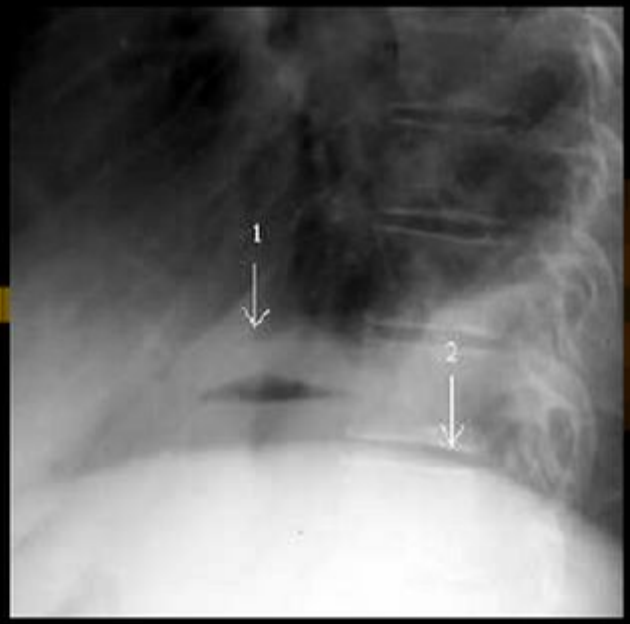


Diagnostic:

- X-ray of the abdomen and chest
- Ultrasound examination
- CT scanning



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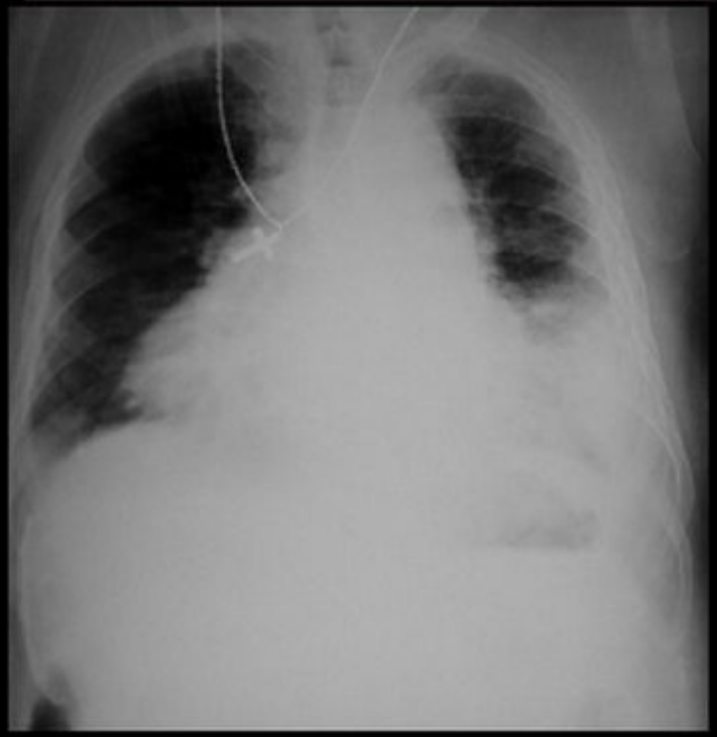
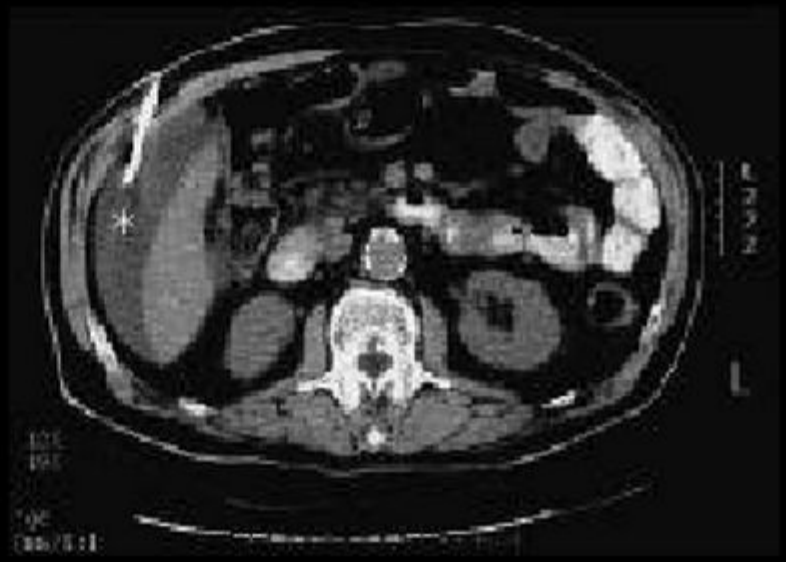
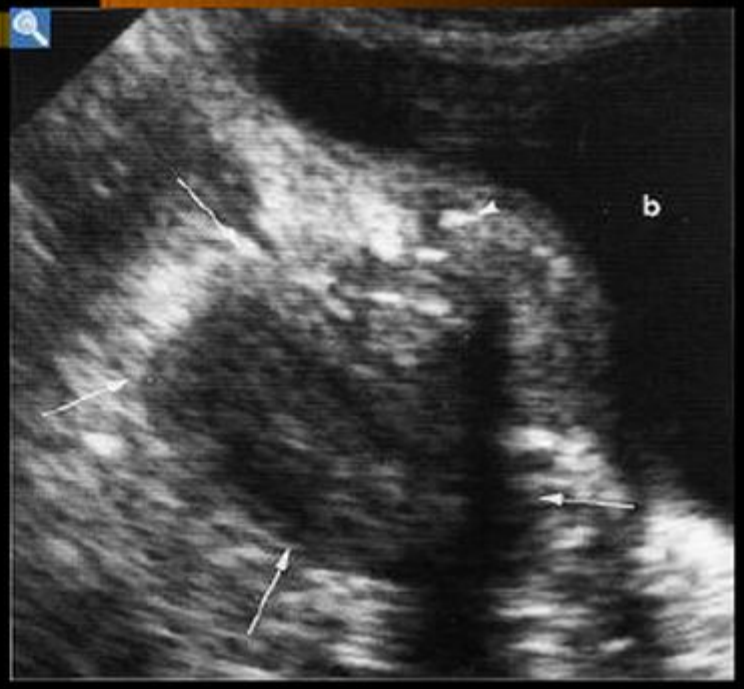




Pelvic abscess

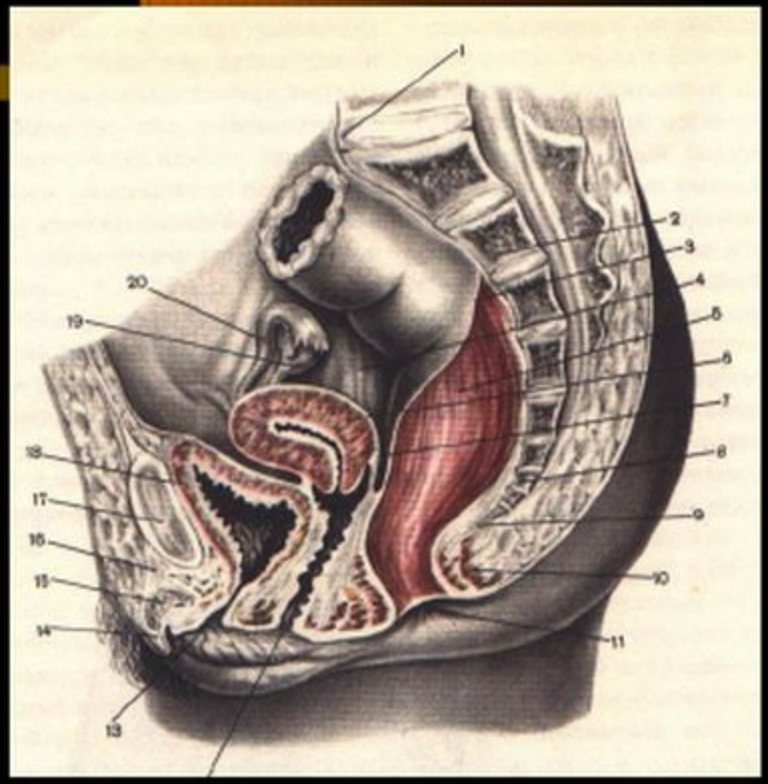
Causes:

- Appendicitis
- Perforation of colon diverticula
- Residual peritonitis
- Purulent gynecologic complications



Pelvic abscess

- Clinic of irritation of pelvic organs (dysuria, pulling rectal pain, tenesmi).
- Pain in the lower abdomen.
- Painfullness of anterior rectal wall and posterior vaginal vault.
- Intoxication



Interintestinal abscess

Causes:

- Surgical operations
- Residual peritonitis

Manifestation:

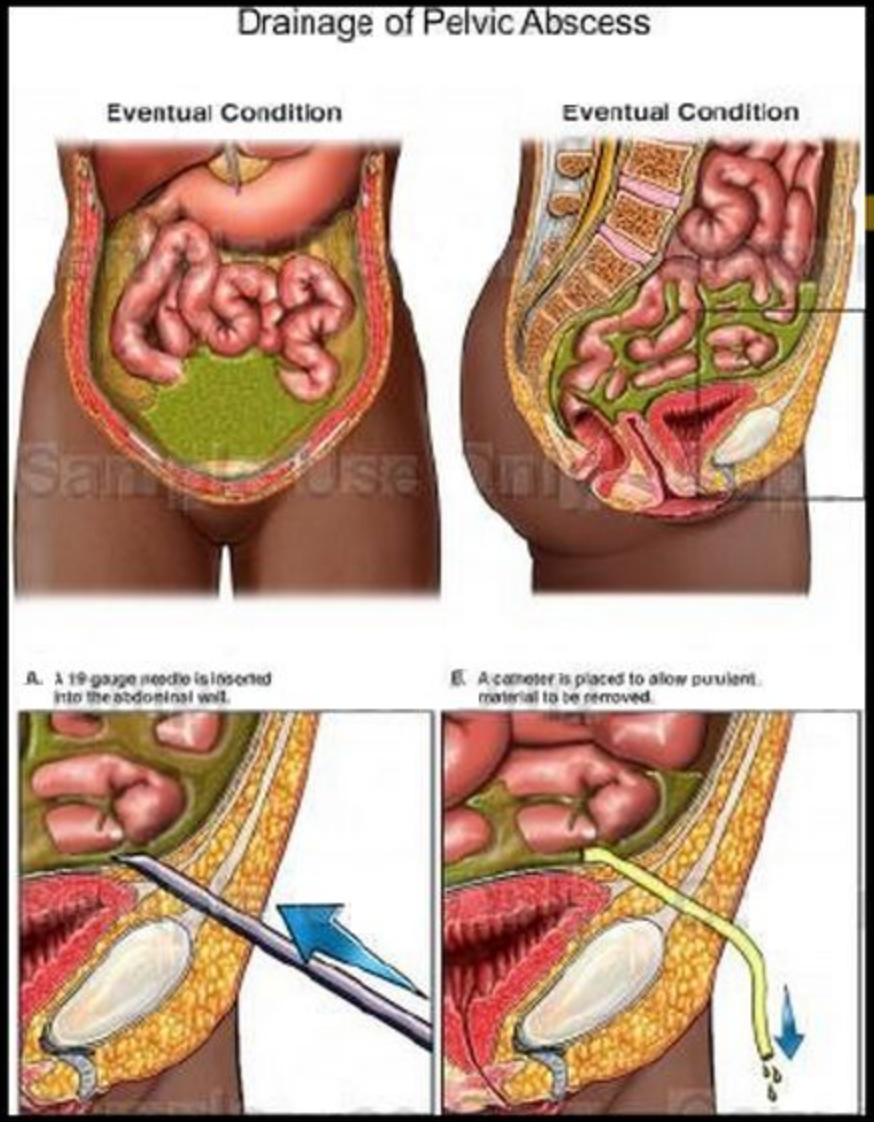
- Intensive pain in the abdomen
- Peritoneal signs
- Relapse of inflammatory manifestation
- Hectic temperature
- Intoxication
- Restriction of breathing, paradox breathing

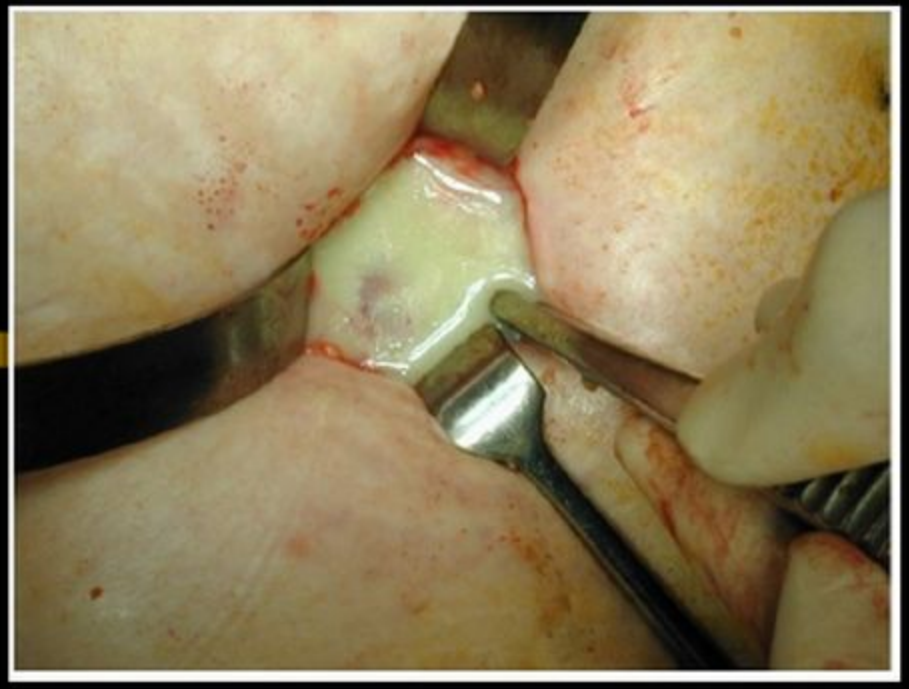
TREATMENT

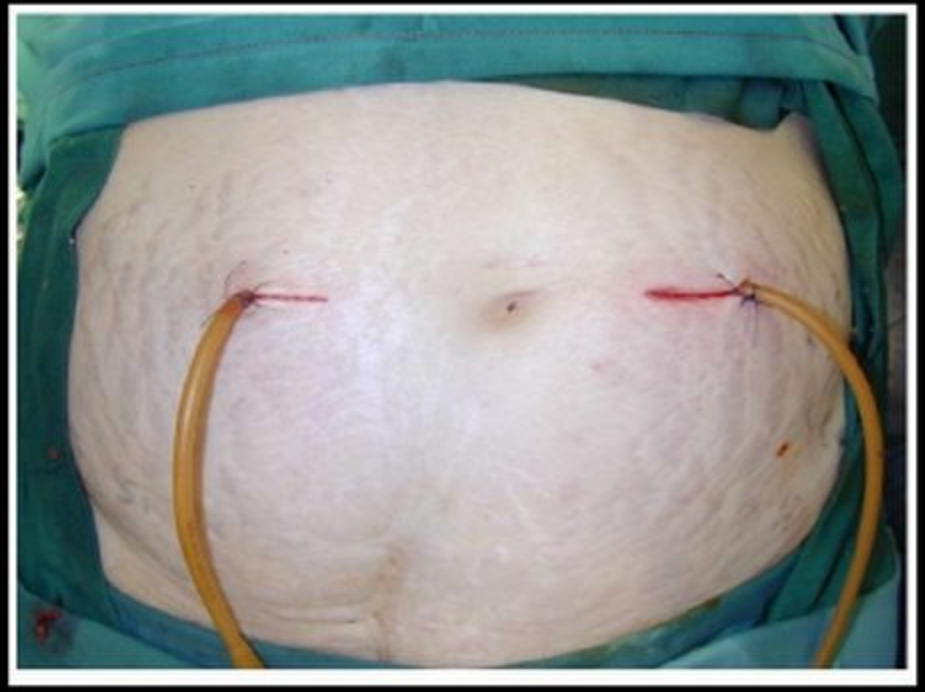
Abdominal abscesses are the absolute for the operative treatment: drainage of the abscess

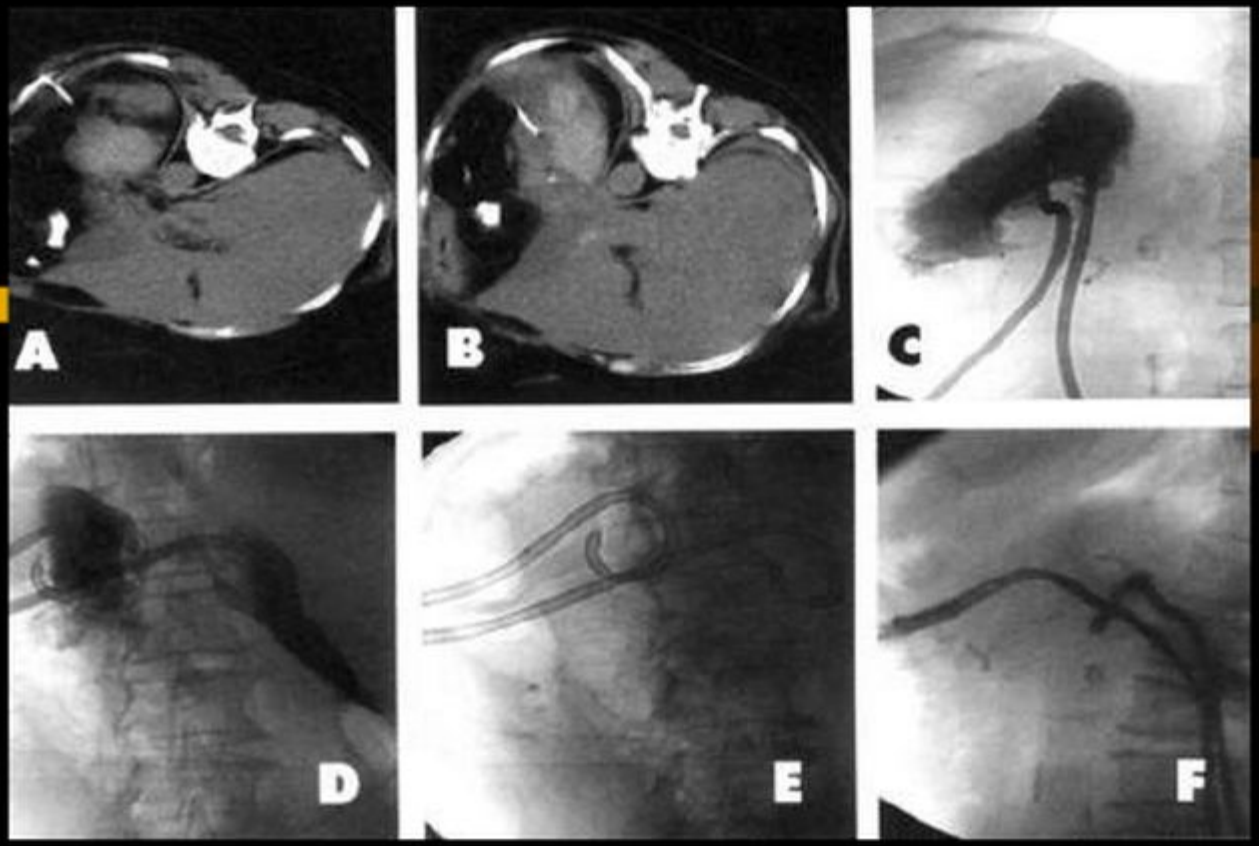
Tasks:

- Preference of extraperitoneal access
- Evacuation of the pus and washing of the abscess cavity
- Drainage of the abscess cavity


Drainage of Pelvic Abscess
Eventual Condition
Eventual Condition
A. A 19-gauge needle is inserted into the abdominal wall.
B. A catheter is placed to allow purulent material to be removed.



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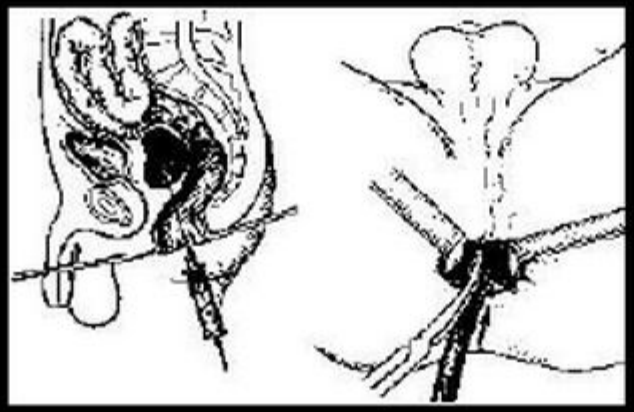
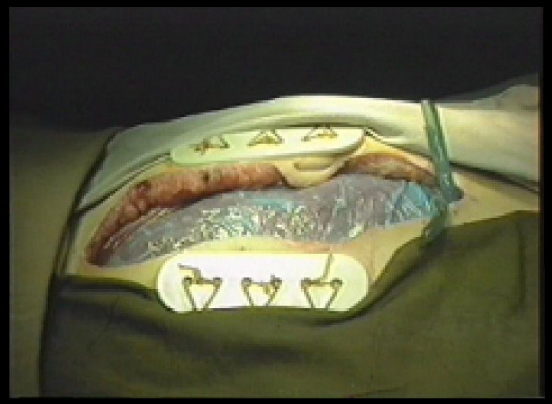
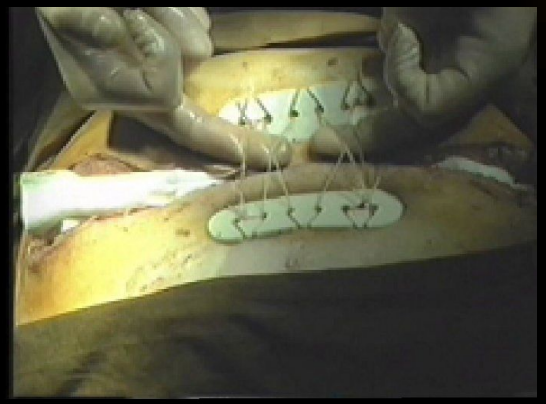
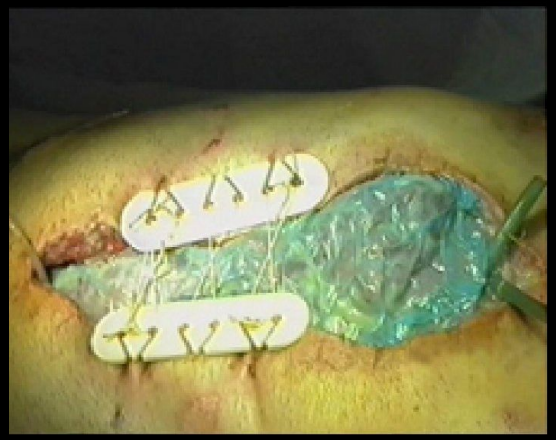
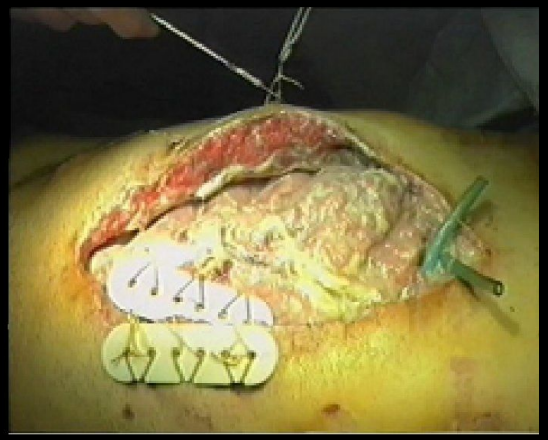


Laparostomy



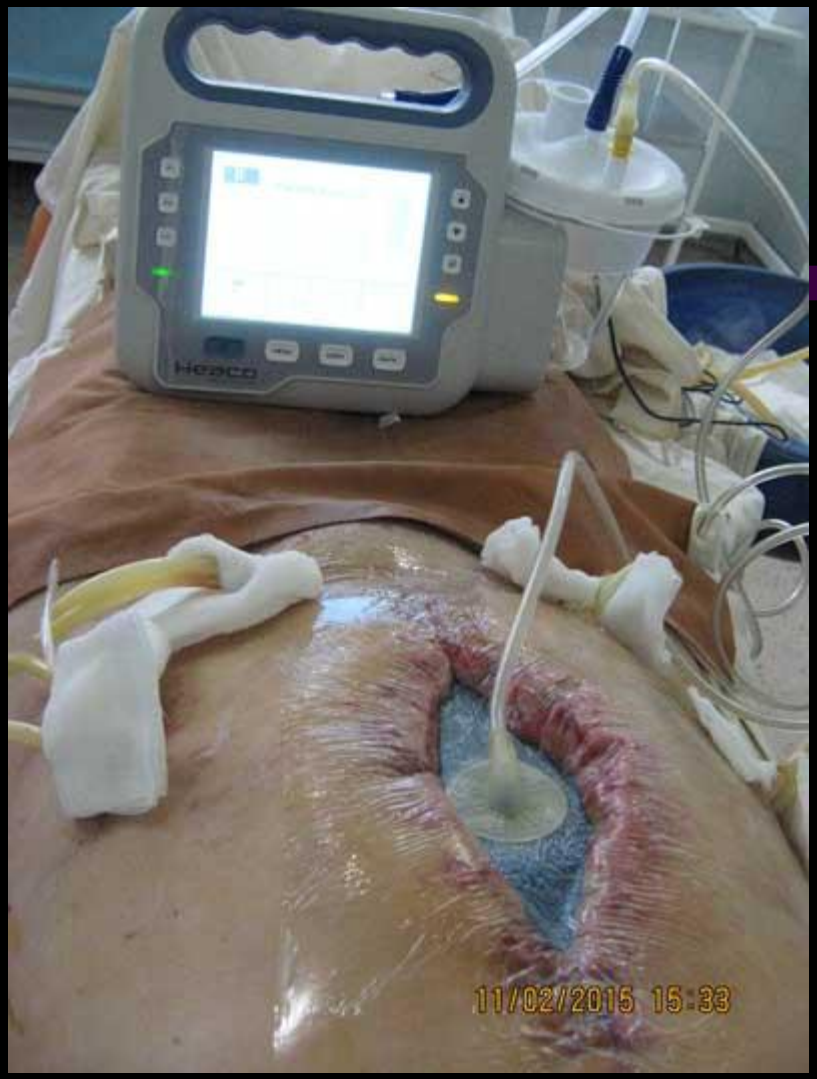






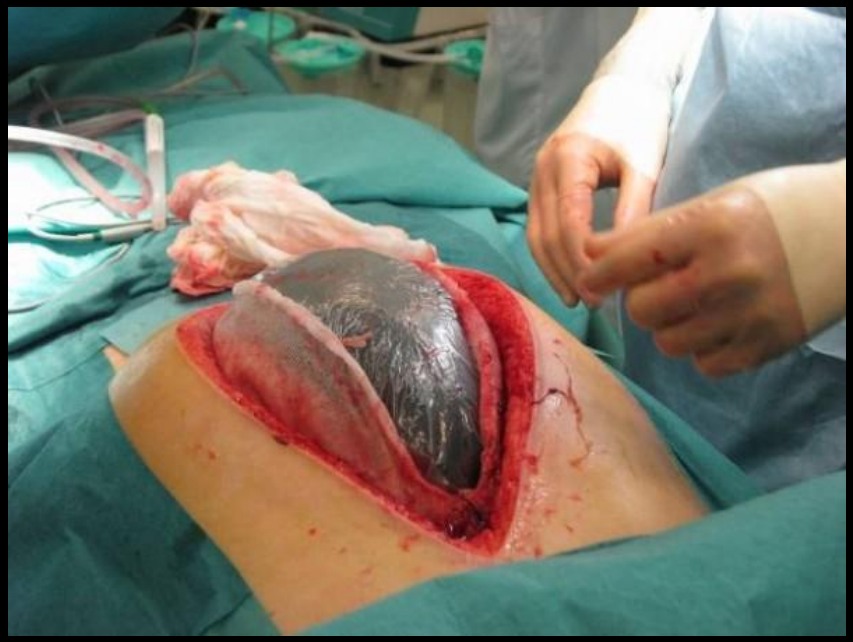
is a surgical treatment method in which the peritoneal cavity is opened anteriorly and deliberately left open, hence often called 'open abdomen‘ for severe cases of peritonitis .

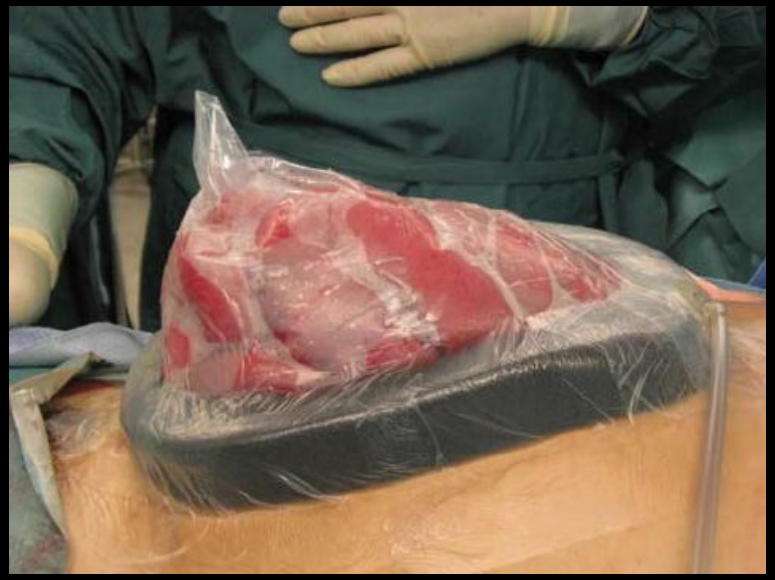
Laparostomy, installation of the Vac-system, gradual rehabilitation of the abdominal cavity with widespread peritonitis.



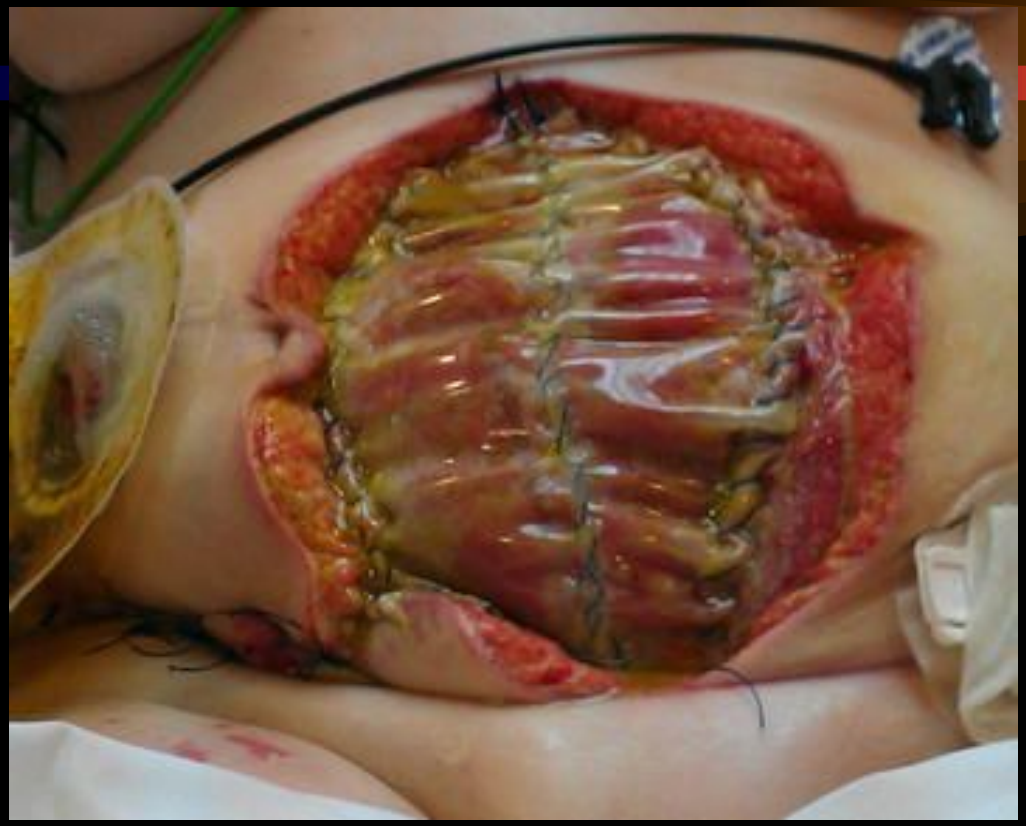
Vacuum -system

Vacuum-dressing with temporary mesh by "Bogota bag"





A ”**Bogota bag**” is a sterile plastic bag used for closure of abdominal wounds.



It is generally a sterilized, 3 litre genitourinary irrigation bag that is sewn to the skin or fascia of the anterior abdominal wall. Its use was first described by Oswaldo Borraez while a resident in Bogota, Colombia.

Serial Abdominal Closure of a Laparostomy

Thank you for your attention