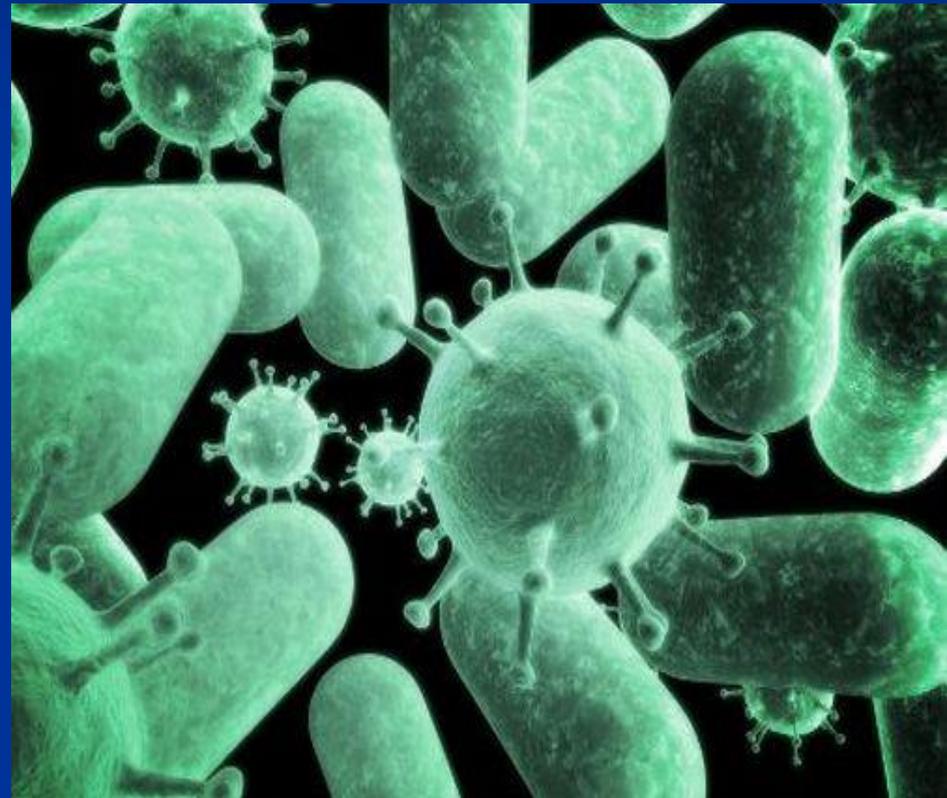


**INFLAMMATORY
DISEASES OF FEMALE
GENITALS**

Inflammatory processes of female genitals

- constitute approximately 65% of all gynecological disorders;
- among patients with genital inflammation 80% of women aged 16 to 25 years, of which 75% of women who gave birth.



Etiology and ways of spreading

- inflammatory diseases of the female genital organs can be caused by the following factors:
 - ✓ infectious;
 - ✓ mechanical;
 - ✓ thermal.



Etiology and ways of spreading

- nonspecific etiology
(inflammation caused by staphylococcus, Escherichia coli, streptococci, Pseudomonas aeruginosa, etc.)

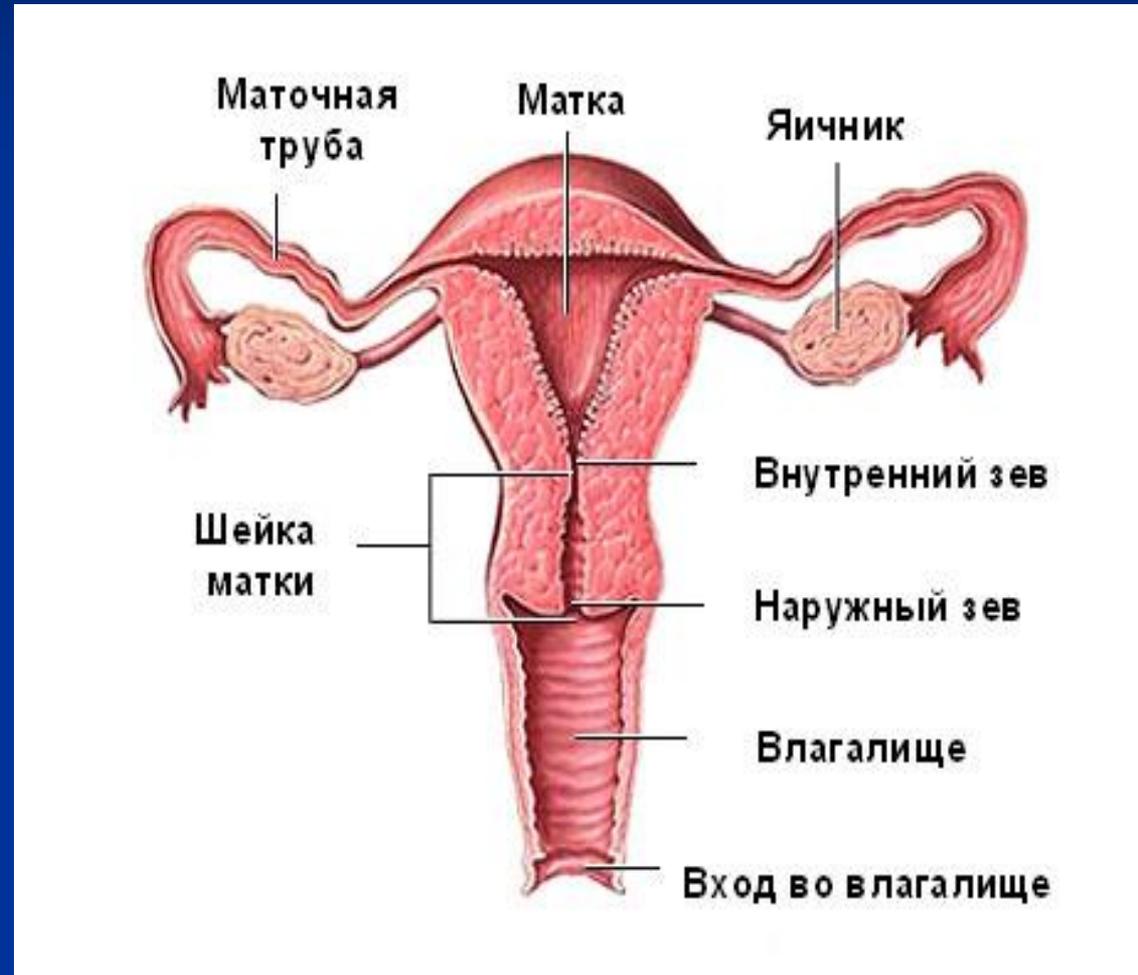
- specific etiology
(inflammation caused by Trichomonas, gonococci, fungi of the genus Candida, mycoplasmas, viruses, Chlamydia, Mycobacterium tuberculosis)

Etiology and ways of spreading

- pathogens inflammatory diseases are transmitted primarily through sexual contact, less household (when using general hygiene items);
- opportunistic pathogens become agents of inflammatory diseases, subject to increase their virulence and immuno-reduction properties of microorganism.

Physiological barriers to the spreading of inflammatory diseases in women

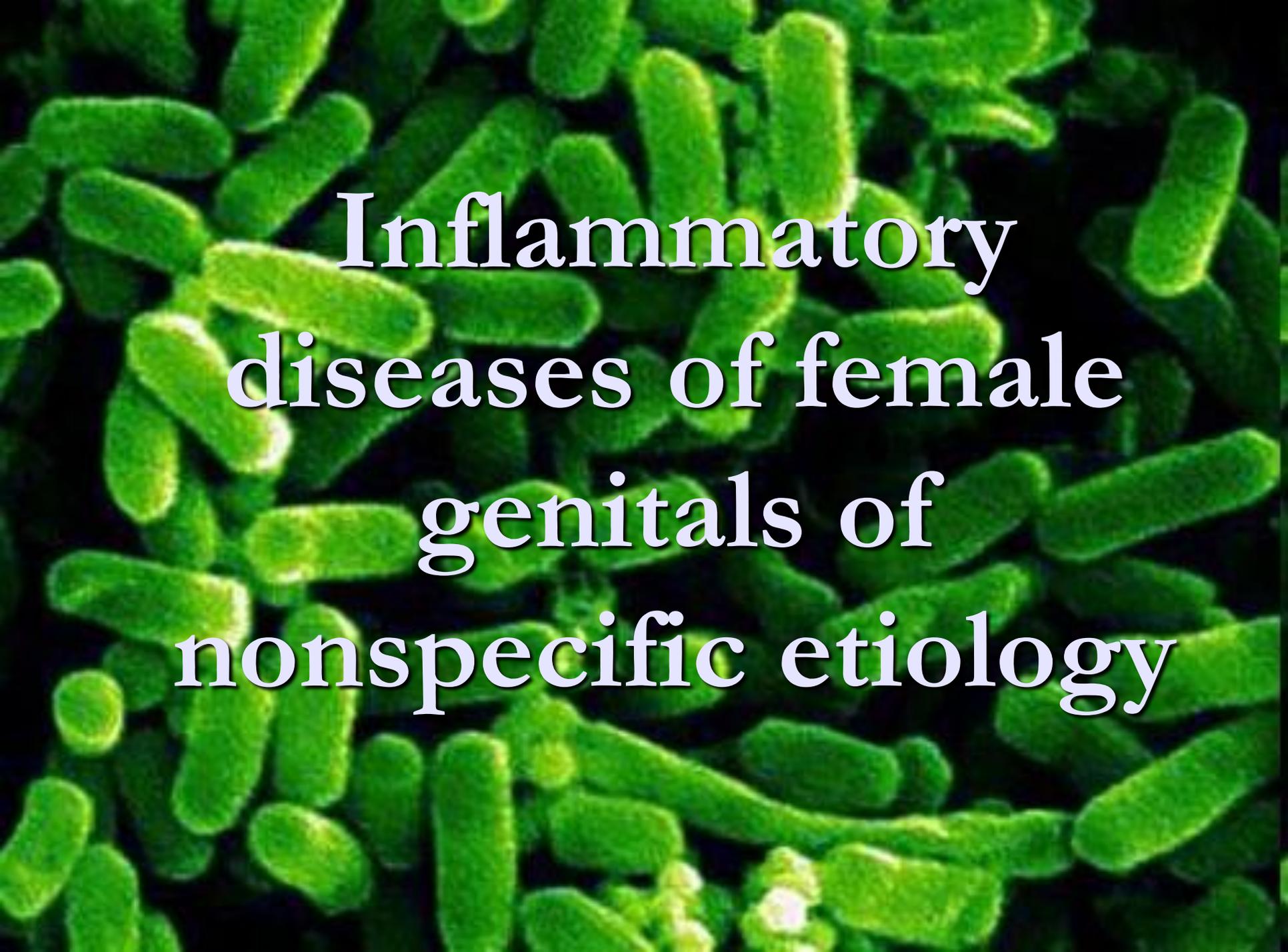
- vulva;
- vagina;
- mucous plug of the cervix;
- severe narrowing of the cervical canal at the site of the internal os and the isthmus;



Physiological barriers to the spread of inflammatory diseases in women

- cyclic delamination of the functional layer of the endometrium during menstruation;
- peristaltic contractions of the fallopian tubes, flicker epithelium, presence of multiple mucosal folds;
- epithelium and connective tissue sheath inside the ovary.



A microscopic view of numerous green, rod-shaped bacteria, likely Lactobacillus, against a dark background. The bacteria are densely packed and oriented in various directions.

Inflammatory
diseases of female
genitals of
nonspecific etiology

Classification of inflammatory diseases of the female genital organs

■ The clinical course:

- 1) Acute processes;
- 2) Subacute processes;
- 3) Chronic processes.

■ Severity:

- 1) Mild;
- 2) Medium ;
- 3) Severe.

Classification of inflammatory diseases of the female genital organs

1. Inflammation of the lower genital organs:

- 1) vulvitis (inflammation of the vulva);
- 2) bartholinitis (inflammation of the large vestibule glands);
- 3) vaginitis (inflammation of the vagina);
- 4) inflammation of the cervix:
 - a) cervicitis (inflammation of the mucous membrane of the cervix covered by stratified squamous epithelium);
 - b) endocervicitis (inflammation of the mucous membrane, which passes into the cervical canal and covered with columnar epithelium).

Classification of inflammatory diseases of the female genital organs

2. Inflammation of the upper genital organs (pelvic)

1) The body of the uterus:

- a) endometritis (inflammation of the mucous membrane);
- b) metroendometritis (inflammation of the mucous membranes and muscle);

2) The appendages:

- a) salpingitis (inflammation of the fallopian tubes);
- b) oophoritis (inflammation of the ovaries);
- c) salpingoophoritis (inflammation of the fallopian tubes and ovaries);
- d) inflammatory tubo-ovarian tumor (bacteriophytoma of the fallopian tubes and ovaries);

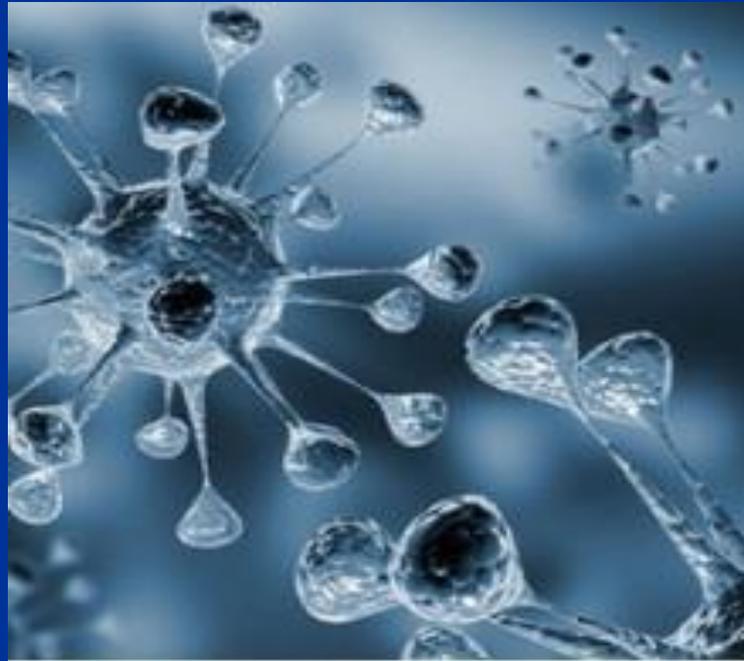
Classification of inflammatory diseases of the female genital organs

- d) hydrosalpinx (accumulation of serous fluid in the lumen of the tube);
- e) pyosalpinx (accumulation of pus in the lumen of the fallopian tube);
- g) pyovarum (presence of abscess in the ovary);

3) parametritis (inflammation of the pelvic tissue surrounding the uterus (anterior, posterior and lateral));

4) pelviperitonitis (inflammation of the pelvic peritoneum).

Inflammatory diseases of lower genitals



Vulvitis

- inflammation of the vulva;
- women of reproductive age often is secondary (at colpitis, cervicitis, endometritis, salpingoophoritis);
- primary vulvitis diagnosed with diabetes, skin diseases, thermal, mechanical, chemical skin lesions of the external genitalia, ovarian hypofunction;
- distinguish between acute and chronic vulvitis.



Acute vulvitis

- patients complain of burning and itching of the vulva, especially after urination, purulent discharges, pain during movement;
- acute process is accompanied by tissue edema, diffuse hyperemia of the inguinal folds area, inner thighs, sometimes increasing the inguinal lymph nodes;
- often combined with genital warts located in the pudental cleft and anus.

Chronic vulvitis

- as manifested by itching, burning and erythema, but these symptoms are smooth character.



Diagnostics

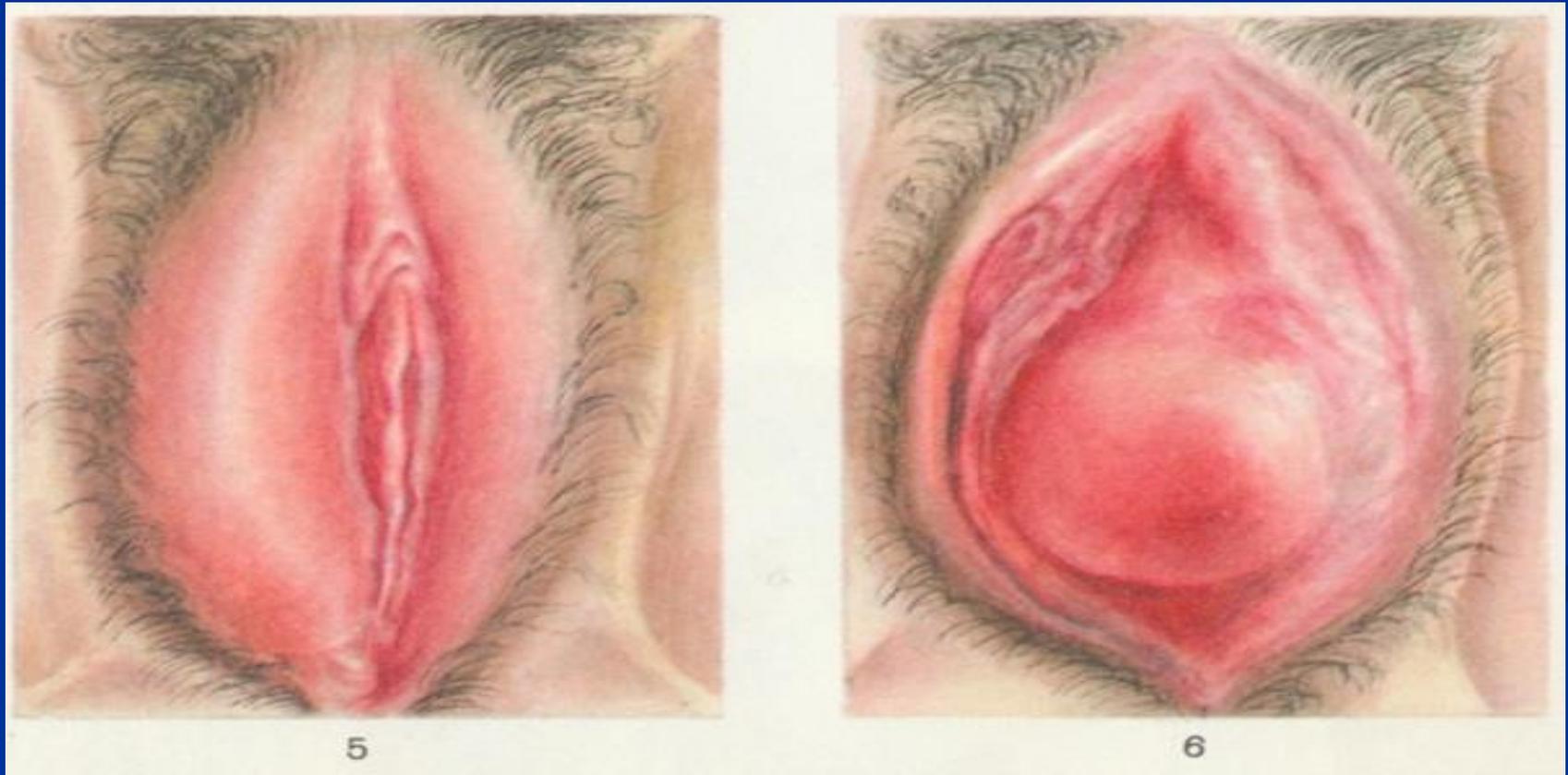
- based on the data history (somatic diseases, failure to observe sexual health, traumatic injury);
- evaluation of patient complaints;
- gynecological examination results;
- microscopy data, and bacteriological studies of vulva secret.

Treatment

- complex, involves the use of local and bracing means;
- therapy shows comorbidities (diabetes, purulent lesions, helminthiasis, cervicitis);
- must comply with bed rest, refrain from sexual of external sexual organs, potassium permanganate warm solution (1:10,000); warm chamomile extract, 2-3% solution of boric acid, furacilinum solution (1:5000);
- for severe itching apply 5% anesthesin ointment.

Bartholinitis

- inflammation of the large vestibule gland, caused by *Staphylococcus aureus*, *Escherichia coli*, *Streptococcus*, *Proteus*, at least - *Neisseria gonorrhoeae*, *Trichomonas vaginalis* and other microorganisms



Bartholinitis

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graph TD; A[Bartholinitis] --- B[Canaliculitis]; A --- C[Bartholinitis]; A --- D[Bartholin gland abscess];
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Canaliculitis

(due to lesions by m/o of excretive duct of the gland)

Bartholinitis

(pseudoabscess due to lesions of the gland)

Bartholin gland abscess

(the penetration of m/o in parenchyma of the gland and the surrounding tissue)

Canaliculitis

- the general condition of women slightly disturbed;
- noted red swelling around the external excretory opening of the gland 's duct;
- when you press on a duct, a drop of pus is exuded, which is taken for microscopy studies



Pseudoabscess of Bartholin gland (bartholinitis)

- patients complain of general weakness, discomfort in the vulva, low-grade fever;
- when viewed - edema and hyperemia between the middle and lower third of the labia majora;



Pseudoabscess of Bartholin gland (bartholinitis)

- palpation - a sharp pain, a local increase in its body, soft tissue swelling (pseudoabscess causes edema the outer or inner surface of the labia majora, extends to the labia minora and closes the entrance to the vagina;
- defined red spot on the inner surface of the labia majora around the excretory ducts.



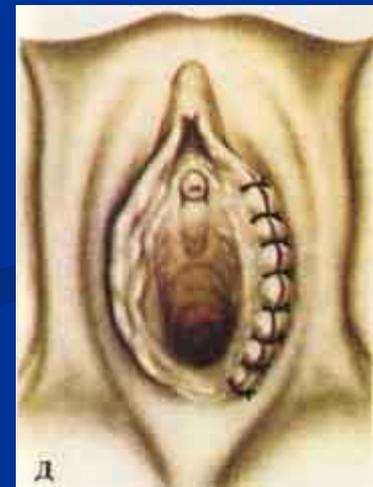
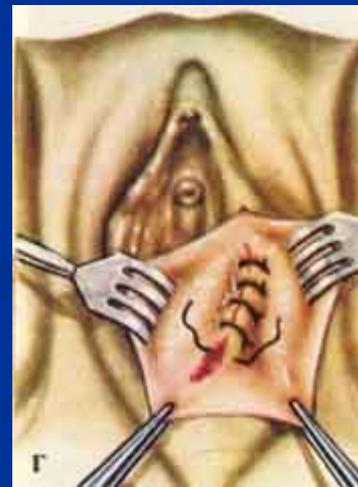
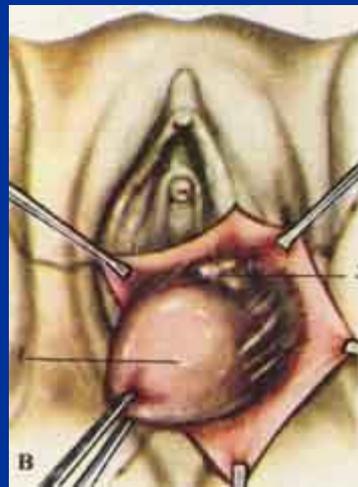
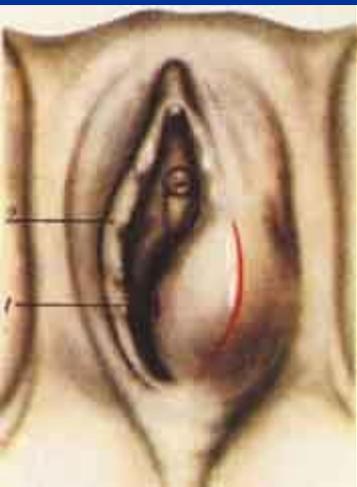
Bartholin gland abscess

- sharp deterioration in general condition: increasing body t, chills, severe headache, sharp pain in the genital area, even at rest;
- in the survey reveal sharply painful tumor formation (with significant accumulation of pus floating is notes);
- may accidentally opening the abscess, with the general condition of the patient improves, t body is reduced, but soon a recurrence.



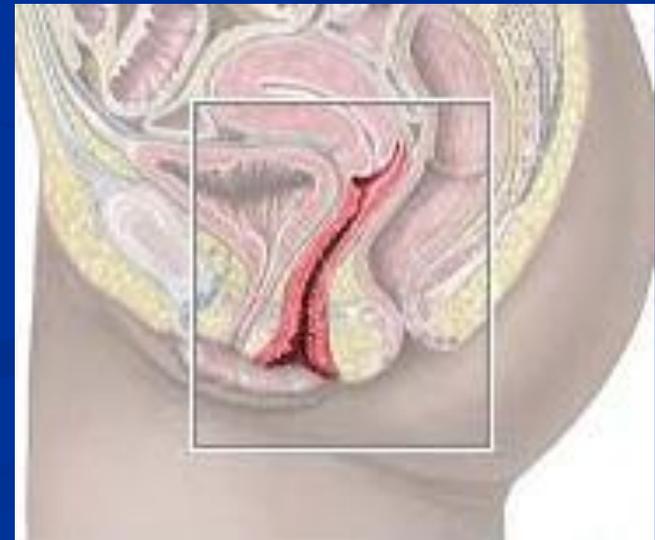
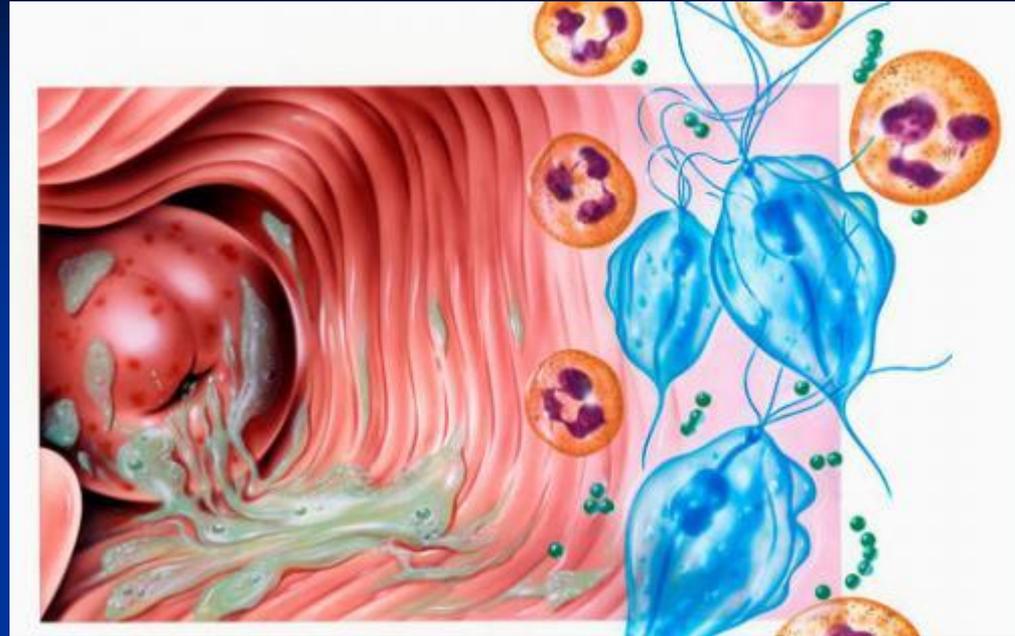
Treatment

- When **canaliculitis**- used antibiotics (including data of antibiogram), warm sitting baths with potassium permanganate solution, an ice pack, ointment application with Ichthyol, Vishnevsky ointment, UFO, UHF;
- the formation of an **abscess** and **pseudoabscess** - operative treatment: open the duct of the gland in the most pronounced fluctuations, evert the mucosa and sutured it to the mucous membrane of the vulva (marsupialization). In case of relapse of bartholinitis perform enucleation of the gland with duct.



Colpitis

- inflammation of the mucous membrane of the vagina;
- inflammatory response can be both focal and diffuse, often extending to the vaginal part of the cervix and vulva;
- The main symptoms are sero-pus-like leucorrhoea;
- Patients complain of burning, itching of the vagina and vulva, the inability to have intercourse (dyspareunia), increased pain and a burning sensation when urinating.



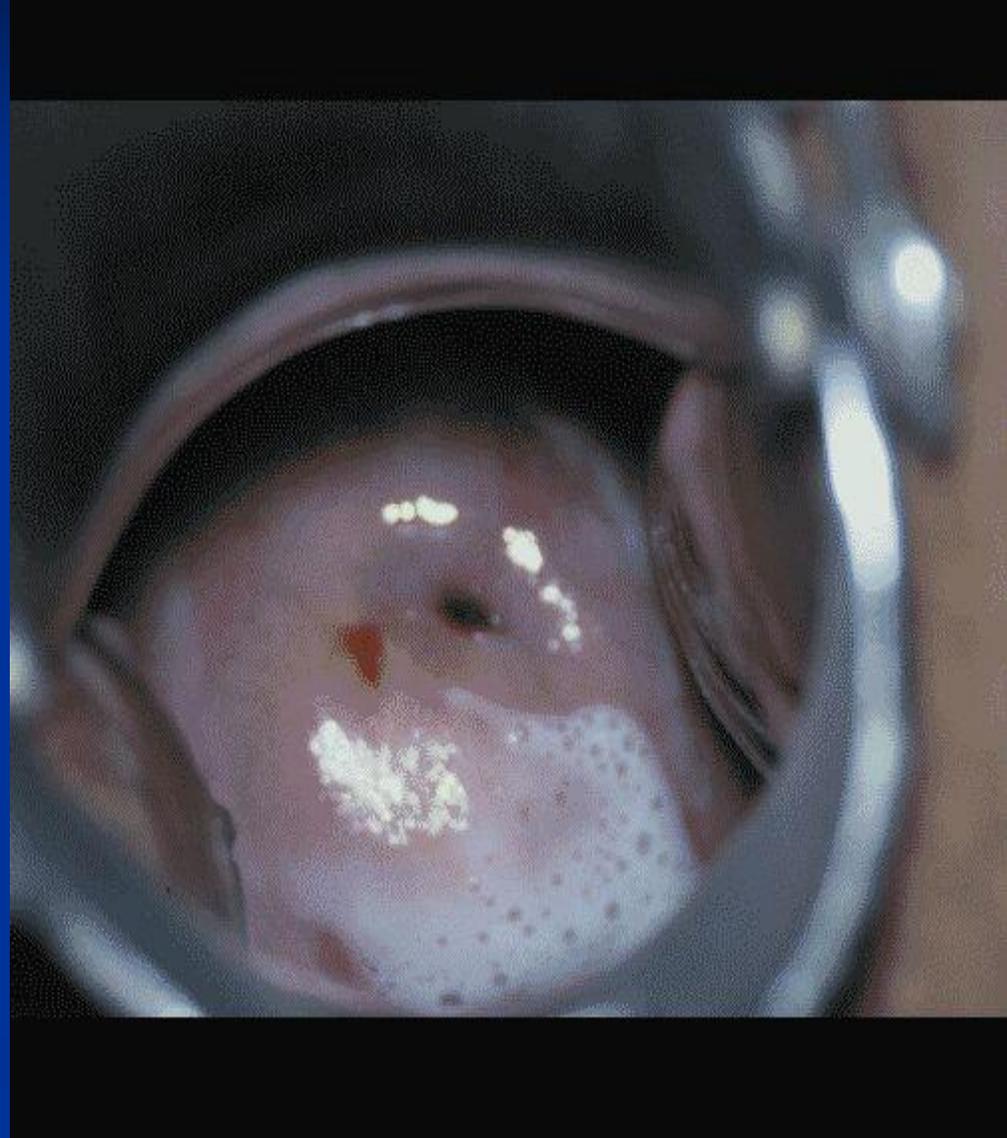
Colpitis

- **Diagnosis** is based on data inspection with the speculum in the acute stage of the disease observed swelling, redness, bleeding, vaginal mucosa, covered with purulent or serous bloom, in the chronic stage – congestion expressed little, the quantity of whites are slightly;
- type of agent installed using microscopy and bacteriological study contents of the vagina , cervical canal, urethra, excretory ducts of Bartholin glands;
- **treatment** - is complex: general and local therapy is to appoint etiotropic anti-inflammatory drugs, treatment of concomitant diseases. Required remediation of sexual partner.



Bacterial vaginosis (vaginal dysbiosis)

- occurs in 35% of women of reproductive age with gynecological pathology;
- regarded as a polymicrobial clinical syndrome manifested significant decrease in the amount or absence of lactic acid bacteria against a sharp increase in the number of opportunistic m / o (mainly gardnerellas) and reducing the acidity of the vaginal environment.



Bacterial vaginosis

- main complaint of patients is the presence of white or gray exudates, with an unpleasant fishy odor, creamy consistency; possible itching, burning, discomfort during sexual intercourse;

- **Diagnosis** is based on three of the above four symptoms:

- 1) homogeneous creamy discharge (sometimes frothy);

- 2) increasing the pH of the vaginal discharge more than 4.5;

- 3) a positive amine test;

- 4) the presence of the "key" cells for direct smear microscopy.

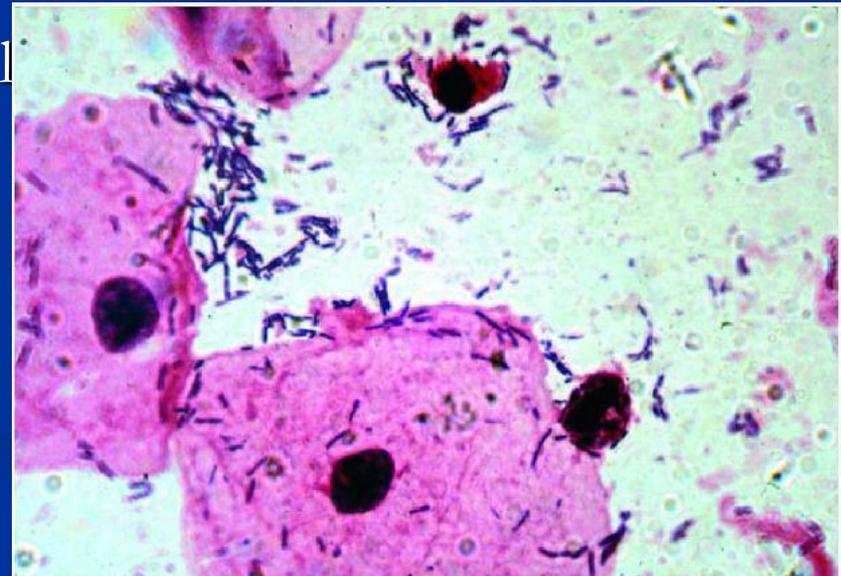
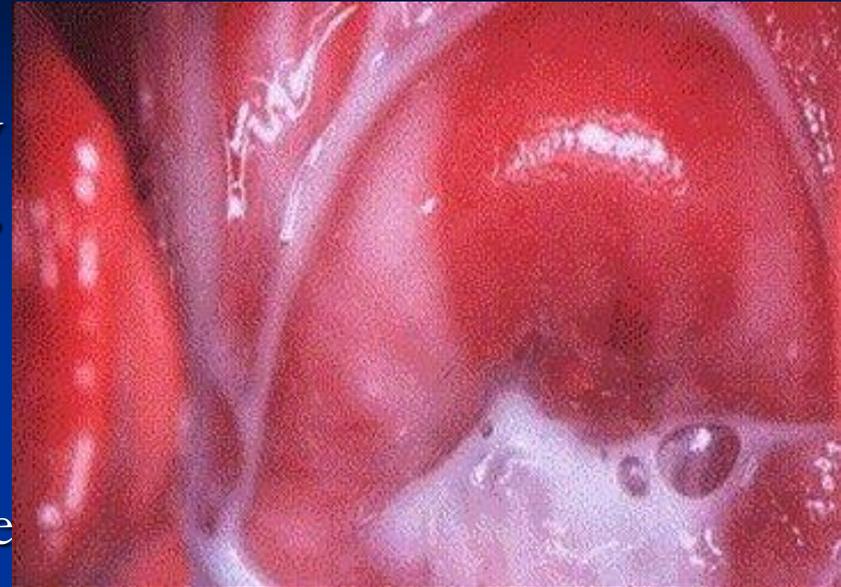


Рис. 6-3. «Ключевые» клетки (микроскопия мазка, окрашенного по Романовскому-Гимазу)

Treatment of bacterial vaginosis

- Metronidazole (drug of choice) at 400-500 mg orally twice a day for 5-7 days;
- Clindamycin (Dalacin) 1 vaginal suppository for 7-10 days;
- preparations containing bifidobacterium and lactobacillus, to restore normal vaginal biocenosis;
- during pregnancy (II-III trimester) and lactation prescribe drugs only with local effects in low doses.



Endocervicitis

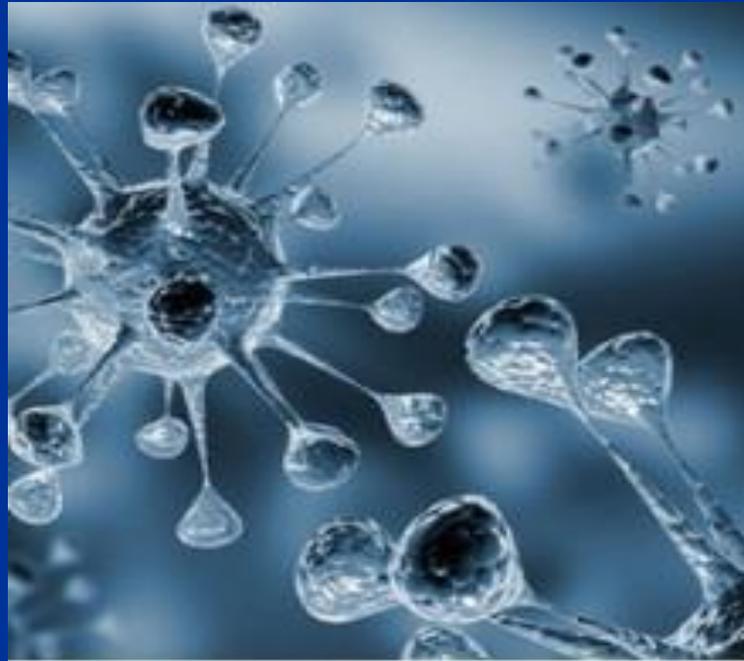
- inflammation of the mucosa of the cervical canal;
- lead to its occurrence as a result of births trauma, abortions, intrauterine interventions, as well as diseases of other parts of the reproductive system (colpitis, cervical ectopia, salpingoophoritis, etc.)
- main complaints of patients are mucopurulent whites, nagging pain in the lower abdomen and lumbus;
- when viewed in the speculum: redness around the external os and mucopurulent discharges from the cervical canal



Endocervicitis

- **Diagnosis** is based on data from the clinical presentation, speculum examination, colposcopy, bacteriological examination of secretions;
- cytology defined cylindrical cells and stratified squamous epithelium without signs of atypia;
- **Treatment**: In acute stage used antibiotic therapy based on the pathogen and the local procedures are contraindicated (risk of infection) - they performed only after remission process: irrigation vaginal baths with Chlorhexidine, Recutanum, Dimexidum;
- when endocervicitis is developing against the background of cervical rupture shows plastic surgery of the cervix (by Emmett or Shturmdorf after anti-inflammatory treatment.

Inflammatory diseases of the upper genitals



Risk factors for inflammatory diseases of the pelvic organs:

- early sexual activity;
- multiple sexual partners;
- use of intrauterine contraceptive devices (IUDs);
- the presence of inflammatory diseases of the pelvic organs in history (the recurrence rate - 25%);
- A history of the patient or her partner of inflammatory diseases of the lower genital diseases or sexually transmitted.

Aggravating factors in the development or exacerbation of inflammatory diseases of the pelvic organs

- menstruation;
- sexual intercourse;
- medical abortion;
- diagnostic curettage;
- IUD insertion;
- hysterosalpingography;
- in vitro fertilization procedure, etc.

Algorithm for the examination of patients with inflammatory diseases of the pelvic organs

- **complaint**: acute pain in the pelvic area (one - or two-sided), increasing t up to 38 C and above, metrorrhagia, mucopurulent discharge from the vagina;
- **history**: the emergence of symptoms after menstruation, unprotected sexual intercourse, abortion, hysterosalpingography, use the IUD, early sexual activity;
- **speculum examination and bimanual examination**: mucopurulent discharge from the cervical canal, cervical erosion, and a slight increase in uterine tenderness, enlargement and tenderness of the appendages (one - or two-sided), limiting their mobility , pain during displacement of the uterus;

Algorithm for the examination of patients with inflammatory diseases of the pelvic organs

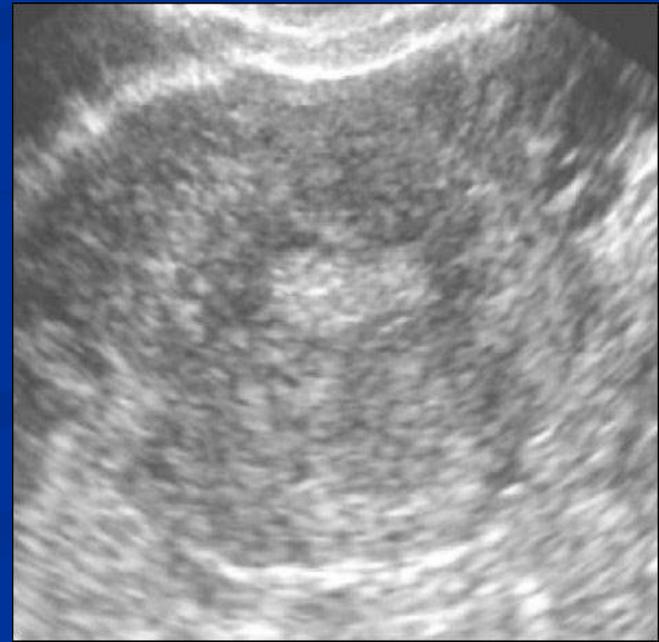
- clinical and laboratory studies: complete blood count (leukocytosis, left shift formula, increased erythrocyte sedimentation rate), urinalysis, amine test, determination of vaginal pH, direct microscopic study of secretions from the cervical canal, bacteriological examination of smears from the cervical canal to determine the microflora and its sensitivity to antibiotics, examination of smears from the urethra, excretory ducts of the paraurethral glands definition pathogens in scrapes with urethral mucosa and cervical canal enzyme immunoassay, immunofluorescence method or polymerase chain reaction.

Clinical forms of purulent inflammatory diseases of the internal genital organs

- uncomplicated (endometritis, acute purulent salpingitis, pelvioperitonit);
- complicated (all encysted inflammatory tumors of the uterus, purulent ovarian formations).

Endometritis

- inflammation of the mucous membrane of the uterus, usually occurring after intrauterine interventions (diagnostic curettage, abortion complications, childbirth, IUD);
- inflammation can spread to the entire membrane of the uterus or have a focal character;
- If severe endometritis a muscular layer involved in the process (metroendometritis).



The clinical picture and diagnosis

- Disease begins acutely: the body temperature increases, there is a fever, abdominal pain and in the groin area, mucopurulent liquid discharge with an unpleasant odor;
- a pelvic examination revealed serous-purulent, sometimes sanguinous (due to epithelial desquamation in some areas of the endometrium), the cervical canal is often open, uterus enlarged somewhat, soft consistency, sensitive to palpation;
- acute stage of the disease lasts 8-10 days, usually ends in recovery, rarely observed generalization of the process with the development of complications (parameteritis, peritonitis, pelvic abscess, pelvic vein thrombophlebitis, septicemia) or inflammation becomes subacute or chronic.

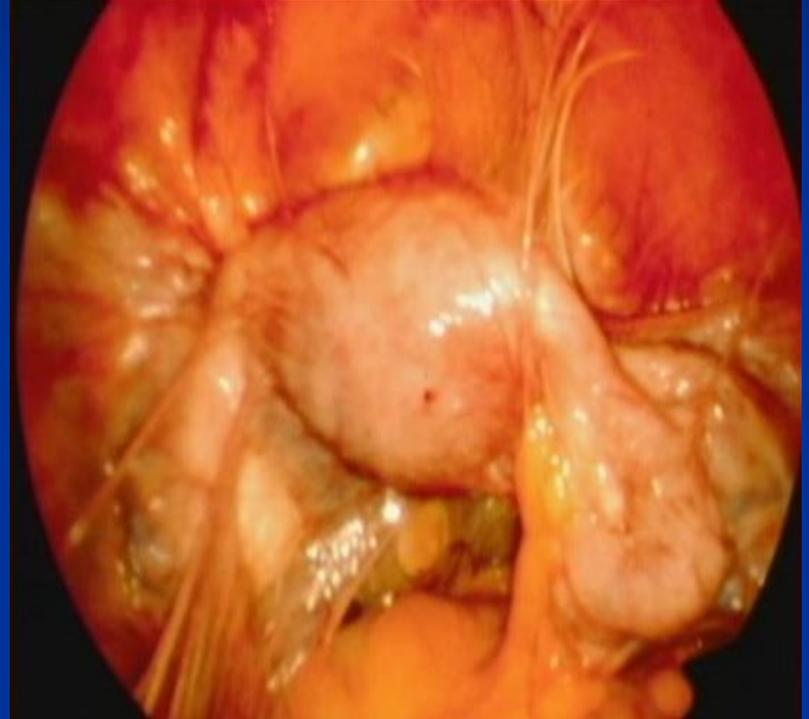
Salpingoophoritis

- inflammation of the adnexa, the most common inflammatory disease of the pelvic organs;
- infection spreads usually by ascending from the vagina and uterus, as well as from the neighboring organs (appendix, sigmoid colon and rectum) or by hematogenous.



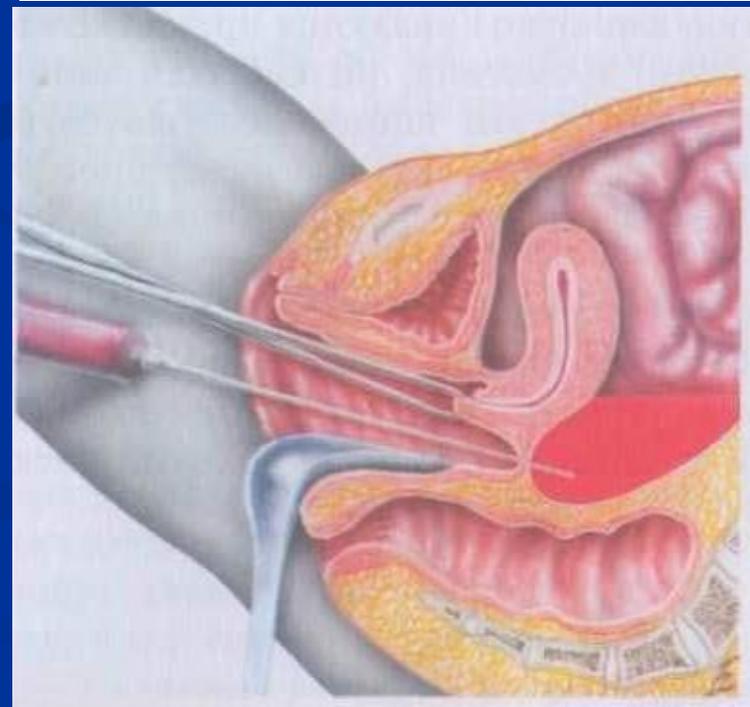
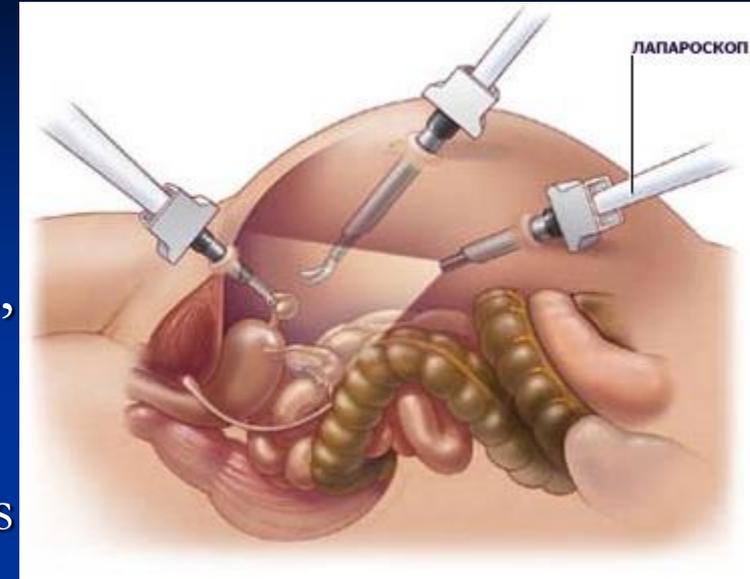
The clinical picture

- pain in the abdomen;
- the body t increase to 38-40 C, chills;
- nausea and sometimes vomiting;
- purulent discharge from the genital tract, and sometimes - dysuric phenomena;
- with bimanual study: thickening, swelling, pain in the appendages, purulent or purulent-sanious discharges.



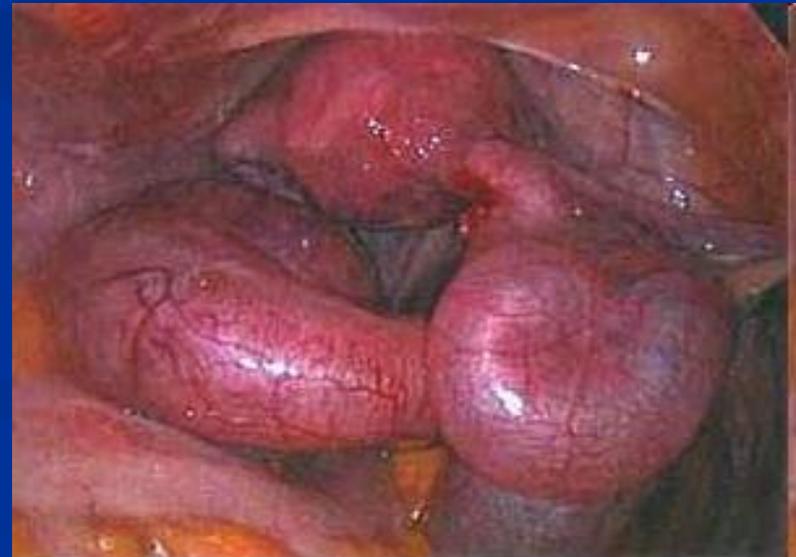
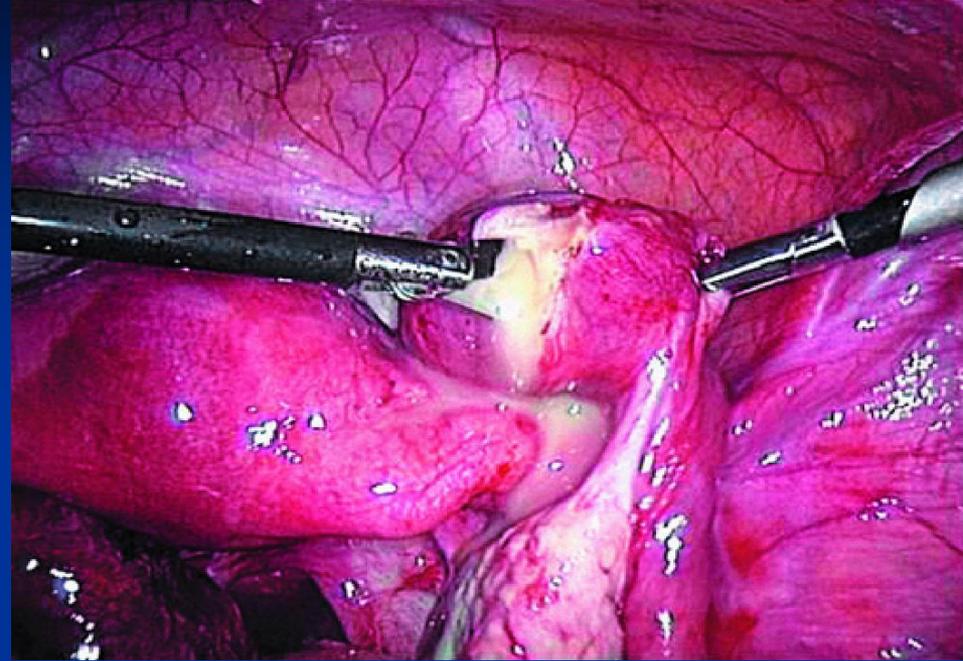
Laboratory diagnosis

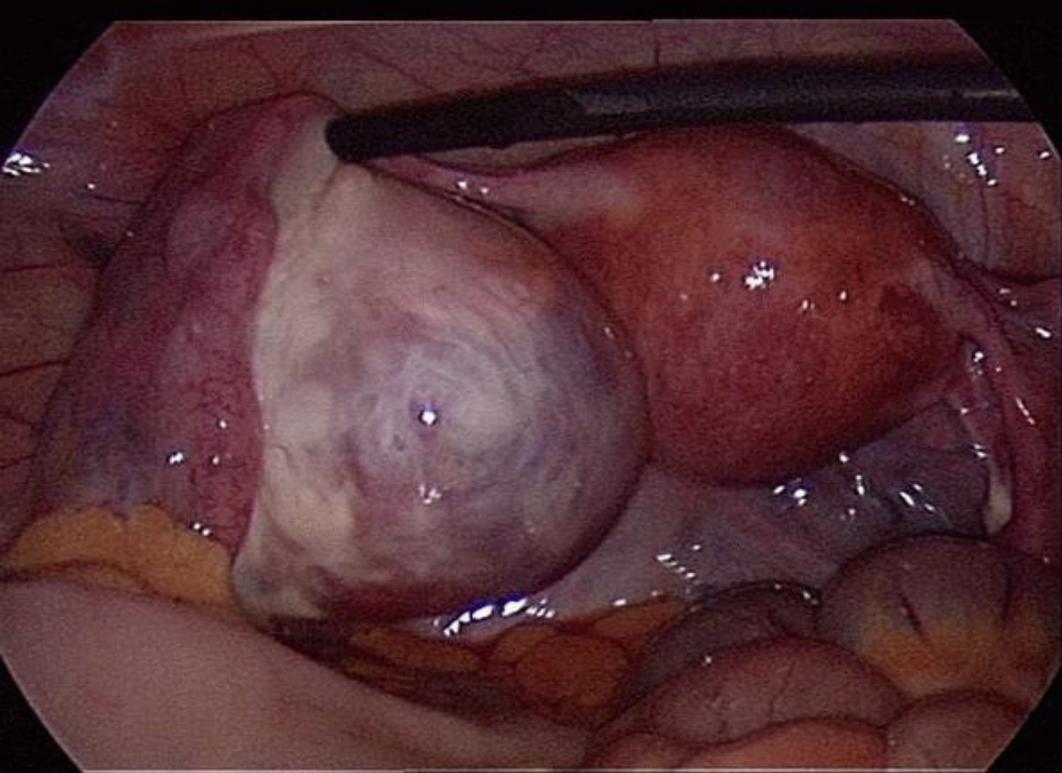
- in peripheral blood - leukocytosis, left shift formula, increased erythrocyte sedimentation rate, C-reactive protein, dysproteinemia;
- in the clinical analysis of urine - proteinuria, leukocyturia, bacteriuria (involves injury to the urethra and bladder);
- when bacterioscopic examination of smears from the vagina and cervical canal detects elevated levels of white blood cells, coccal microflora, yeast-like fungi, the most accurate results are obtained by microbiological examination of the fallopian tubes and the contents of the abdominal cavity, obtained by laparoscopy or puncture of the abdominal cavity.



Complications of salpingoophoritis

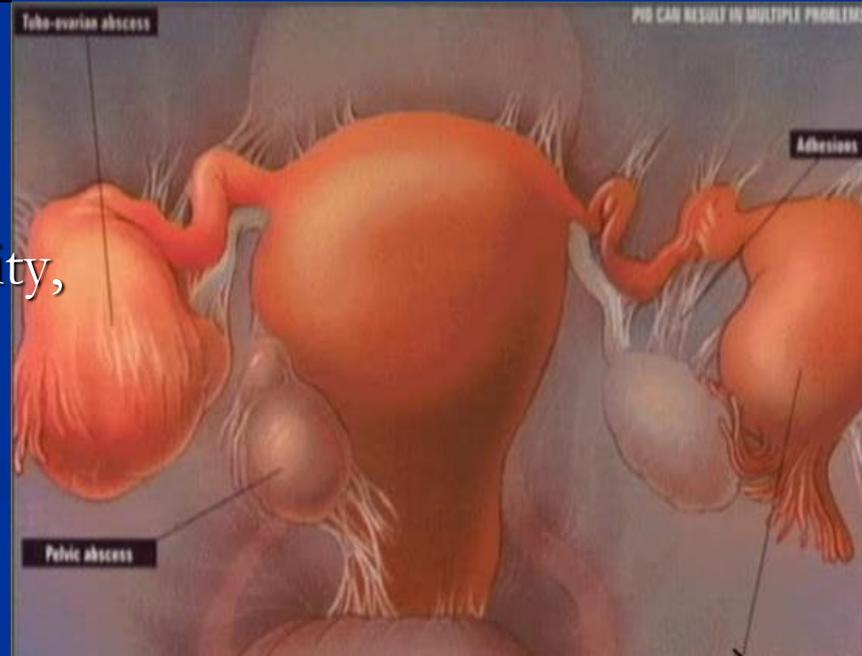
- **pyosalpinx** (abscess of the fallopian tube);
- **hydrosalpinx** (filled with serous fluid, enhanced with wall thinning fallopian tube, often completely impassable);





- **Tubo-ovarian abscesses;**
- **Breaks abscesses with sepsis and shock;**

- Adhesions (peritubal and periovarial adhesions);
- Partial and full-impassable obstruction of the fallopian tubes (infertility, risk of ectopic pregnancy);
- Chronic pelvic pain;
- Dyspareunia.



Parametritis

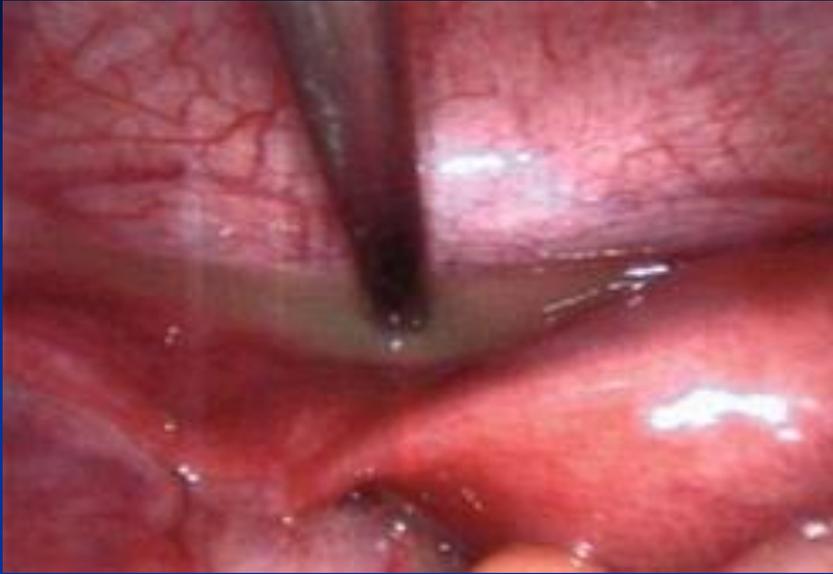
- inflammation parauterine tissue;
- depending on the topography of the pelvic tissue isolated anterior, lateral and posterior of the parametritis;
- there are three stages in the parametritis course: infiltration, exudation, hardening of exudate, resorption of exudate occurs with successful treatment, infiltration resolves, in a case a purulent exudate there is festering parametritis, which may be accompanied by a breakthrough of pus, often in the rectum or bladder.



The clinical picture and diagnosis

- constant abdominal pain radiating to the pelvis and lower back, increasing the body t to 38-39, increased heart rate, headache, thirst, dry mouth;
- when vaginal examination - pronounced uterine tenderness, 3-4 day of illness determine displacement of the uterus in a healthy way or up;
- Position of the patient is forced with extention of the process - on the affected side leg bent at the hip;
- if suppuration of parauterine tissues general condition deteriorates, t of the body gets hectic nature, there is a fever, leukocytosis greatly enhanced, increasing neutrophil shift to the left, sharply increased erythrocyte sedimentation rate;
- Ulcer breakthrough in the bladder or rectum ,is diagnosed on the basis of urine and feces (detection of pus), cystoscopy, rectoscopy.

Pelvioperitonitis



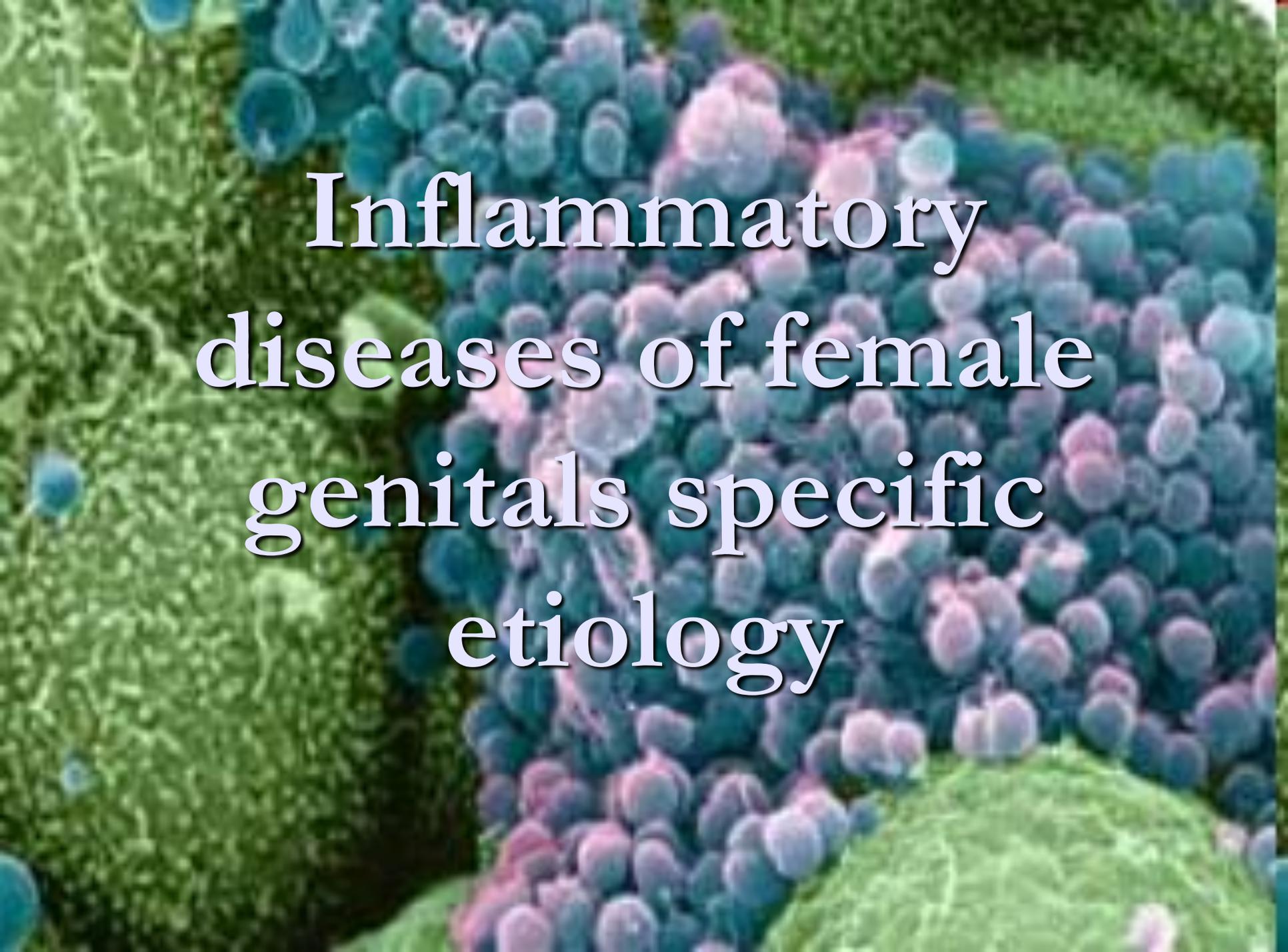
- inflammation of the pelvic peritoneum;
- is a secondary inflammatory process that develops as a complication of inflammation of the uterus and appendages, pyosalpinx and pyovar;
- pathways: canalicular, lymphogenous, hematogenous;
- the nature of fluid define: serous-fibrinous and purulent pelvioperitonitis.

The clinical picture and diagnosis

- Disease begins acutely with increasing body t C to 39, chills, quickens the pulse, there are intense abdominal pain, flatulence, nausea and sometimes vomiting;
- objective: the tongue is coated with white bloom, belly swollen in the lower divisions ,s. Shchotkin – Blumberg is positive, peristalsis is weak, but the anterior abdominal wall is involved in the act of breathing;
- With bimanual study, which is difficult because of the pain and tension of the anterior abdominal wall rigidity and soreness of the posterior vaginal fornix is determine, the definition infiltrate directly behind the uterus, which sticks out the posterior vaginal fornix;
- during puncture of the abdominal cavity receive the inflammatory exudate, and then perform bacteriological analysis of the resulting material.

General principles of treatment of inflammatory diseases of the pelvic organs

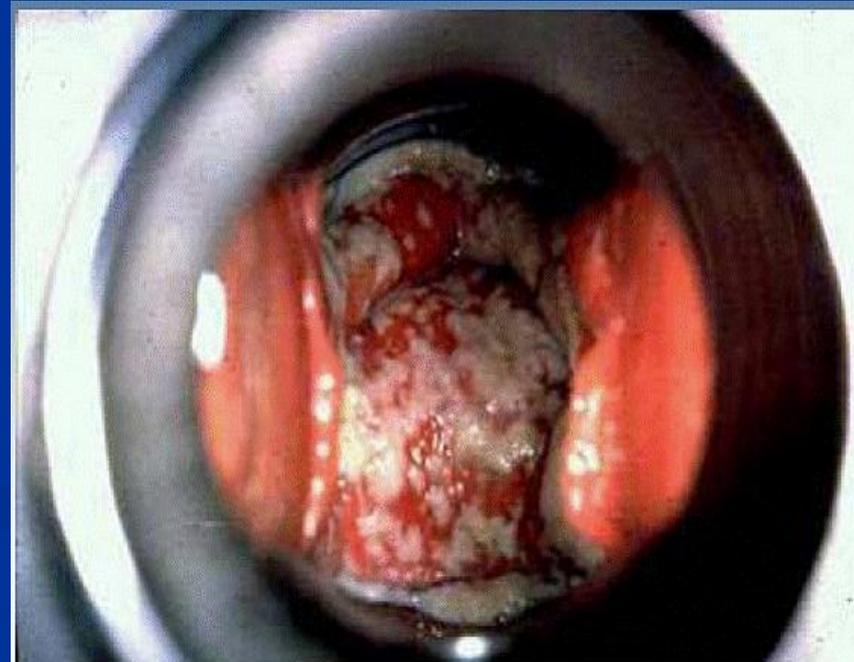
- antibiotic therapy (performed with high doses of drugs, in /v or in/ m for 3-5-7 days with subsequent transition to oral forms);
- desensitizing therapy;
- infusion therapy;
- antioxidant therapy;
- symptomatic therapy;
- antifungal therapy;
- when pyosalpinx, pyovar, tubo-ovarian tumors, posterior parametritis - puncture purulent formations with the evacuation of their contents, washing abscess cavity and the introduction of antiseptics antimicrobials;
- the ineffectiveness of conservative therapy for 72 hours - in the amount of surgery removal of the inflammatory focus and drainage of the abdominal cavity.

A microscopic image showing a dense population of inflammatory cells, likely leukocytes, infiltrating the tissue. The cells are stained in shades of blue, purple, and pink, contrasting with the greenish-yellow background of the tissue. The text is overlaid on the image in a white, serif font with a drop shadow.

Inflammatory
diseases of female
genitals specific
etiology

Candidiasis

- disease caused by a yeast-like fungi, especially the genus *Candida*, often sexually transmitted;
- The causes of the development of candidiasis are damage of mucous membranes, impaired carbohydrate and protein metabolism, hypo- and avitaminosis, irrational antibiotic use.

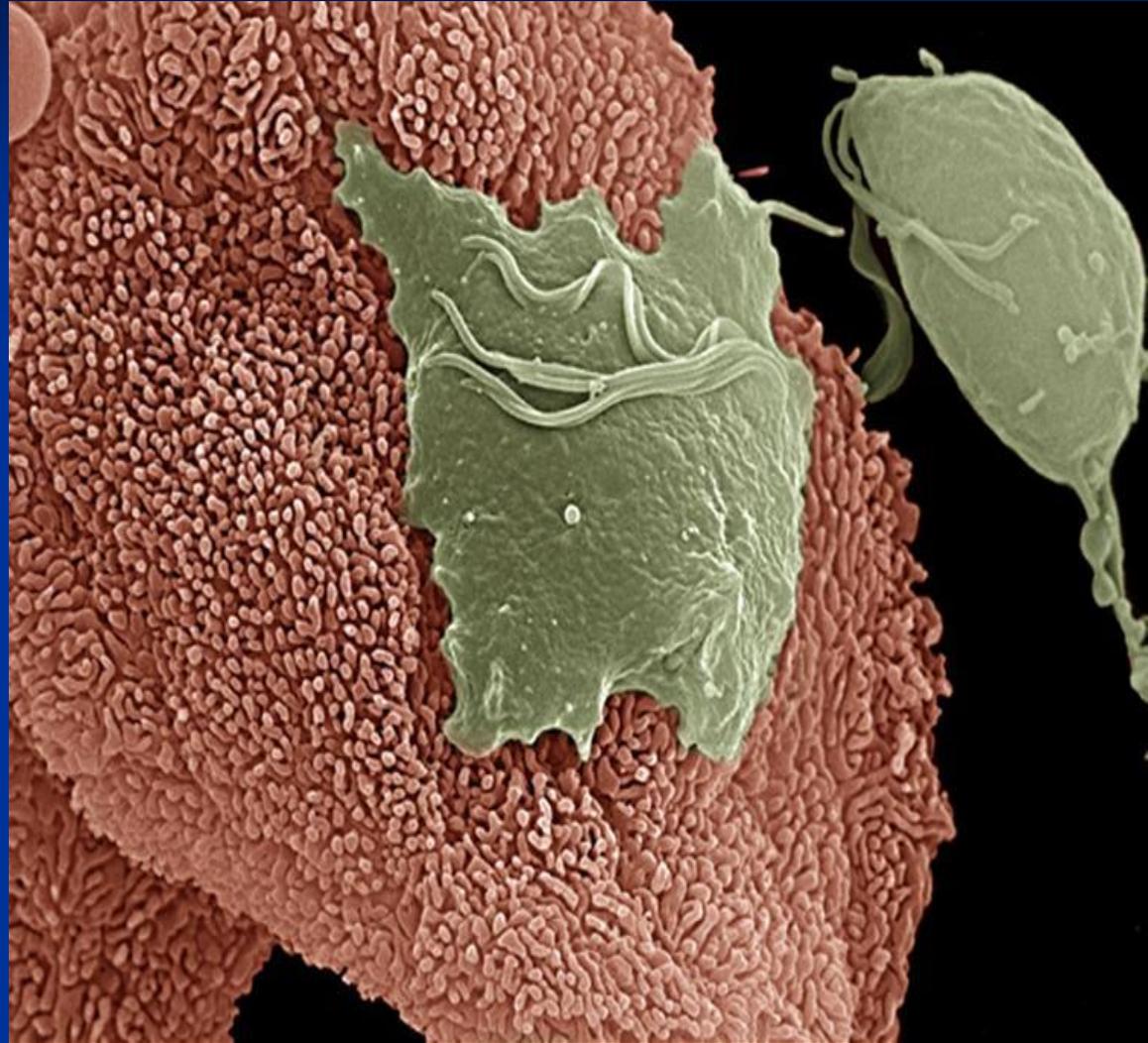


Candidiasis

- **Complaints** of itching, burning sensation in the vagina, thick cheesy discharge from the genital tract, in the acute phase of the skin of the external genitalia appear vesicles are then formed erosion, covered with a crust;
- **Diagnosis** is based on clinical symptoms , the results of microscopy and bacteriological research; vaginal smear microscopy can detect spores and fungi pseudomycelium;
- **Treatment**: systemic antimycotic (fluconazole (triazole), itraconazole (orungal)) local antimycotic (clotrimazole, miconazole), immunomodulators, preparations containing bifidobacteria and lactobacillus, to restore normal vaginal biocenosis.

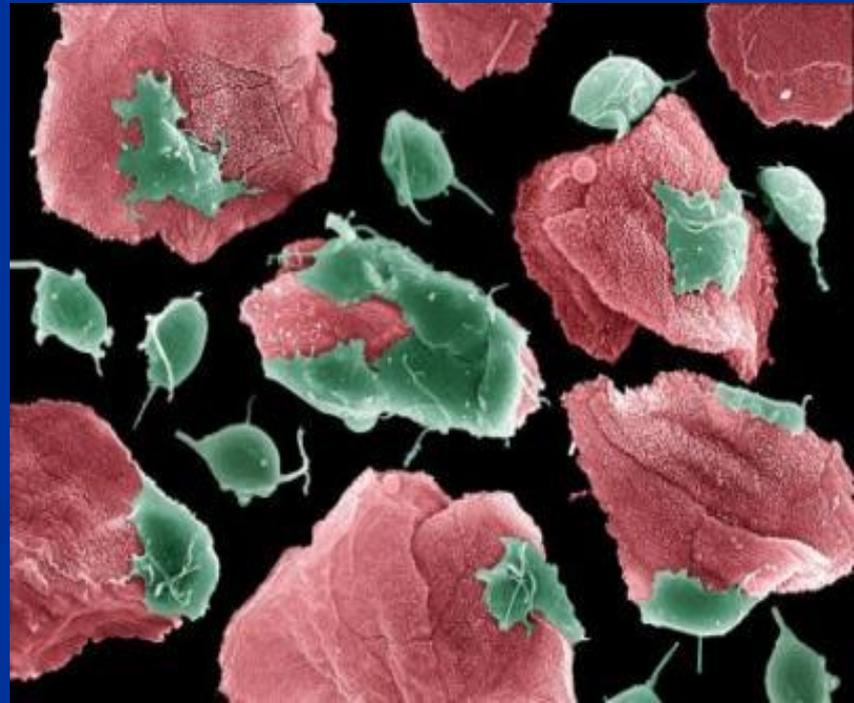
Trichomoniasis

- pathogen - *Trichomonas vaginalis*;
- among women who are sexually active morbidity - 60-70%;
- incubation period - from 3-5 to 20-30 days;
- major site of *Trichomonas* parasitism is vaginal mucosa, rarely - the urethra, bladder, endocervix, uterine appendages, excretory ducts of Bartholin glands.



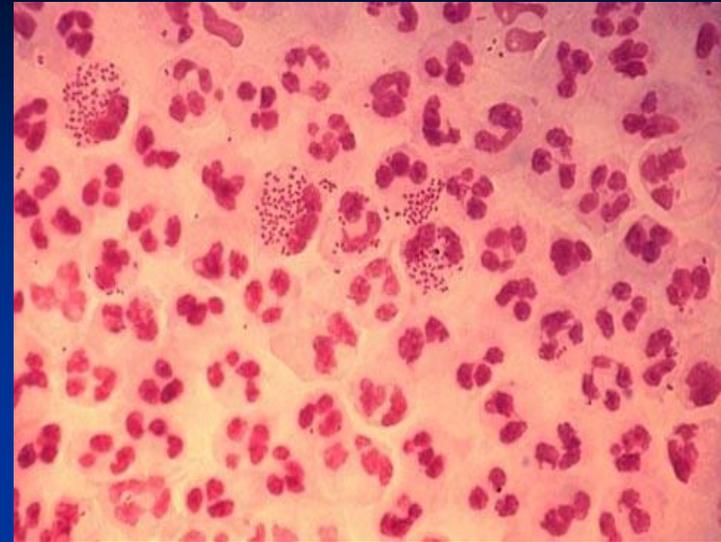
Trichomoniasis

- **Complaints**: the emergence of dense, foam, gray-yellow color whiter with an unpleasant odor, itching and burning in the vulva and vagina;
- **Objectively**: areas of redness, maceration, scratching on the skin and mucous membrane of the vulva, perineum, labia minora and majora, the presence of cervical erosion, redness and swelling of the vaginal mucosa, frothy purulent leucorrhea;
- **Diagnosis** is based on clinical manifestations, results bac. investigation of vaginal swabs, results of fluorescent microscopy;
- **Treatment**: systemic and local antiprotozoal (metronidazole); immunomodulators; preparations containing bifidobacteria and lactobacillus, to restore normal vaginal biocenosis. The simultaneous treatment of both sexual partners.



Gonorrhea

- venereal disease caused by *Neisseria gonorrhoea*;
- characterized by the predominant lesion of the mucous membranes of the urinary and genital organs;
- at the death of gonococci, endotoxin released provoking degenerative and destructive changes in the tissues, the development of adhesions;
- source of infection - the sick person, the main route of infection - sexual, at least - domestic, intrauterine and intranatal.
- incubation period - 3-7 days;
- isolated fresh gonorrhoea infection (not more than 2 months.) with acute, subacute and torpid course, and chronic (more than 2 months.)

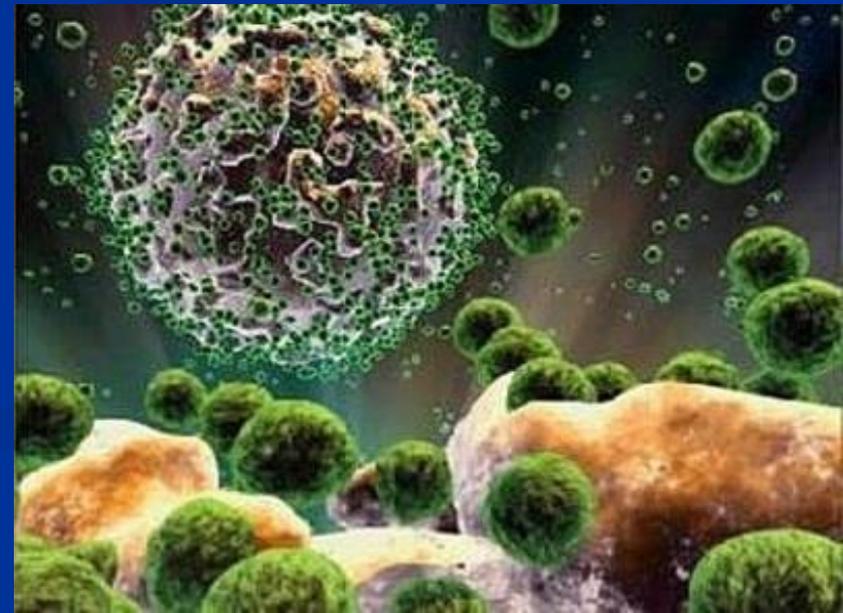
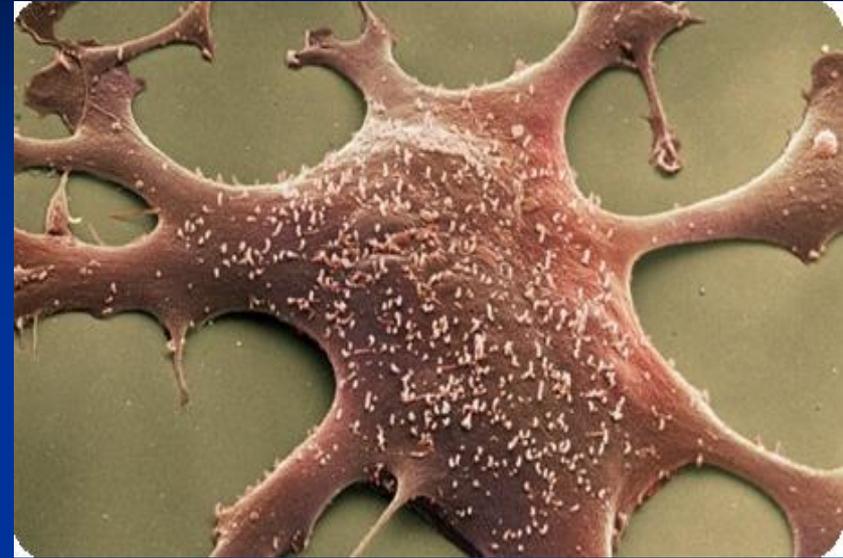


Gonorrhea

- distinguish gonorrhea of lower genital organs (gonorrheal urethritis, endocervicitis, bartholinitis, vulvovaginitis) and upper genital organs, ie rising gonorrhea (endometritis, salpingitis, pelvioperitonit);
- Diagnosis is based on clinical manifestations of the disease and the identification of *Neisseria gonorrhoeae*, taken from the urethra, the canal of the cervix and other foci of infection;
- gonorrhea in pregnancy is often asymptomatic, can lead to complications of pregnancy, childbirth and the postpartum period, as well as a risk factor for the fetus and newborn;
- treatment is carried out in a specialized hospital, the main drugs are AB penicillin, cephalosporins, aminoglycosides, Trobicin, macrolides (Sumamed), quinolones (Ciprofloxacin, Ofloxacin) in combination with Metronidazole, Tiberalom .

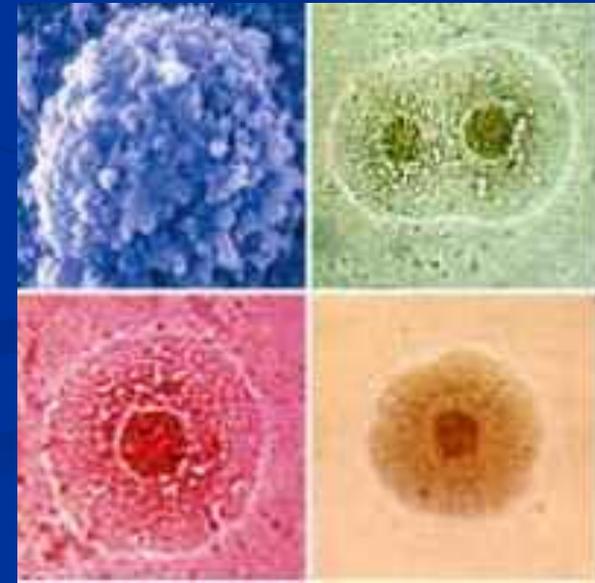
Urogenital mycoplasmosis, ureaplasmosis

- **pathogens** - Mycoplasma hominis, Mycoplasma genitalium, Ureaplasma urealyticum (small m / o localized to the oral mucosa, respiratory tract, lower urinary and genital organs, causing inflammation);
- **transmission** - sexual, data m / o often determined in patients with gonorrhea, trichomoniasis as concomitant flora;
- **clinical picture** is little different from that in colpitis, cervicitis, oophoritis other etiologies.



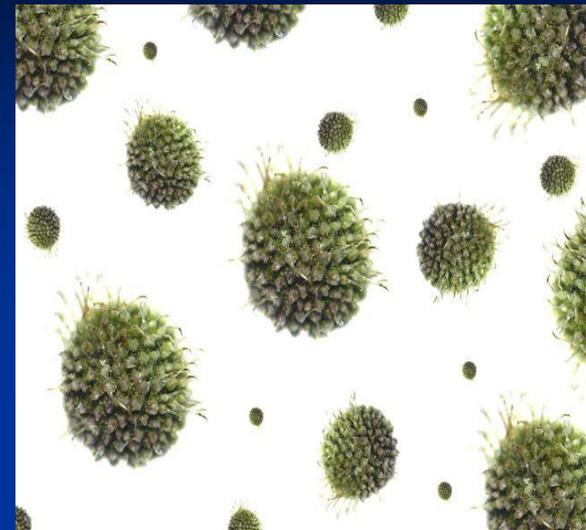
Urogenital mycoplasmosis, ureaplasmosis

- **Diagnosis:** to determine the causative agent used bacteriological method, material is derived from secretions of the vagina, cervical canal, Bartholin gland;
- test was performed based on the ability to allocate urease by Ureaplasma, which affecting the reaction of medium and changes the color of indicator, also used serological diagnosis, culture, immunofluorescence methods, PCR study immunograms;
- **Treatment:** systemic antibiotics (Doxycycline, Clarithromycin); immunostimulants (Cycloferon); antifungal drugs (Fluconazole); local treatment (Erythromycin ointment vaginal application) preparations containing bifidobacteria and lactobacillus, to restore normal vaginal biocenosis. The simultaneous treatment of both sexual partners.



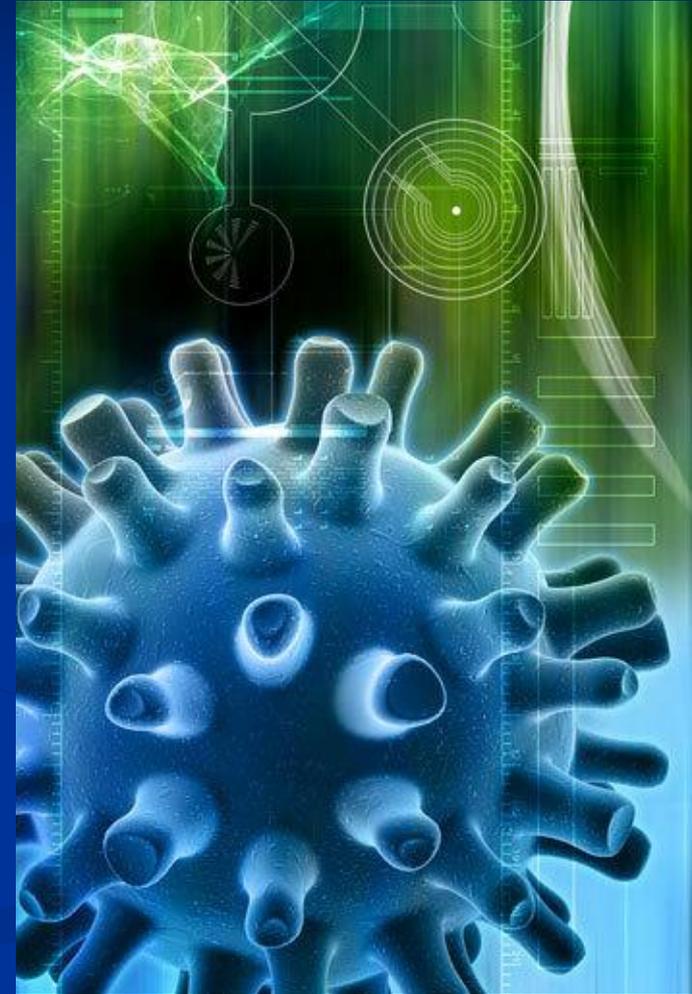
Genital herpes

- genital disease caused by herpes simplex virus, primarily type 2 (HSV-2);
- virus is localized mainly in the mucosa of the urinary and genital organs, cervical canal and nerve ganglia in the lumbar and sacral regions of the sympathetic nervous system;
- HSV-2 is transmitted sexually about pregnancy can lead to miscarriage and disadvantages of embryo development;
- distinguish clinically typical, atypical and asymptomatic infection;



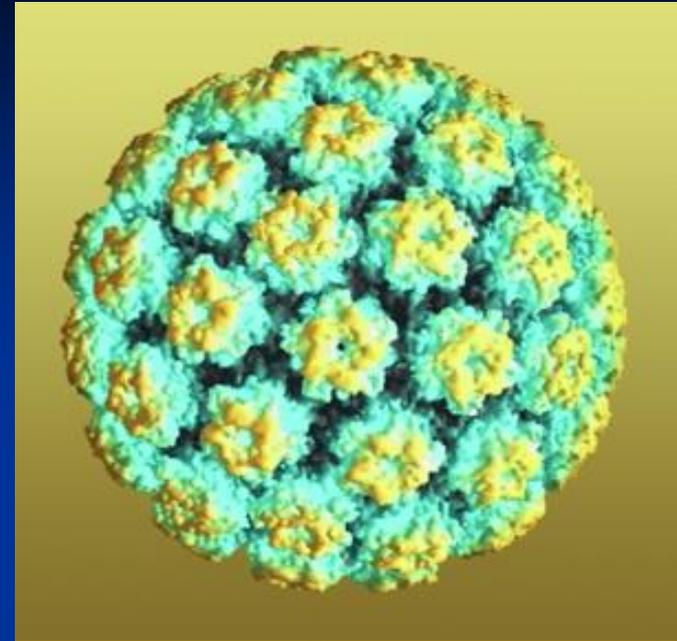
Genital herpes

- in dependence from localisation there are three stages of herpes : I - defeat by herpes the external sexual organs, II - defeat vagina, cervix, urethra, III - uterus, adnexa ,urine bladder;
- **Clinical manifestations:** hyperemia, swelling of the cervical canal, urethra; serous or serous-purulent discharges, pain, multiple vesicles on the skin and mucous;
- **Diagnosis:** Identify HSV -2 or it 's antibodies in blood serum of the patient, ELISA, PCR;
- **Treatment:** systemic, antiviral (Acyclovir, Famcyclovir, Valacyclovir), local treatment (acyclovir cream) immunomodulators, pain relief, vitamins, antioxidants, vaccine therapy.



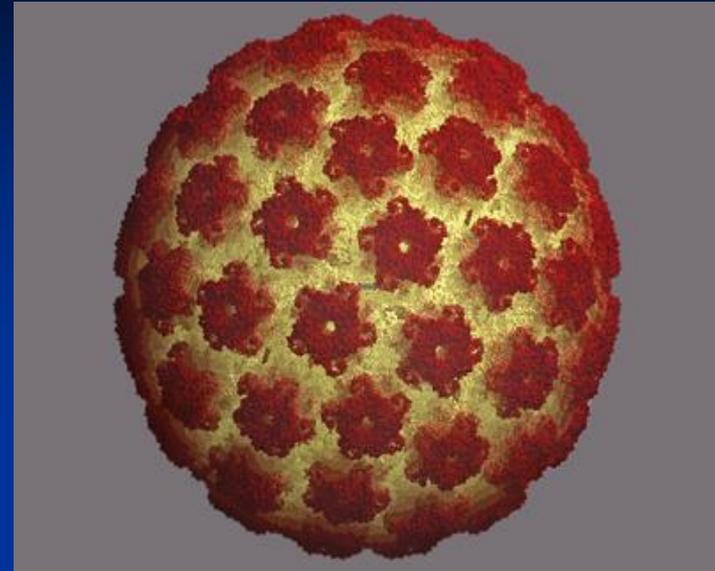
HPV infection

- pathogen - papillomaviruses sexually transmitted, some types of the virus are the cause of the development of cellular atypia, dysplasia;
- leads to the development of pointed and flat genital warts of vagina and cervix;
- early in the disease over the surface of the skin of the labia majora, inguinal folds, perianal and urethral mucosa appear single pink with gray tint formations; warts grow in the future, merging together, resemble cauliflower, characterized prolonged duration.



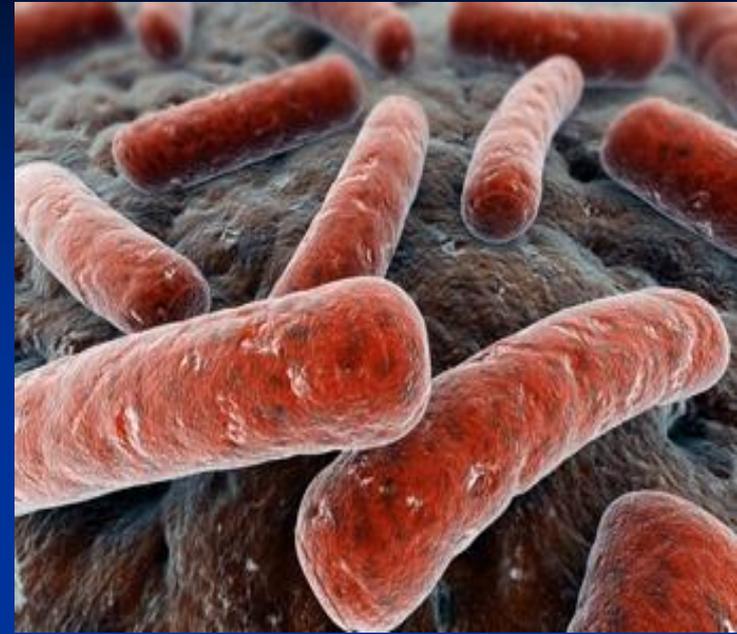
HPV infection

- papillomaviruses may be the cause of genital cancer, the possibility of malignancy should think when a flat or inverted warts, which are transformed into cancer in 6-26% of cases;
- treatment: for large warts perform cryotherapy, diathermocoagulation or surgical removal of warts, to treat small warts used Condyline, resorcinol, solkoderm.



Genital tuberculosis

- pathogen - *Mycobacterium tuberculosis* (human, bovine and avian types) penetrating from the primary lesion (usually lungs) hematogenous, lymphatic or by peritoneal adjacent organs;
- often the process is localized in the fallopian tubes (bilateral **tuberculous salpingitis**);
- also affects the uterus (**endometritis tuberculosis** characterized menometrorrhagia, tuberculosis, amenorrhea, adhesions, primary infertility, the development of pyometra), cervix (TB endocervicitis with polypoid growths); rarely diagnosed ovarian tuberculosis (TB periooforit, combined with tuberculous salpingitis).



Genital tuberculosis

- **Diagnosis** is based on immunobiological (Mantoux, Koch), bacteriological method (study of menstrual blood and endometrium obtained by dilatation and curettage, fluid from the abdominal cavity, resulting puncture tissue organs removed, tubo-ovarian punctate structures), a biological method (grafting pathological material guinea pigs), histochemical reactions (determination of RNA in the cell infiltrates), X-ray methods (CGM with simultaneous rentgenopelviografiej and laparoscopy);
- **Treatment**: No specific AB therapy (injection of drugs directly into the lesion and parenteral), corticosteroids (reduce the intensity of the inflammatory response), fermentotherapy, vitamin therapy, physical therapy, surgery (operation volume determined by the age and the prevalence of patient process). Treatment is carried out in conjunction with the gynecologist or phthisiatrician, phthisioginecologist.

Tuberculous salpingitis



- fallopian tubes are visualized in the form of pins, rosaries; ampullar tube sections impassable.



**INFERTILE MARRIAGES.
FAMILY PLANNING.**

Sterile marriage - a marriage in which pregnancy does not occur within 1 year of regular sexual intercourse without the use of contraceptives.



- currently infertile marriages frequency is greater than 20%;
- 50% of cases occur in female infertility (lack of fertility in women), 40% of cases - on men's (lack of fertility in men), 10% of cases there are mixed forms.

Female infertility

- extremely important and rather complex medical and social problem;
- still insufficiently developed and debatable is the etiopathogenesis of female infertility, which causes some difficulties in the appointment of adequate treatment.



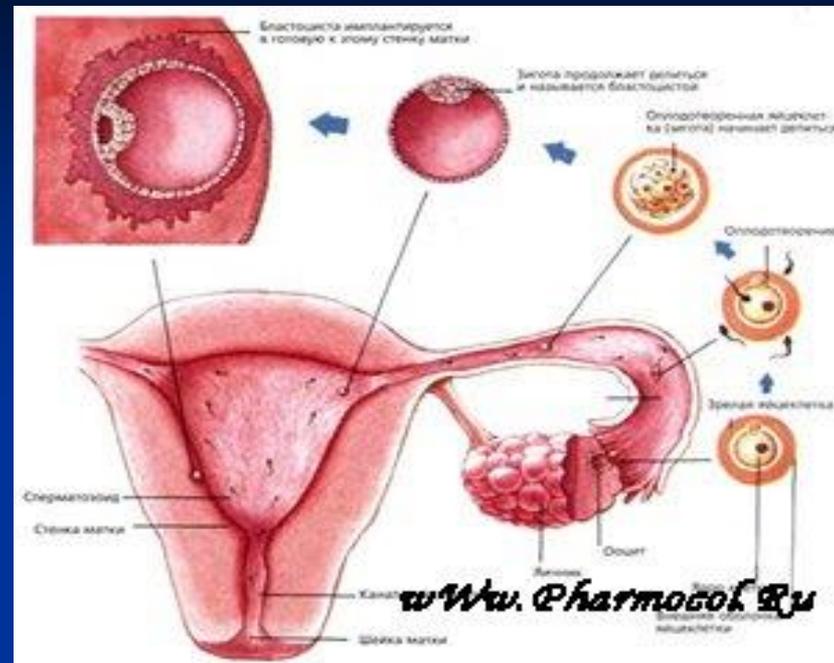
Classification

■ Distinguished:

- 1) Primary infertility (pregnancy never came at women who have sex and do not use contraceptives);
- 2) Secondary (a history of at least one pregnancy);

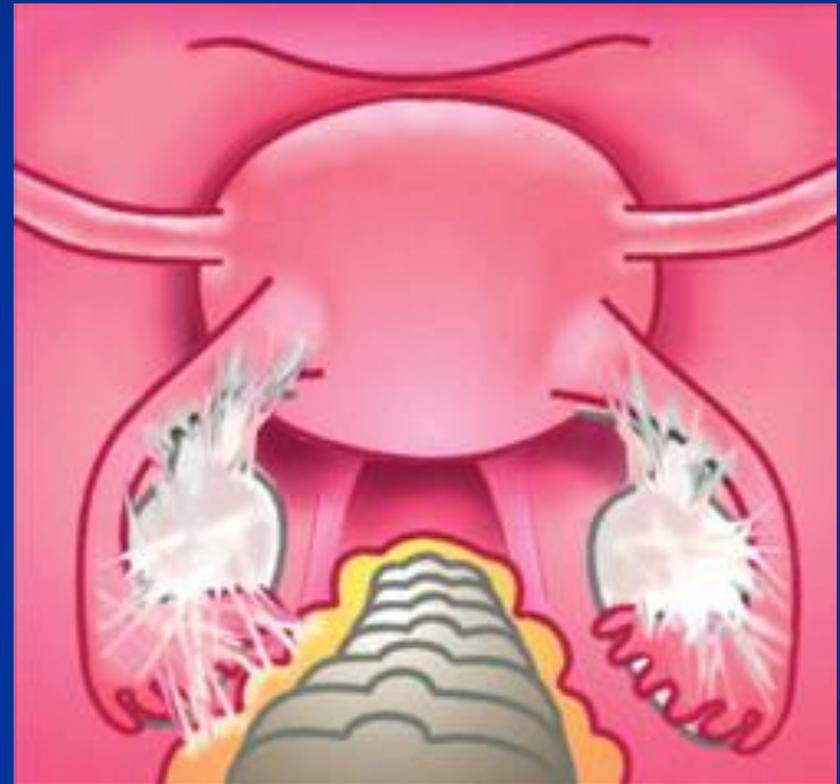
■ Allocate:

- 1) tuboperitoneal;
- 2) endocrine;
- 3) immunologicall;
- 4) uterine form of infertility due to altered anatomy of the uterus and vagina.



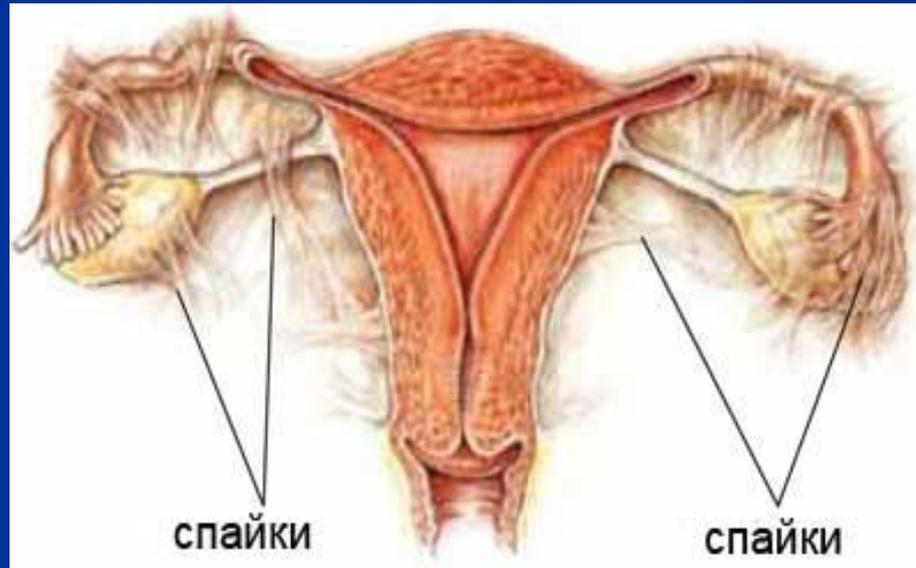
Tubal-peritoneal infertility

- frequency of violations of tubal patency in the etiological structure of female infertility is 35-40%;
- first place among the causes of this form of infertility occupy inflammatory diseases of the genital organs.

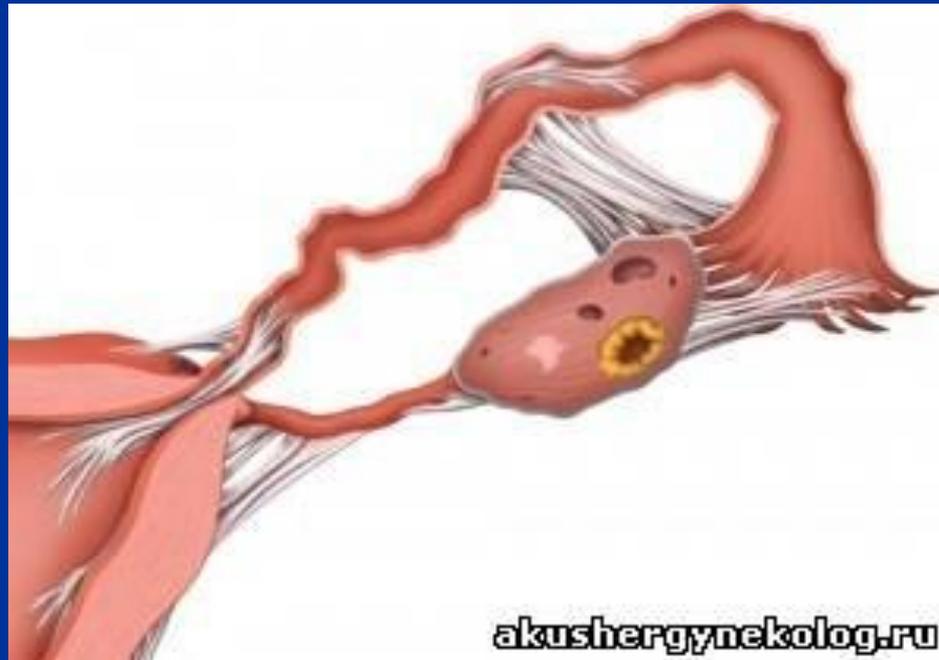


The clinical picture

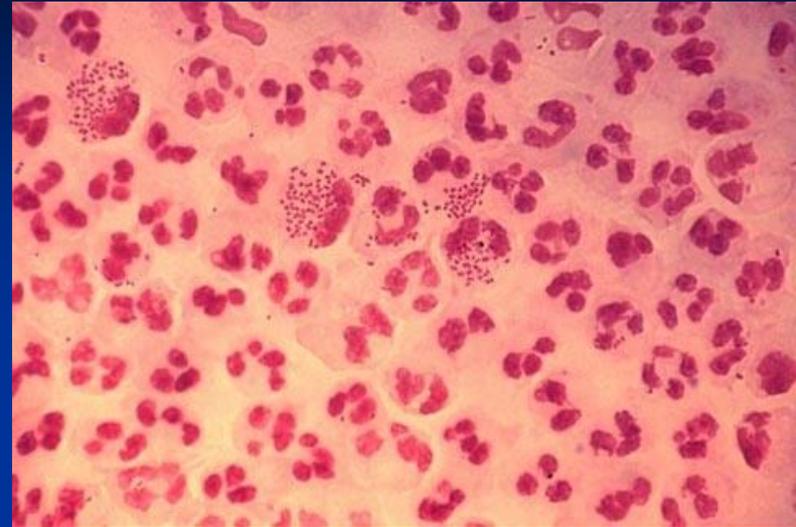
- inflammatory diseases of the female reproductive organs are generally characterized subclinical, but accompanied by the active formation of fibrous elements that causes narrowing or obliteration of the fallopian tube, the appearance peritubal and ovarian adhesions;



- these violations prevent the penetration of the egg to fallopian tube and its promotion, which is the main cause of infertility.



- most pronounced adhesions in the abdominal cavity and fallopian tubes after undergoing gonorrhoea note that in contrast to the banal infections often cause complete obliteration of the lumen;
- inflammation accompanied by severe hemodynamic changes in the fallopian tubes, which violates their peristaltic activity.

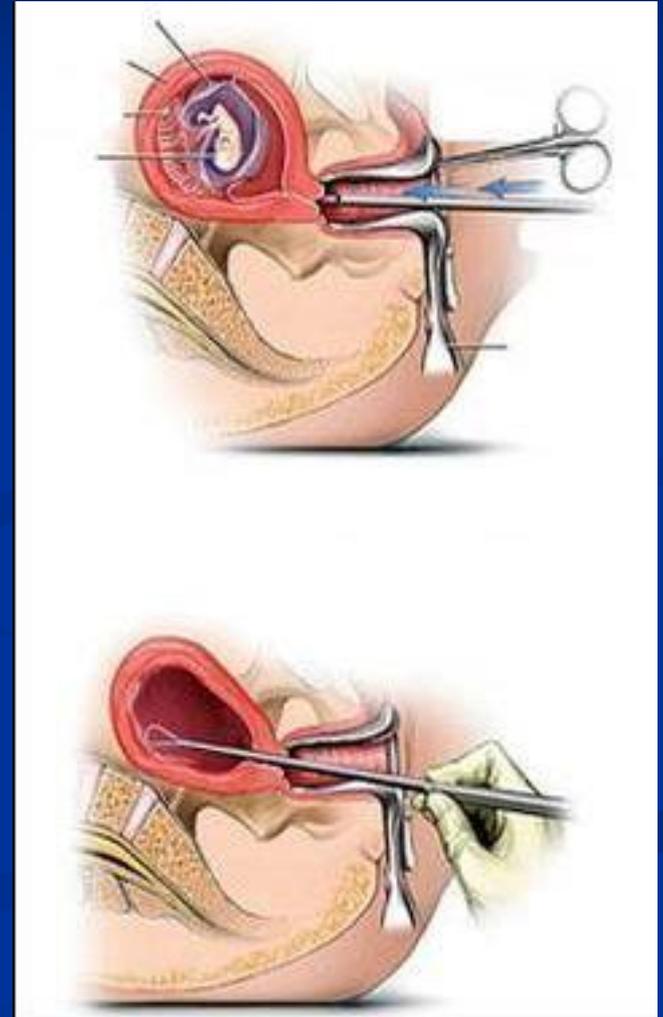


- occurring in the tubes sactohydrosalpinx determines atrophy of cilia and hyperextension of the muscle of the fallopian tube, which leads to its inferiority on the progress of gametes even while maintaining patency.

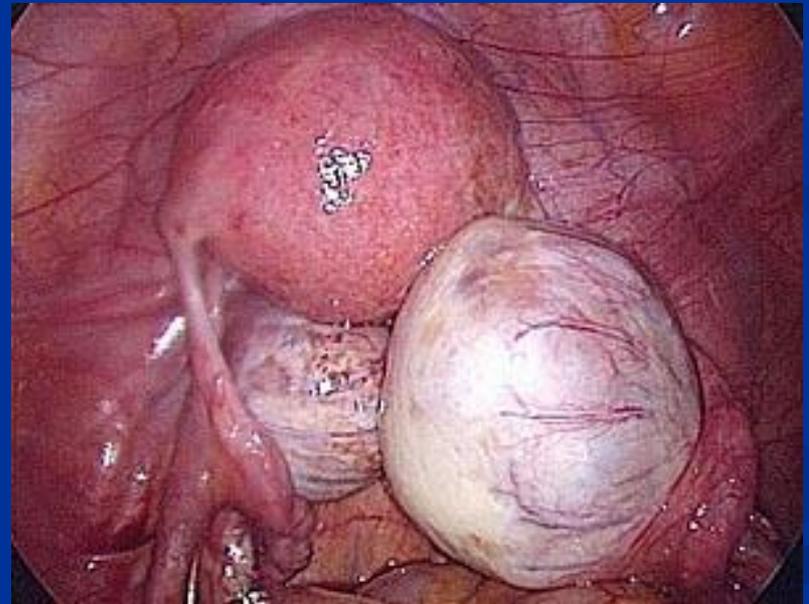


Among other reasons, allocate:

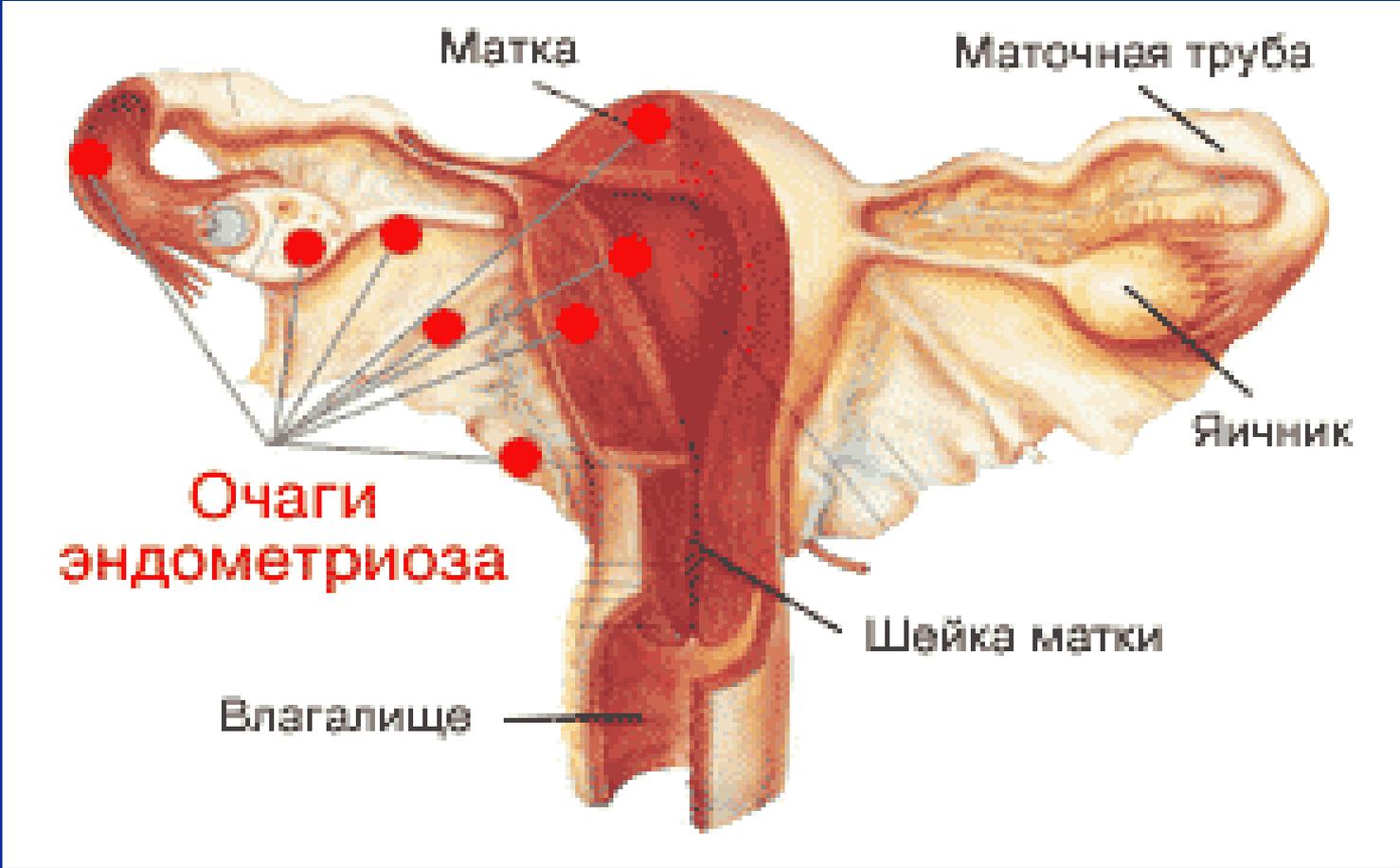
- curettage (obliteration occurs through fallopian tubes by mechanical damage of the endometrium in this section);



- tumors of the uterus and ovaries (mechanical compression of tubes and violation of their functions);



- endometriosis (endometrial implants that produce large amounts of prostaglandins, which violate tubal peristalsis, reduce their transport function, attract the fertilized egg, thus leading it from the fallopian tube);



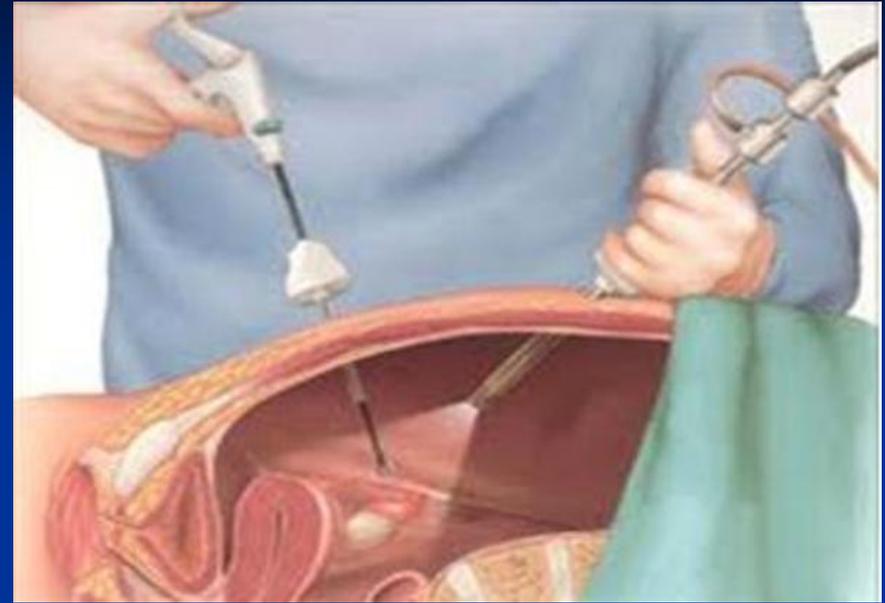
Peritoneal form of infertility

- due to adhesions in the area of internal genitals against the backdrop of the Fallopian tube;
- while existing adhesions lead to anatomical and functional disorders of the fallopian tubes and ovaries;
- the most common causes of this form of infertility are transferred last operations, endometriosis.



Diagnositics

- to determine tubal patency and functional state proposed many methods:
- ✓ metrosalpingography;
- ✓ hydrotubation;
- ✓ hromohydrotubation;
- ✓ endoscopy.



Treatment of tuboperitoneal infertility

- conservative;
- operative.

Conservative treatment

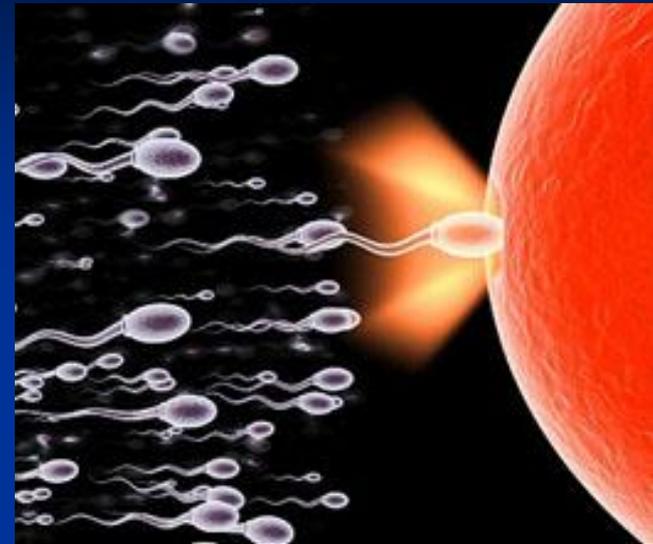
- anti-inflammatory therapy;
- treatment with puncture and hydrotubations with Lydasum, hydrocortisone, trypsin;
- immunotherapy (used autovaccine which containing anti-toxic, antigenic components of pathogen of inflammatory disease);
- physiotherapy (ultrasound, electrophoresis, zinc, potassium iodide, diathermy, interior and exterior);
- spa treatment (Mud and balneotherapy);
- improve microcirculation, adaptogens biostimulators, antibacterials.

Operative therapy

- operating methods resorted to in case of failure of conservative therapy ;
- basic intervention – fimbria-and salpingolysis , salpingostomy , salpingo- salpingoanastomosis, transplantation tube into the uterus ;
- second stage after surgery for several months rehabilitation measures are aimed at preventing the development of adhesions , improving the kinetics and function of the fallopian tubes (hydrotubations , physiotherapy techniques , spa- and peloidotherapy);
- if laparoscopy revealed obstruction of the fallopian tubes, which can not be corrected by surgery , have resorted to in vitro fertilization .

Endocrine sterility

- due to a violation of ovulation, fertilization inability of the cells or embryo implantation due to hormonal dysfunction;
- the frequency of this form of infertility is 20-40%.



Etiology and pathogenesis

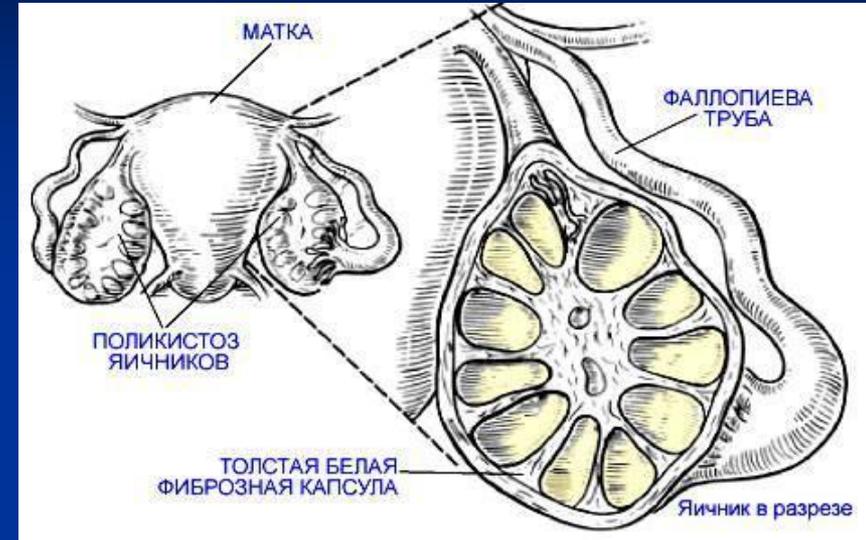
- the most common cause - lack of ovulation due to acyclic processes in the hypothalamic-pituitary-ovarian system that is characterized by a variety of clinical, biochemical and morphological changes that occur:
 - ✓ polycystic ovary syndrome;
 - ✓ adrenogenital syndrome;
 - ✓ various forms of hyperprolactinemia, hyperandrogenism, etc.

- among the causes of endocrine infertility products is dominated by primary morphofunctional disorders of the hypothalamic-pituitary-ovarian complex, which appear or hypomenstrual amenorrhea syndrome and are mainly due to genetic chromosomal abnormality:
 - ✓ Turner's syndrome;
 - ✓ mixed form of gonadal dysgenesis;
 - ✓ hermaphroditism;
 - ✓ adrenogenital syndrome;
 - ✓ testicular feminization syndrome;
 - ✓ hypopituitarism;
 - ✓ gonadotropin hypogonadism;
 - ✓ Laurence Moon Bardet Biedl syndrome, etc.

- Infertility caused by a primary violation of the hypothalamic-pituitary - ovarian system (primary ovarian failure) may also be due to the damaging effect of various factors , external aggression in prepubertal ;
- secondary disorders of the hypothalamic - pituitary-ovarian axis associated with disease usually occurs in the post-pubertal period:
 - ✓ hypo-and hyperthyroidism;
 - ✓ psychogenic amenorrhea;
 - ✓ anorexia nervosa;
 - ✓ Cosmetic amenorrhea;
 - ✓ Sheehan's syndrome;
 - ✓ Chiari-Frommel syndrome ;
 - ✓ Simmonds' disease;
 - ✓ wasting ovaries syndrome, etc.

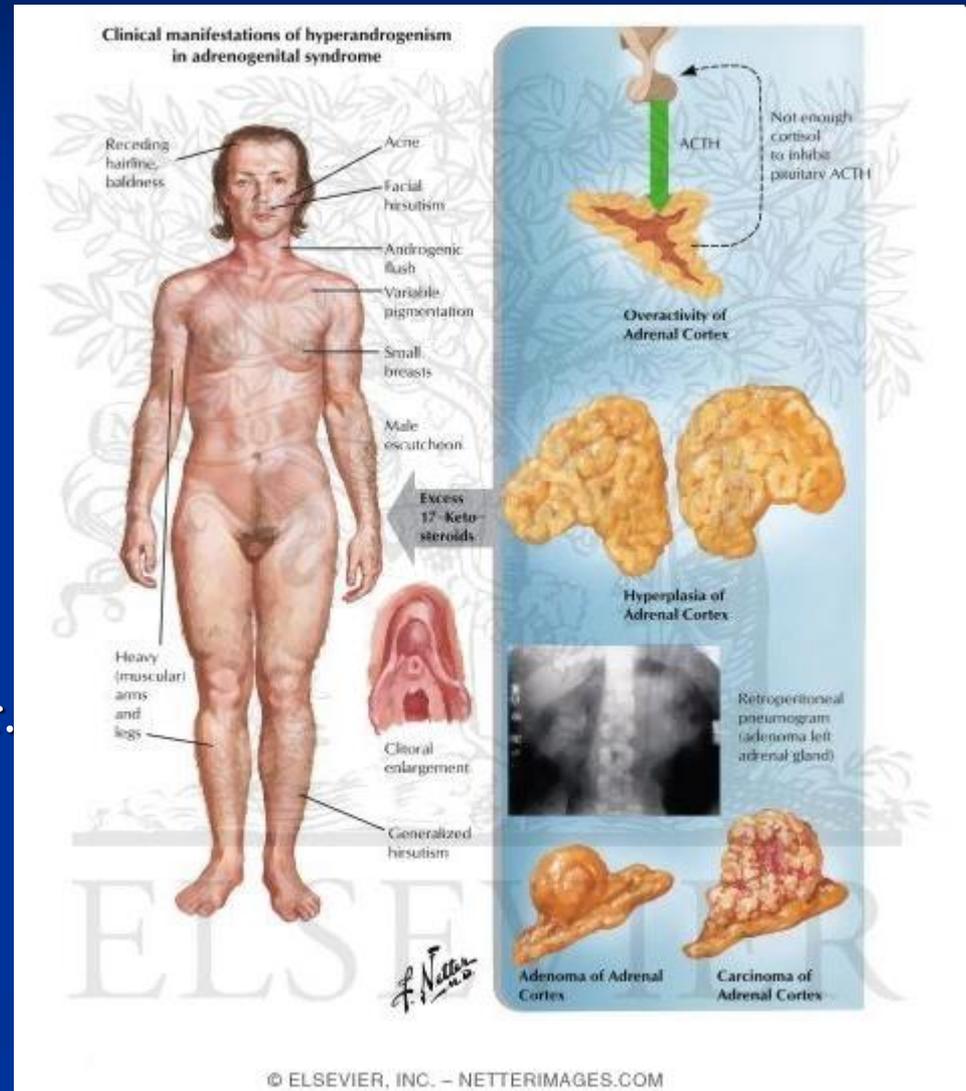
Polycystic ovary syndrome (Stein-Leventhal syndrome)

- characterized by impaired mechanism of formation steroid hormones with the emergence of anovulation and lack secretory transformation of the endometrium;
- elevated levels of androgens, estrogens and LH decreased.



Adrenogenital syndrome

- is a typical form of virilization;
- hereditary deficiency due to 21-hydroxylase required for the synthesis of corticosteroids, according to the principle of feedback is increased ACTH production, which leads to hyperplasia of the adrenal cortex activation androgen synthesis;
- adrenal dysfunction can also be caused by neoplastic process, while it has a secondary character.



Morris syndrome

- manifests the presence of testicular feminization of male gonads that produce female steroids karyotype 46XY, elevated levels of gonadotropins.

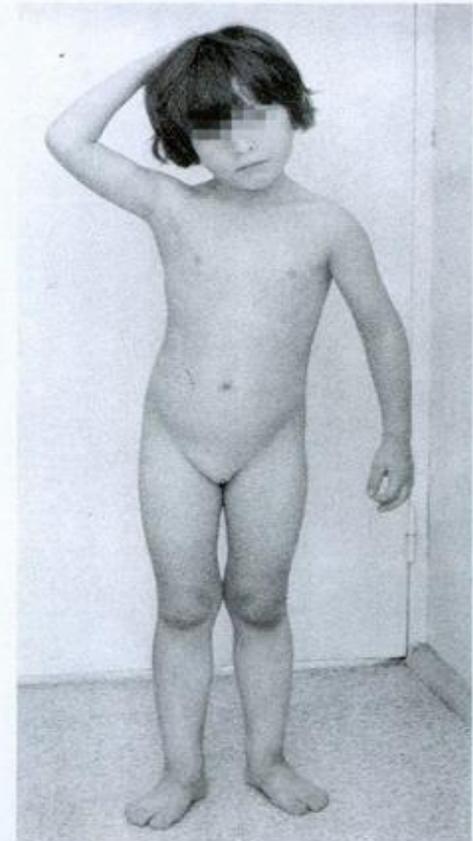
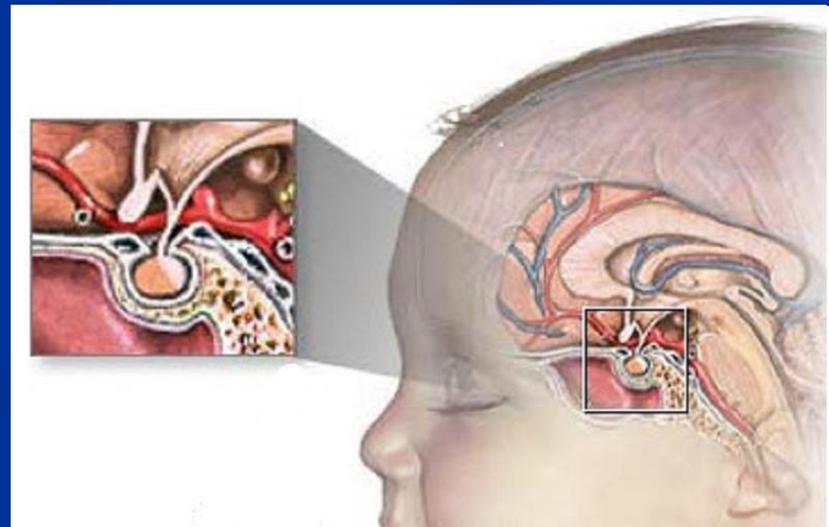
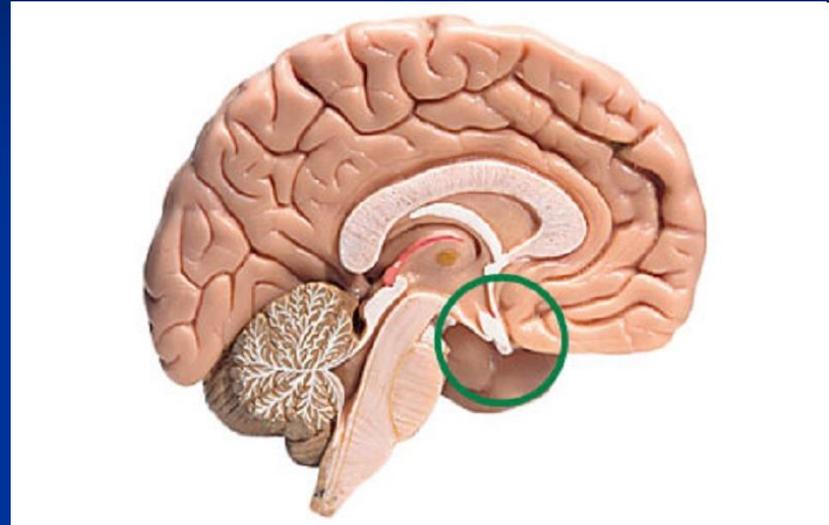


Рисунок 4. Больная 4 года. Синдром тестикулярной феминизации. Тестикулы в паховом канале

Hypopituitarism

- accompanied by a reduction of the function of the pituitary gland, decreasing the production of all pituitary hormones;
- for gonadotropin hypogonadism (empty sella turcica syndrome) is characterized by decreased production of FSH and LH;
- pathophysiological basis of hypothalamic syndromes (Laurence-Moon-Bardet-Biedl syndrome, Kallmann and others) are degenerative changes in the neurosecretory nuclei of the hypothalamus with the restriction of production and dysfunction of releasing hormones

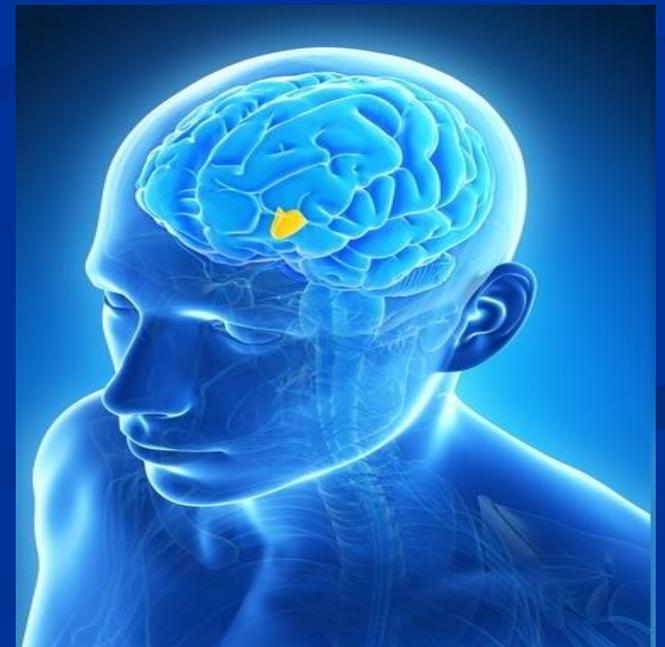


Hyperprolactinemia

- due to decreased production of dopamine in the neurosecretory hypothalamic structures, transport it to the pituitary gland, the influence of pharmacological agents;
- increased production of prolactin inhibits FSH and LH, which leads to disruption of hormone and generative of ovarian function in the form of anovulatory menstrual cycles, luteal phase deficiency, amenorrhea, premenstrual syndrome, algodismenorrhea.



- also note the significant influence of unfavorable factors of modern civilization on the reproductive system: constant stress reaction of various origins provoke persistent neuro-endocrine changes in the body, leading to violations of generative function.



- against the background of emotional stress develops syndrome of stress expectations and imaginary pregnancy, uncertainty in its offensive and favorable current, which leads to the formation of persistent disturbances in the hypothalamic-pituitary system and eventually to infertility.

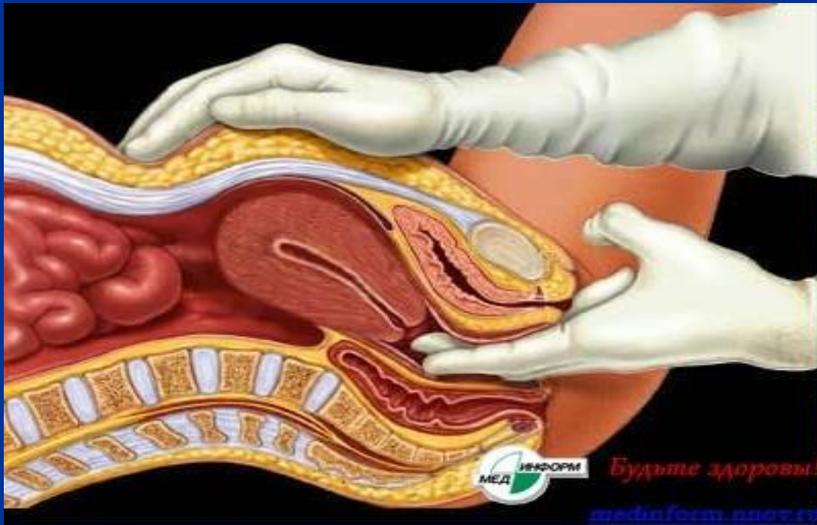


- all of these diseases are the cause of ovarian steroidogenesis disorders and dysfunction of ovarian follicular system that manifest persistence or atresia of the follicle, luteal insufficiency, luteanisation of non-ovulate follicle etc.

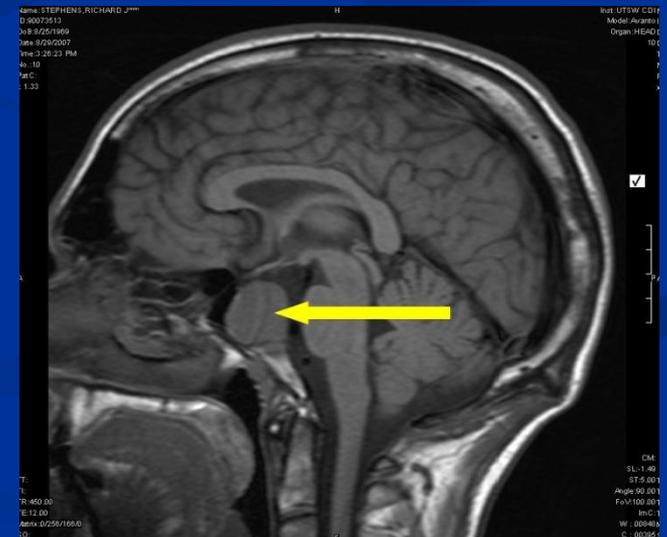


Diagnostics

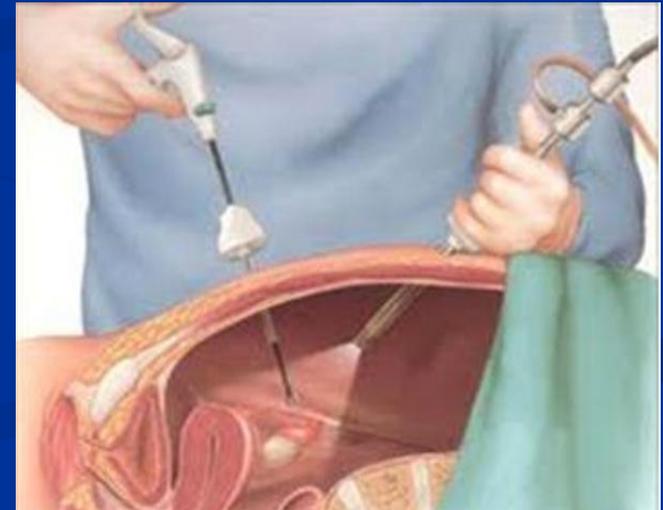
- trivial clinical examination (anamnesis, objective research in general and special gynecological examination);
- Tests of functional diagnostics;
- determination of sex steroid levels in the blood or excretion with urine ;



- Histological examination of the endometrium;
- determination of gonadotropin-releasing hormone (FSH, LH, prolactin) and releasing factors;
- X-ray examination or CT area of the sella turcica;
- study of the content of 17-ketosteroids, testosterone, cortisol, ACTH, thyroid hormones, cholesterol, BMR.



- in establishing the causes of endocrine infertility additional information are ultrasonic and endoscopic techniques for the study;
- **sonography** allows you to control the growth of follicles, ovulation, determine the thickness of the endometrium in different phases of the cycle;
- using **endoscopic techniques** visualize the pelvic organs, ovarian biopsy is performed followed by histological and morphological study of the biopsy.



- in the complex examination of patients with infertility should include genetic counseling using special methods for determining the level of sex chromatin, karyotyping, cytogenetic examination, etc., which can detect monosomy, mosaicism, deletions and other chromosomal abnormalities that cause infertility.

Treatment

- in the treatment of endocrine infertility, be aware that it is a consequence of various diseases, so treatment should be directed primarily to the elimination of one or another disease that caused it:
- ✓ to eliminate the hypothalamic-pituitary insufficiency are widely used gonadotropic hormones that stimulate the ovaries (human menopausal gonadotropin, human chorionic gonadotropin, prophase, pergonal, humegon, etc.);

- ✓ to induce ovulation, widely used synthetic releasing hormones intravenous LH-RH in the intermittent mode (5-10 micrograms per pulse) is effective in the case of normal and hypoestrogenism in the presence of resistance to clomiphene;
- ✓ in the treatment of patients with anovulation on a background of normal levels of production of gonadotropins administered Clomiphene citrate and its analogues, has anti-estrogenic effect;

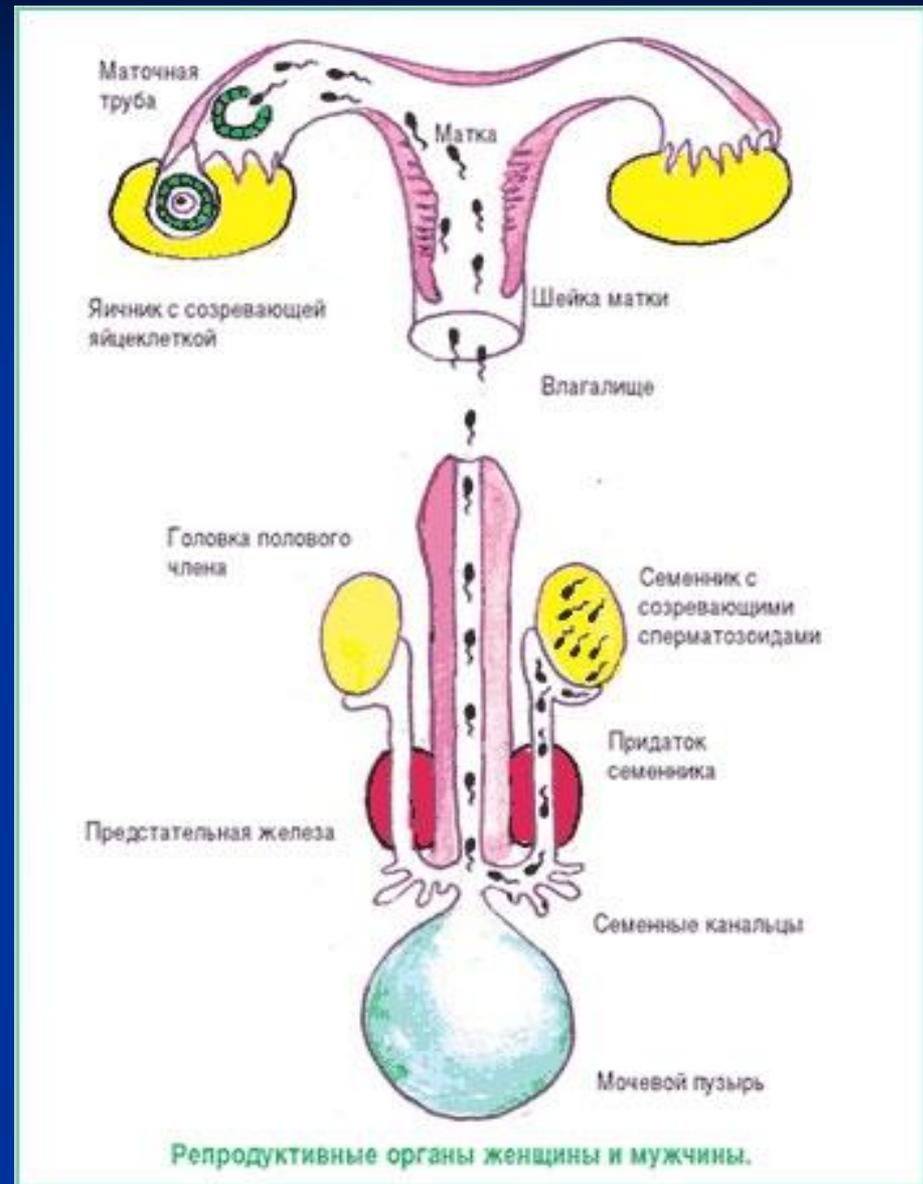
- ✓ estrogen deficiency in ovarian function (**insufficient follicular phase**) prescribe estrogens (Microfollin, Proginova, Estrofem, Estrone, and others);
- ✓ **luteal phase deficiency** in good curative effect give Turinal, Norcolut, Pregnin, Duphaston, Progesterone during the second phase of the menstrual cycle;
- ✓ combined estrogen-progestin drugs are prescribed in order to obtain rebound-effect for 2-3 cycles;

- ✓ **excessive production of prolactin** is inhibited by administration of Bromocriptine or Dostinex; selection of the optimal dose and duration of treatment is decided individually depending on the sensitivity of the lactotrophs and severity appropriate response of the pituitary-ovarian system to the drug;
- ✓ **adrenogenital syndrome** with Prednisolone or Dexamethasone, starting with a dose of 10-15 mg and gradually lowering it for 4-6 months.

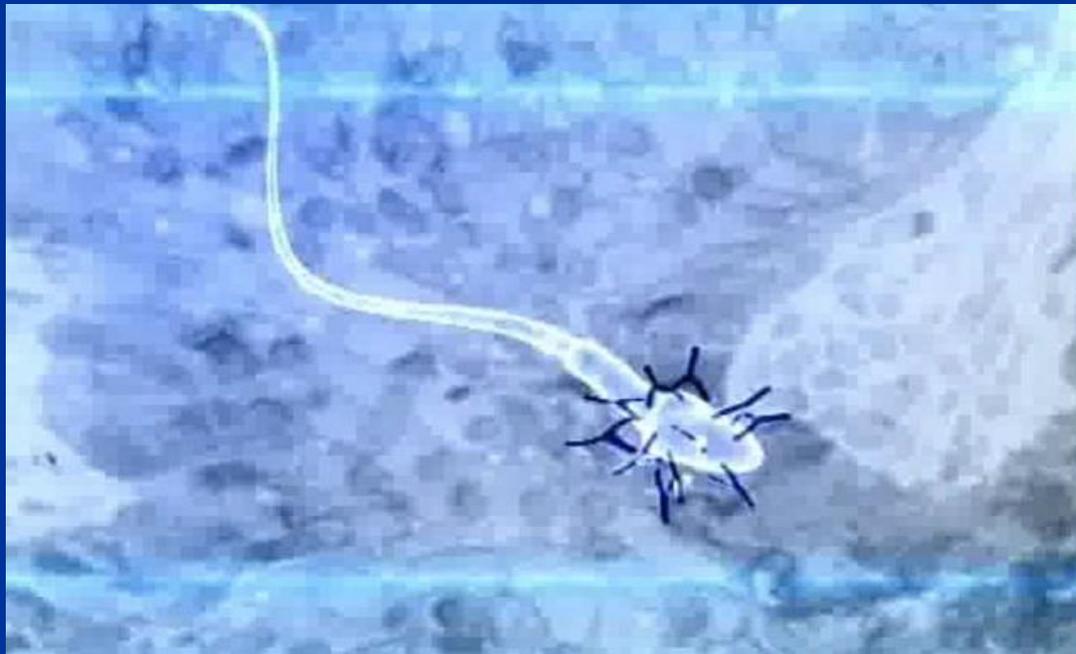
- other than medication use **physiotherapy techniques** (electrophoresis, diathermy, electrical stimulation of the cervix, laser irradiation, acupuncture, autotransfusion of blood irradiated with ultraviolet rays, allotransplantation of cryopreserved ovarian tissue) and **surgical** (diathermocoagulation and termocauterization of ovaries using endoscopy).

Immunological infertility

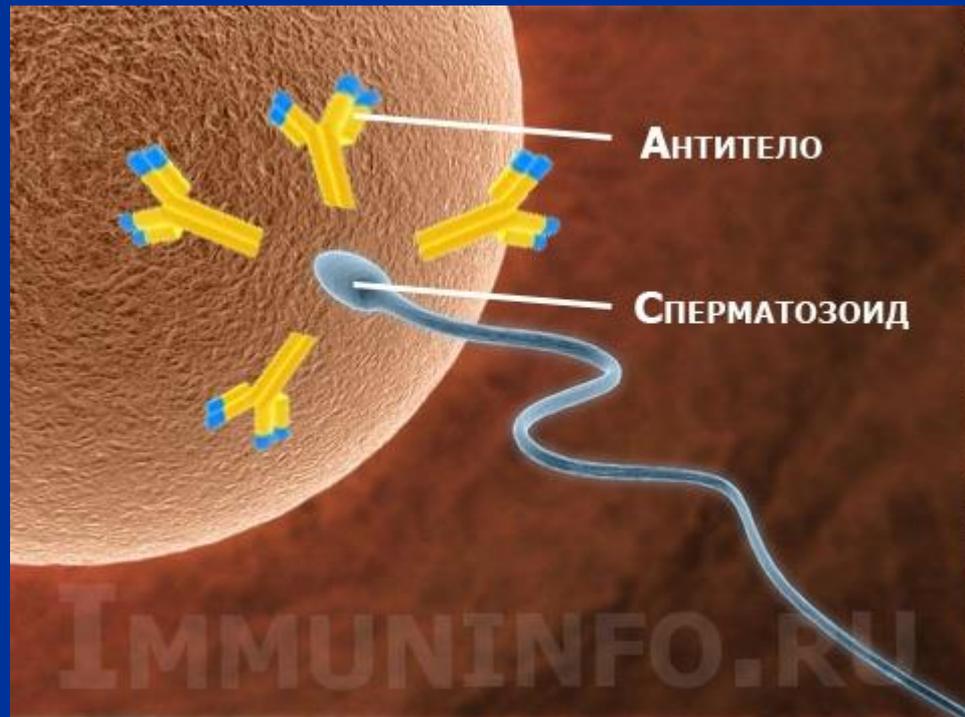
■ among the reasons allocate the presence of specific izoantibodies to sperm in the vagina, cervical canal mucus, endometrium, fallopian tubes, peritoneal fluid and follicular autoantibodies to a brilliant zone of the ova , to the cells of the granular layer or autoimmune ovarian total defeat.



- endocervical mucus plays the role of biological valve, which on certain days of the menstrual cycle passes sperm into the uterus, the most favorable period is ovulation, during which the viscosity of cervical mucus is reduced by changing its pH, the level of immunoglobulins, are all conditions for the survival and accumulation of sperm;

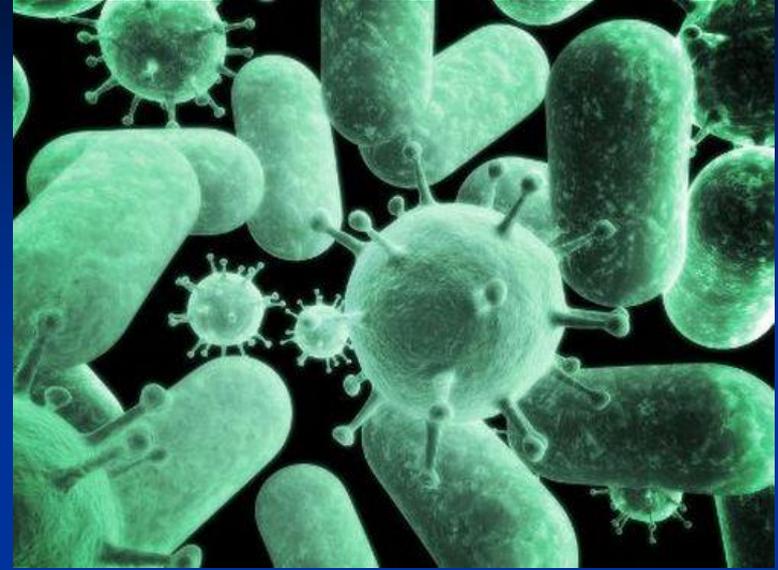


- immunologic infertility in IgA and IgG levels increased in all phases of the menstrual cycle and sperm antibodies of the mucus of cervical canal belong precisely to these classes of immunoglobulins;



- main link of immunity responsible for the immune protection by production of immunoglobulins (IgA), as well as their absorption from the plasma (IgA, IgG and IgM), localized in the cervical mucus ;
- Currently, there is 40 ejaculate antigens capable cause formation of antibodies;
- in addition, local infection of female genital mutilation can also affect the production of antibodies by the stimulative effect of the infectious agent , and cross-reactive antigens ;
- all kinds of surgical interventions (IUD insertion , curettage , surgery on the uterus and appendages) - is expressed immune system attack on the sexual women capable cause the production of antibodies .

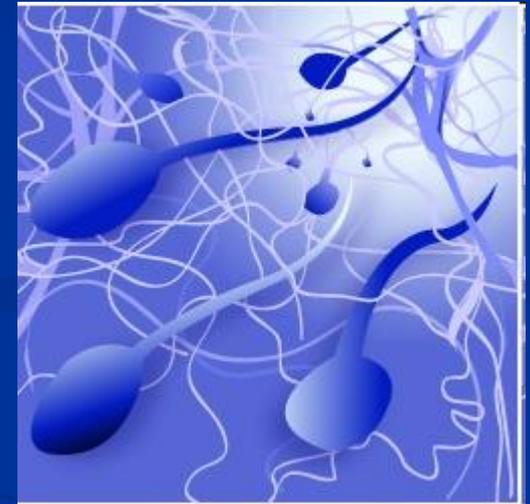
- there are several ways to sensitize by ejaculate the female body:
- ✓ genetic predisposition;
- ✓ sexual activity in the second phase of the menstrual cycle (no mucus in the canal of the cervix, endometrial stroma is loose, which facilitates the penetration of sperm in the subepithelial layer and provides their contact with immunocompetent cells);
- ✓ infection (cross-reaction);
- ✓ reduction of an immune response inhibitor in seminal plasma.



Antispermatozoon immunity may show the following reactions:

- Appearance of humoral antibodies;
- forming of tissue antibodies;
- increased phagocytosis of spermatozoa;
- sensitized by the presence of monocytes in the cervix and uterus;
- delayed sensitization reaction in the form of inhibition of implantation of the blastocyst or its breakage;
- emission of semen by sensitized uterine cavity reinforced by its contractions.

- sperm antibodies can be formed not only in the women, but also in the male body as a result of violations of the gametotesticular barrier due to trauma, infection or surgery, do not exclude the role of genetic predisposition to the formation of these antibodies;
- sperm agglutination noted in the presence of sperm antibodies in seminal plasma, that prevents their penetration into the cervix, uterus, fallopian tubes.



- immunological cause of infertility may be autoimmune oophoritis, which are mainly associated with other systemic autoimmune diseases, autoimmune destruction of the gonads are irreversible;
- recently found an association of chronic inflammatory diseases of the pelvic organs with products antiovarian antibodies that can cause follicle atresia, the destruction of the oocyte, which significantly reduces ovarian reproductive potential and can be a cause of infertility.

Diagnosics

- Tests of spontaneous agglutination of sperm in gelatin used for detection of sperm antibodies in seminal plasma;
- for the determination of sperm antibodies use reaction of Izogim, immobilization of sperm, which is a method of choice for the screening examination for the detection of antibodies in the blood plasma, as well as studies of cervical mucus;
- for the study of sperm antibodies in the blood of both women and men used ELISA;

■ important diagnostic test of immunological compatibility of spouses is postcoital test Shuvarsky-Huner and sample of Kurtsrokk-Miller (test contact with sperm and cervical mucus).

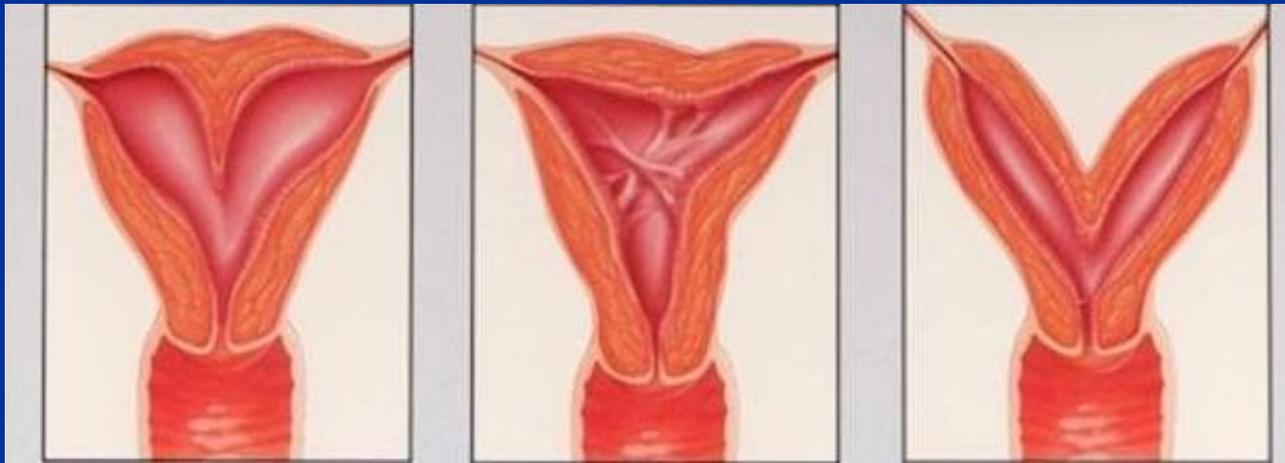
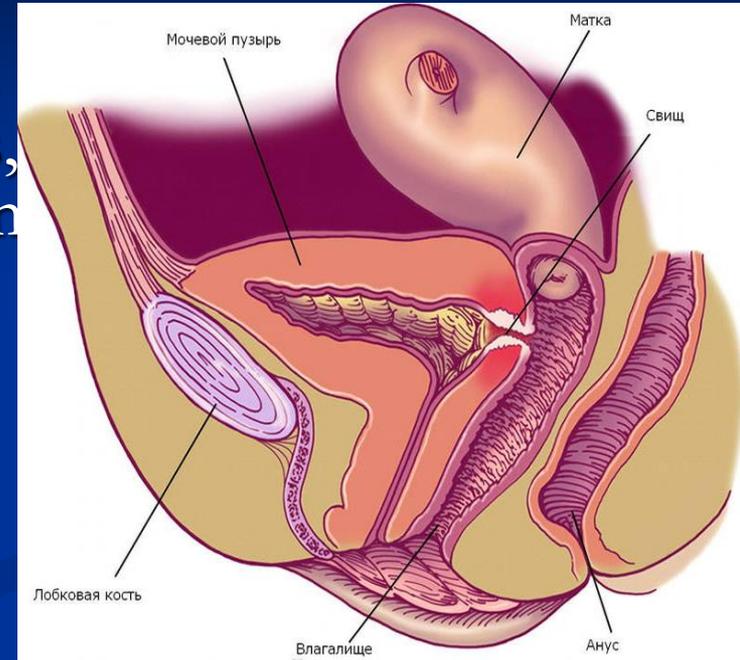


Treatment

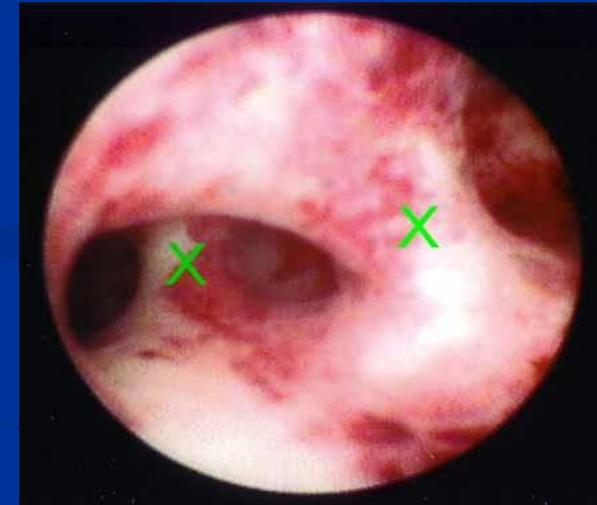
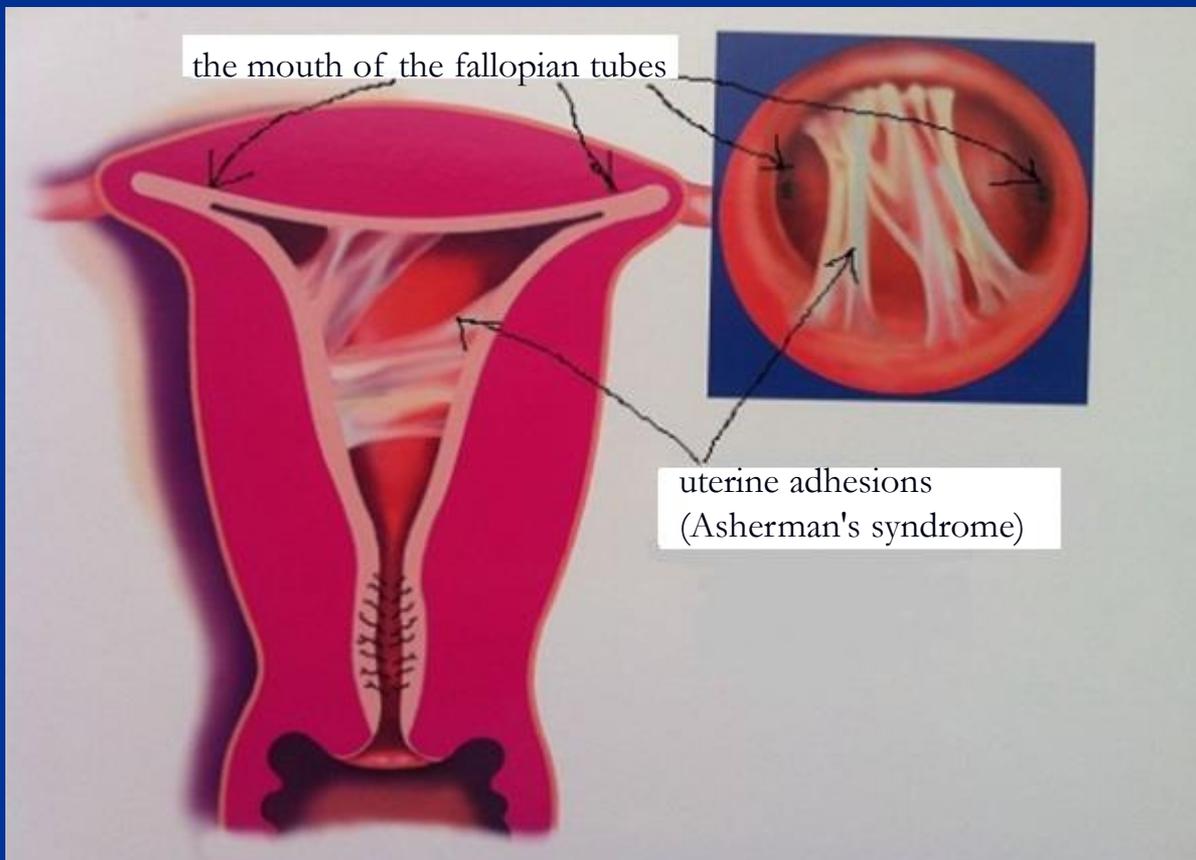
- Immunosuppressive techniques (low doses of corticosteroids for 2-3 months. or shock doses for 7 days pre-ovulatory period);
- fertilization with sperm "scoured" by physiological buffer supplemented with 5-10% human serum or albumin;
- insemination with donor sperm;
- Antibiotic (held to correct autoimmune disorders caused by inflammation in the genitals with a latent course).

Infertility due to altered anatomy

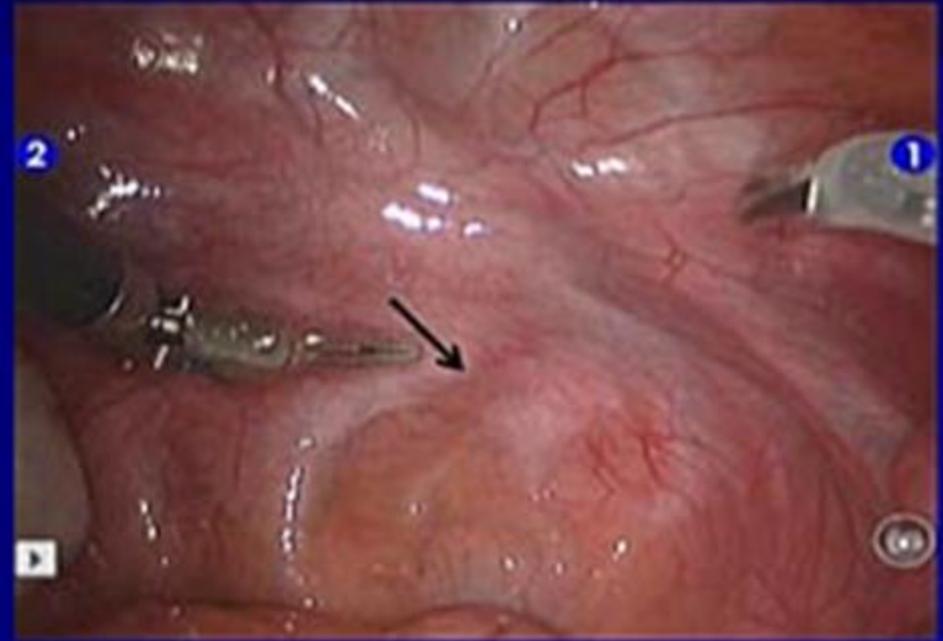
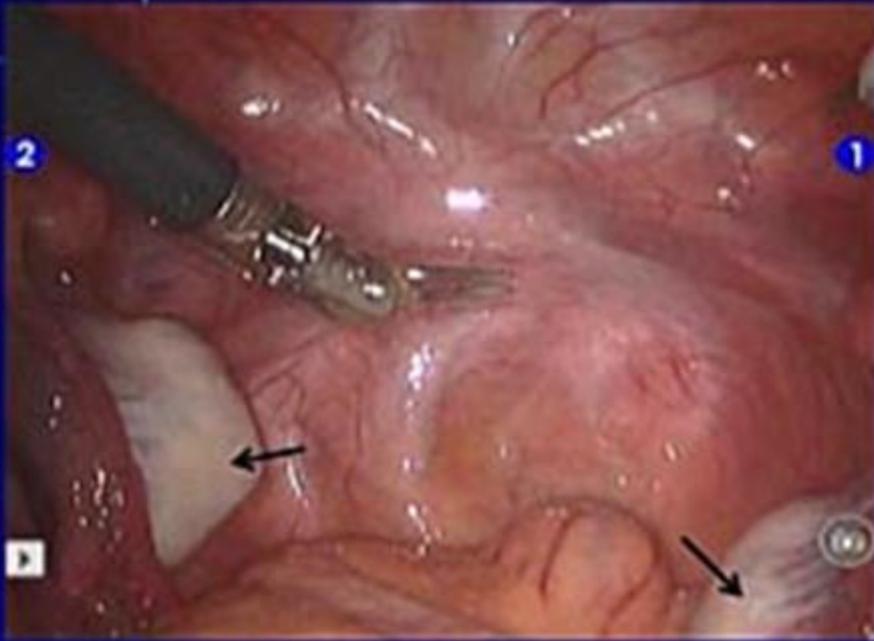
■ reasons: various malformations of female genital mutilation, the surgical removal of the uterus, fallopian tubes, ovaries, genital trauma with formation of urogenital or enteric fistula, intrauterine adhesions (Asherman's syndrome), tumors of the uterus and appendages.



Intrauterine adhesions (Asherman's syndrome)



Mayer-Rokitansky-Kuster syndrome



- Congenital absence of uterus and vagina;
- Normal ovarian function;
- Female phenotype and karyotype;
- Frequent combination with other congenital malformations (skeletal, urinary organs).

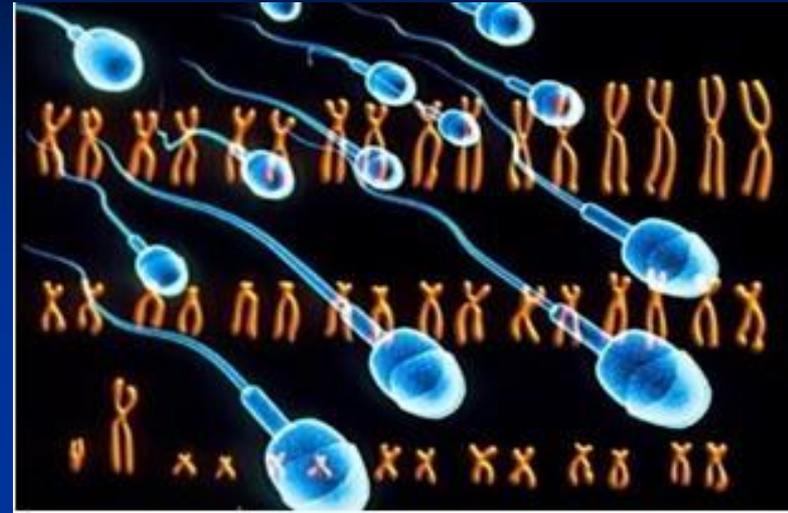
Male Infertility

- frequency - about 40% of cases;
- is not a disease but a symptom of various diseases;
- when examining infertile couple in the first place should be excluded male infertility on the basis of is the semen analysis (sperm pass the subject of abstinence from sexual activity for at least 3 days, but not more than 7 days, and the use of alcohol - not less than 5 days.



■ according to WHO standards:

- ✓ ejaculate volume should be 2-5 ml
- ✓ number of spermatozoa in 1 ml of semen - not less than 20 million,
- ✓ actively motile sperm - 25-40%
- ✓ live spermatozoa - no less than 60%,
- ✓ dead - no more than 40%,
- ✓ degenerative forms - not more than 30-40%
- ✓ pH sperm N- 7-7,6,
- ✓ time dilution of semen N- 15-30 minutes,
- ✓ spermoagglutination absent
- ✓ number of immature germ cells - no more than 3-5%
- ✓ leukocytes - 3-8 in sight
- ✓ No erythrocytes.



- **polyzoospermia** - Availability in 1 ml of 200 million sperm;
- **oligozoospermia** - Availability in 1 ml of less than 20 million sperm;
- **asthenospermia** - lack of actively motile sperm;
- **necrospermia** - presence in the semen of 80% or more dead sperm;
- **teratozoospermia** - the large number of degenerative sperm.



- **azoospermia** - no sperm in the semen of mature cells in the presence of spermatogenesis;
- **aspermia** - no sperm in the semen of mature and immature germ cells;
- **pyospermia** - the presence in semen more than 8 leukocytes;
- **gemospermiya** - the presence of blood in the semen;
- **microgemospermia** - the presence of red blood cells in the semen under the microscope.



Classification of male infertility

1) secretory infertility:

- a) secretory endocrine (gonadal failure);
- b) secretory-toxic (heterointoxication);

2) excretory infertility:

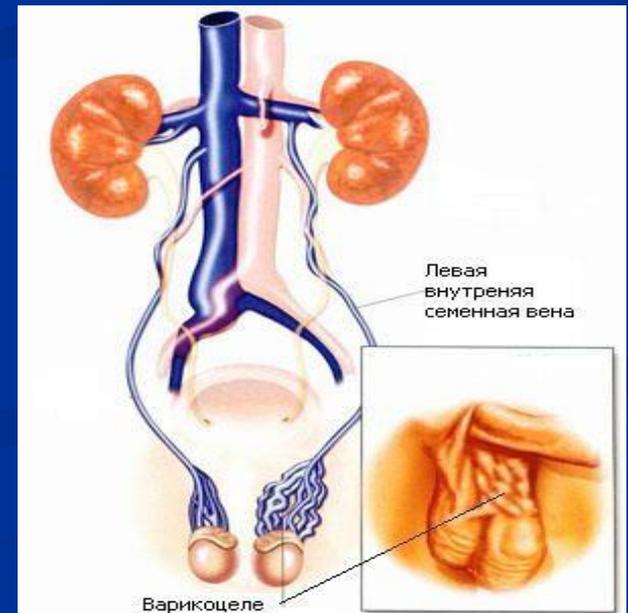
- a) excretory-toxic (or other inflammatory intoxication ejaculatory ducts);
- b) excretory-obstructive (obstruction of the ejaculatory ducts);

3) a mixed form of infertility;

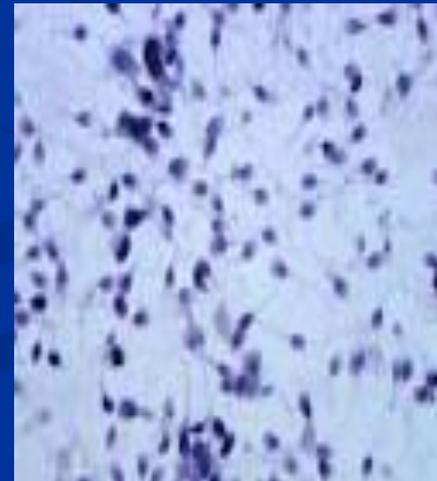
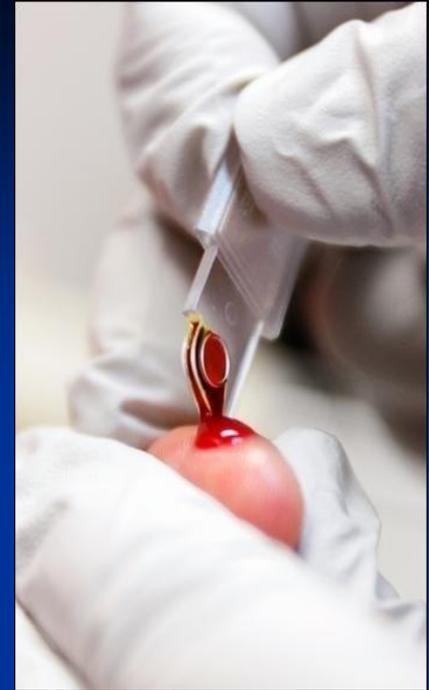
4) immunological infertility.

Diagnostics

- **inspection** - the severity of primary and secondary sexual characteristics, congenital or acquired pathology of genitals;
- **anamnesis** - having common severe debilitating (sepsis, diabetes, etc.), inflammatory diseases (prostatitis, epididymitis, orchitis, etc.);



- Clinic of blood and urine;
- bacteriological analyzes of secretions and excretions genitals;
- definition of hormonal and immunological changes;
- conducting X-ray examination of genitals (genitography);
- testicular biopsy;
- determining the level of sex chromatin and karyotype.



Treatment

- in the absence of an effective integrated program, as well as common criteria evaluation of results of treatment of male infertility still remains a challenge;
- the most appropriate method of treatment - a multistage, individual plans, taking into account the etiologic and pathogenetic features.

Common therapeutic activities include:

- adherence to diet ;
- adherence sexuality ;
- elimination of occupational and household hazards;
- normalization of work and rest;
- appointment therapeutic exercise ;
- normalization function of organs involved in hormonopoiesis ;
- use of sedatives ;
- treatment of opportunistic diseases ;
- medication :
- ✓ drugs that directly affect the mitotic stage of spermatogenesis (Clostilbegyt, Clomiphene);
- ✓ drugs that directly affect the meiotic stage of spermatogenesis (Testenat , Methyltestosterone);

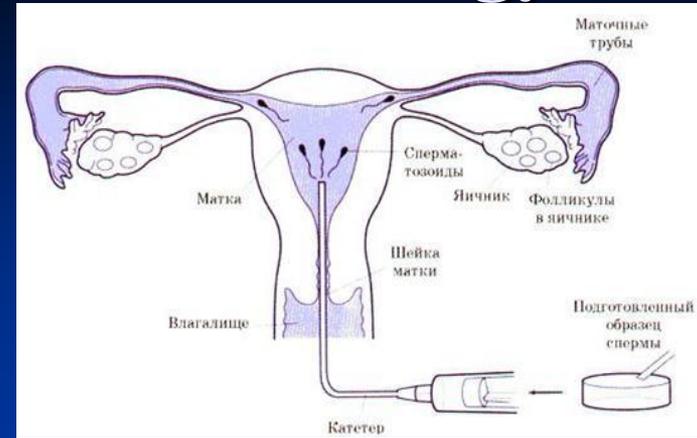
- for persistent oligozoospermia with satisfactory functional performance of sperm and normal reproductive function at the wife is performed therapeutic insemination using the husband's sperm during ovulation, when unsatisfactory performance of sperm- donor sperm is used;
- with persistent infertility is not treatable, advised to adopt a child or turn to assisted reproductive technologies.

Assisted reproductive technology

- Standard procedure for in vitro fertilization embryo transfer into the uterine cavity;
- transfer of gametes, zygotes and embryos to the fallopian tubes;
- gametes for micromanipulation for the treatment of male infertility (ICSI partial dissection shiny areas, the introduction of sperm under a brilliant zone egg, etc.)
- ART using donor eggs and embryos;
- surrogacy;
- cryopreservation of sperm, oocytes and embryos;
- artificial insemination by sperm of husband or donor.

Assisted reproductive technology

- artificial insemination;



- fertilization in vitro;



- ICSI technique;



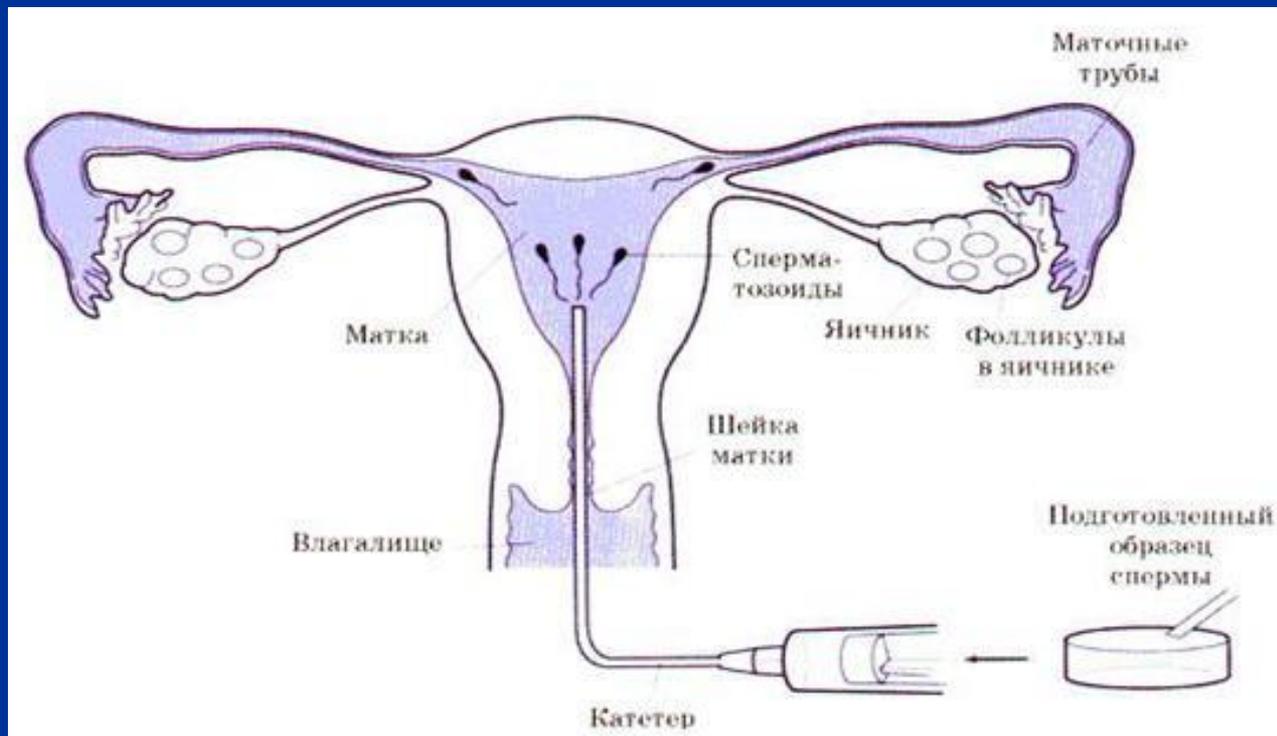
Standard survey before applying ART:

- history;
- comprehensive gynecological examination;
- colposcopy with cytology;
- analysis and bacteriological examination of discharges from the vagina and cervical canal;
- screening for sexually transmitted infections ;
- fluorography;
- Pelvic ultrasound;
- metrosalpingography;
- complex hormonal examination (prolactin, FSH, LH, testosterone, estradiol, cortisol, thyroid hormones, etc.);

- basal body temperature chart for the last 2-3 cycles;
- immunological examination (test sperm contact with the mucus of the cervical canal, MAR-test direct and indirect, the study of sperm antibodies, etc.);
- practitioner's report on the possibility of pregnancy;
- X-ray examination of the sella turcica region (elevated levels of prolactin);
- endoscopic (laparoscopic and hysteroscopy);
- comprehensive survey of partner (semen in dynamics, screening for STIs, fluorography, consultation of andrologist etc.)

Artificial insemination

- the most common method of assisted reproduction, consisting in the instrumental introduction of semen into the vagina, cervix, uterus, is used mainly intrauterine insemination with husband or donor.



indications

- Artificial Insemination by Husband:
 - ✓ hypospadias urethra;
 - ✓ impotence;
 - ✓ lack of ejaculation;
 - ✓ oligospermia with preserved normal motility;
 - ✓ vaginismus and malformations of the vagina;
 - ✓ immune aggression of mucus of the cervical canal.
- Insemination with donor sperm:
 - ✓ oligoastenospermiya III degree;
 - ✓ azoospermia;
 - ✓ hereditary diseases with a high probability of the birth of a sick child.

In vitro fertilization

- transfer of embryos into the uterine cavity



Indications:

■ female infertility :

- ✓ absolute tubal infertility (no tubal or obstruction) ;
- ✓ infertility caused by endometriosis (with no effect on drug therapy) ;
- ✓ endocrine sterility with no effect on other treatments ;
- ✓ unexplained infertility with no effect on the AIH (for 6 cycles) ;
- ✓ infertility due to cervical factor , in the absence of treatment effect by AIH (for 6 cycles) ;
- ✓ infertility caused by the absence or deficiency of functional ovaries or uterus (in this case, the program will include the use of IVF donor eggs , embryos or surrogacy program ;

■ male infertility :

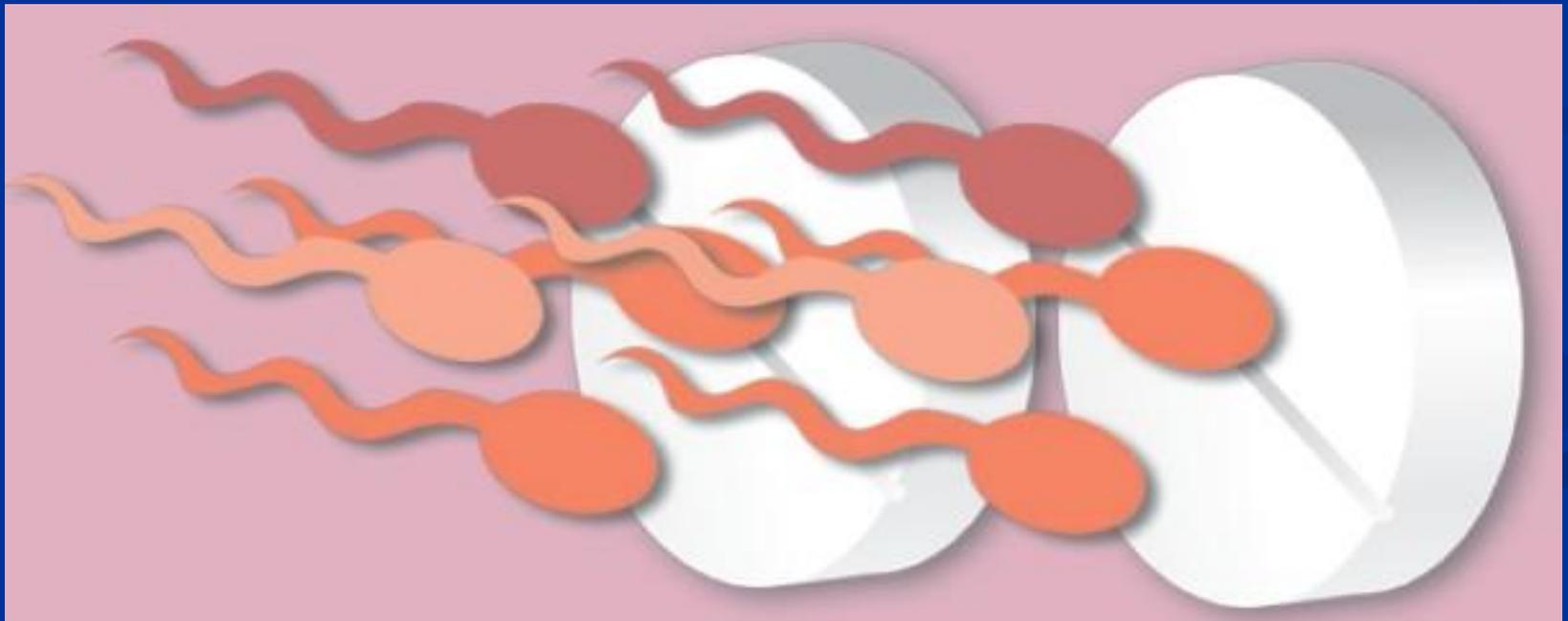
- ✓ oligoasthenospermia grade I-II in case of impossibility or inefficiency of AIH .

Methodology ICSI

- Intracytoplasmic sperm injection, used for serious violations of spermatogenesis.



Contraception - preventing unplanned pregnancy, one of the components of family planning.



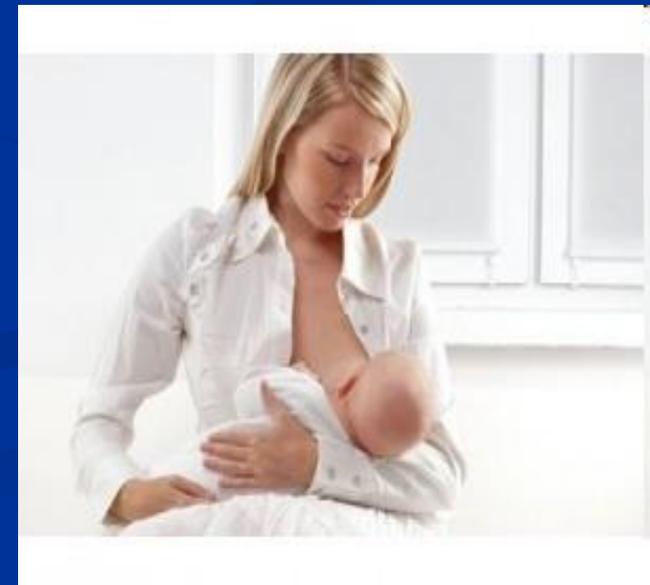
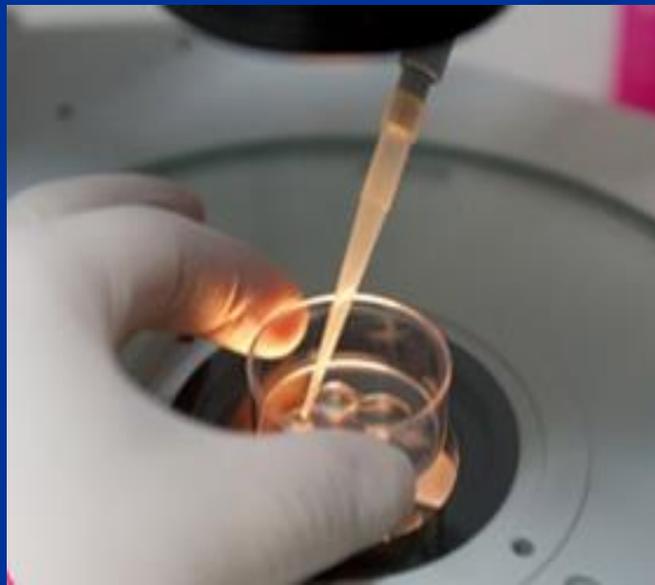
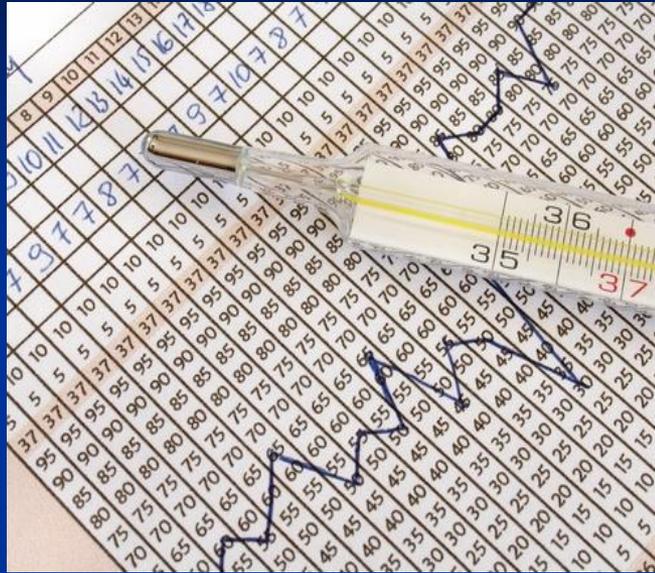
Barrier methods of contraception and spermicides

- condoms (male and female), diaphragms, caps, sponges, spermicides;
- prevents the penetration of sperm into the vagina or cervix mechanically, chemically or by combination thereof.



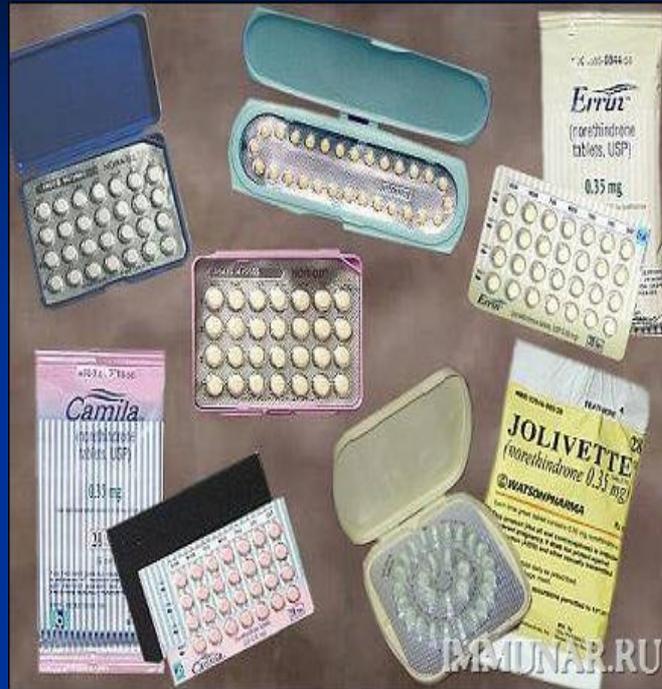
Natural Family Planning Methods

- calendar, temperature, cervical, symptothermal, LAM;
- general principle - control over a physiological recognition of ovulation and menstrual cycle phases in which the fertilized unlikely.

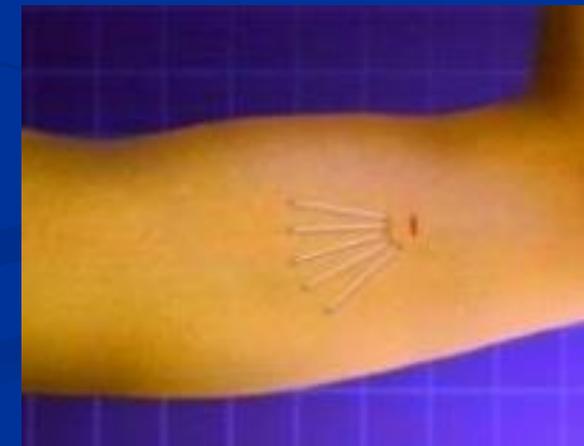


Hormonal contraception

- preparations containing estrogens and progestogens, having effects including inhibition of ovulation;
- OC (monophasic, biphasic, three phase, clean progestins) IC (combined, containing estrogen and progestogen component, containing only progestogens) subdermal implants ("Norplant").



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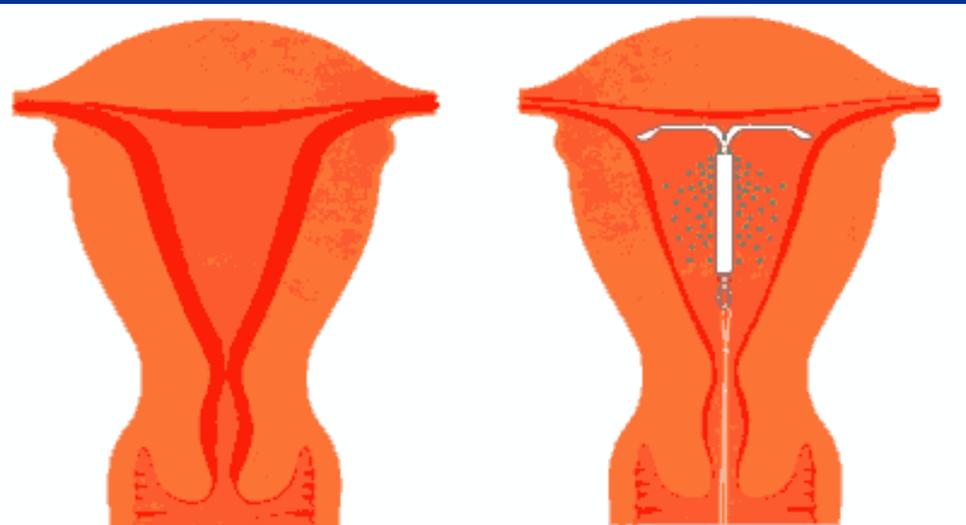
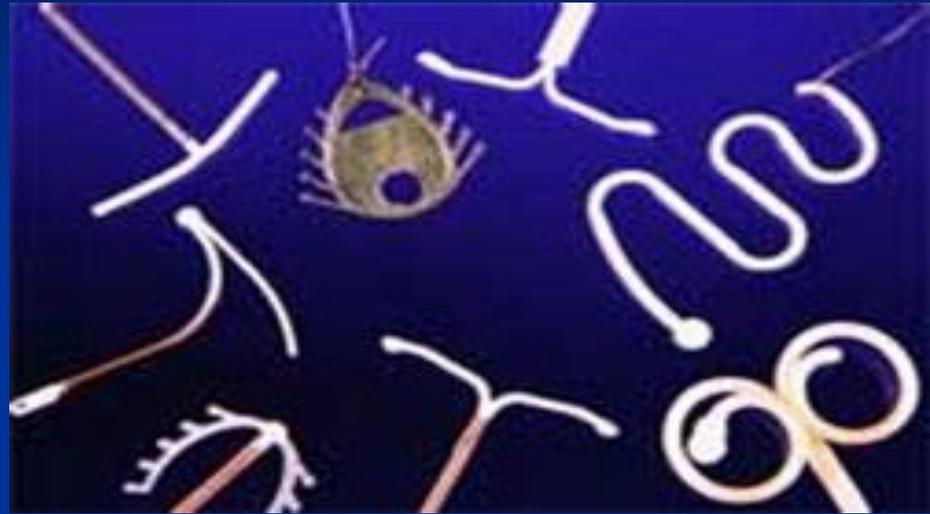
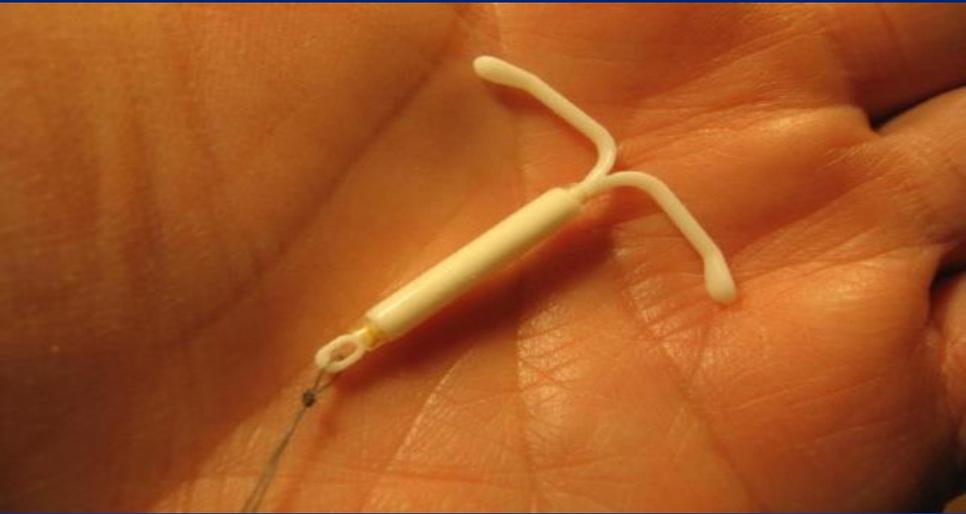
Hormonal contraception

- combined hormonal patch Evra
- combined hormonal ring NuvaRing



Intrauterine

- disrupt the implantation of a fertilized egg



Emergency (postcoital) contraception

- collective concept, which is based on the principle of the use of various forms of contraception during the first days after unprotected intercourse to prevent pregnancy.



Voluntary surgical sterilization

- female - is to block the fallopian tubes (ligation, or intersection, clamping rings, straps, coagulation);
- male - vasectomy (excision of the vas deferens)

