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Histological Changes of Bladder Tissue in Cystitis

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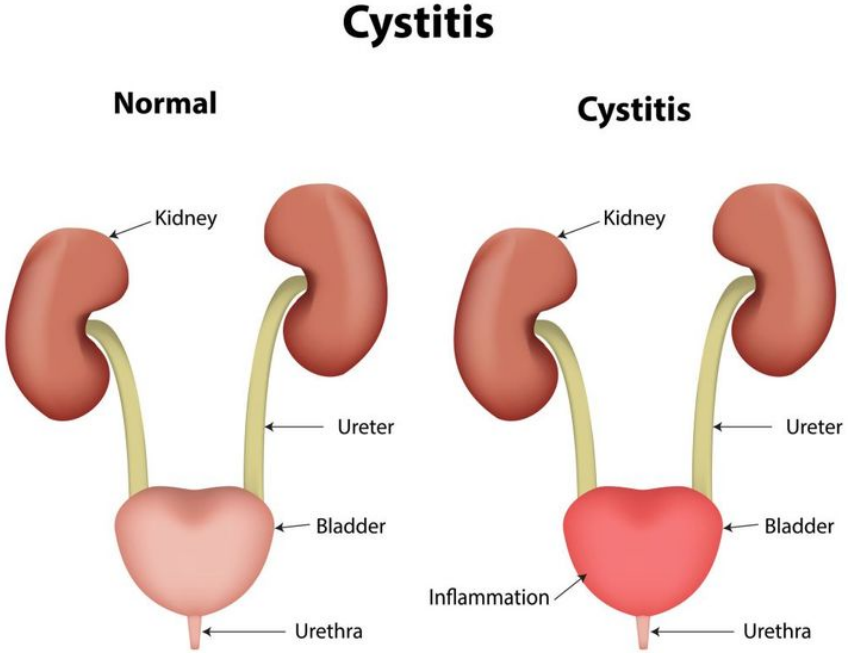
Abstract: Cystitis is an inflammation of the urinary bladder mucosa, commonly caused by infections, chemical irritants, trauma, or autoimmune conditions. In this condition, significant histological changes occur in the bladder wall. These include hyperemia (dilation of blood vessels), edema, and infiltration by inflammatory cells such as lymphocytes, neutrophils, and plasma cells. The epithelial layer often shows degenerative and dystrophic changes. In severe cases, purulent necrosis, inflammatory infiltrates, microabscesses, and increased fibroblast activity leading to connective tissue proliferation can be observed. In chronic cystitis, the bladder wall becomes thickened, with fibrous connective tissue growth in the submucosal layer and persistent lymphoid infiltration.

Keywords: inflammation, pathogenesis, tissue, gestational period, infection, mucous membrane, epithelium.

Introduction: Both men and women can suffer from cystitis, but it is more common in women due to the unique structure of the body. This is because women have a much shorter urethra than men, and there are fewer obstacles for infection to reach the bladder.



1. picture Manifestations of cystitis

Depending on the course of the disease, two types of cystitis are distinguished: The causes of cystitis are different, and depending on them, the developing inflammation can be classified as follows.

Acute cystitis can occur due to hypothermia, i.e. hypothermia, its symptoms. Painful frequent urination, unpleasant sensations in the genitals, anus, between the thighs, darkening of the urine color (this occurs due to the presence of leukocytes, mucous and bladder cells in the urine, as well as bacteria), high body temperature.

Chronic cystitis is usually secondary, its symptoms are also observed in acute cystitis, but are less pronounced. Non-specific (caused by pathogenic microflora - staphylococcus, candida, klebsiella, enterobacteria, protea, etc.), specific tuberculosis or sexually transmitted diseases, for example (caused by syphilis, chlamydia, ureaplasmosis).

In addition, doctors distinguish the following. post-radiation type, which occurs after radiation therapy. interstitial type, in this type of cystitis, the entire bladder is damaged, scarring occurs in the tissues of the bladder wall.

Main part: Cystitis can occur for various reasons, according to which the disease is divided into bacterial and non-infectious types. In bacterial cystitis, there are four ways for the infection to enter the bladder: 1. Descending path (passes through the inflamed kidneys); 2. Ascending path (infection enters from the external environment); 3. Lymphogenous (transmitted through the lymphatic vessels, from unhealthy genitals); 4. Hematogenous (enters the organ through the bloodstream). Non-infectious causes of cystitis are: allergies, manifested by inflammation of the bladder tissues; disorders of the immune or nervous system; chemical burns (injection of drugs into the bladder not prescribed by a doctor, as well as due to the carelessness of medical personnel or the patient); radiation therapy of the lower abdomen and genital areas. Factors that indirectly affect the development of cystitis: inactive lifestyle; hypothermia (cooling); uncomfortable underwear; constant change of sexual partners and refusal of contraceptives; neglect of personal hygiene; diseases of internal organs; fatigue, hypovitaminosis; impaired bladder emptying; decreased immunity; foreign bodies in the urinary bladder; catheterization, urethroscopy. Symptoms of cystitis in women and men Cystitis is manifested in the following symptoms in men and women: increased body temperature; feeling unwell, fatigue; unpleasant or painful sensations during urination, which increase towards the end; a feeling of frequent urination; pain in the bladder area; a feeling of incomplete emptying of the bladder, which occurs immediately after going to the toilet; cloudy urine (sometimes with blood); discharge from the urinary tract during urination; menstrual disorders in women.

Diagnosis of cystitis involves laboratory and clinical examinations. The doctor collects anamnesis, palpates the patient's abdomen (pain is felt during this) and prescribes: a general urine test (to study its color, density and other parameters); a general blood test (to determine signs of inflammation - an increase in the erythrocyte sedimentation rate or an increase in the number of leukocytes); a biochemical blood test (to determine the level of salts, proteins and nitrates in the blood); bacteriological examination to determine the sensitivity of bacteria that cause cystitis to drugs; UTI (candidiasis, mycoplasmosis, trichomoniasis, ureaplasmosis, gonorrhea, gardnerellosis, chlamydia).

Uroflowmetry. ultrasound examination of the kidneys, bladder; urological examination; Cystoscopy biopsy. A tube with a camera attached to the bladder is inserted into the urethra, after which a piece of bladder tissue is removed for examination. Diagnosis and treatment of cystitis is carried out in urological medical centers. How and what to treat cystitis

To prevent the spread of infection in cystitis, the patient is prescribed antibiotic drugs. The optimal course of taking the drugs is from three to seven days. Most of all antibiotics from the fluoroquinolone group are effective against most bacteria. Other drugs are less effective.

If cystitis is accompanied by severe pain, the patient is prescribed painkillers such as No-shpa, Baralgin, Papaverine, Nimesil, Diclofenac.

Preparations based on plants and their parts are used in the treatment of cystitis to increase urine production (i.e., for a diuretic effect). Pharmacies sell such industrially produced drugs as Cyston, Fitolizin, Kanefron.

Since the treatment of the disease largely depends on the state of immunity, the following drugs are prescribed to increase it:.

2. picture Symptoms.

People at risk of developing cystitis include: young women who have recently started having sex; women at any stage of pregnancy; women in menopause; those over 60; those with diabetes; women who use a contraceptive diaphragm and have anal sex at the same time.

Prevention of cystitis To reduce the risk of developing urinary tract infections and cystitis, doctors recommend the following: going to the toilet on time; avoiding excessive hypothermia, choosing clothes appropriate for the weather; constantly and correctly following personal hygiene rules; women are advised to change tampons and diapers on time during menstruation; using neutral and mild detergents for intimate hygiene; drinking enough fluids per day, at least one and a half liters; carefully choosing underwear made of natural and high-quality fabric according to size; following a proper diet and regimen; not drinking alcoholicbeverages.

Conclusion

In cases of acute and chronic cystitis, a number of morphological changes are observed in the histological structure of the bladder mucosa. Basically, desquamation, degenerative-dystrophic

processes and accumulation of inflammatory infiltrates (lymphocytes, neutrophils, plasma cells) are observed in the epithelial layer. In the submucosal layer, regenerative and fibrotic processes are detected, which are manifested by capillary dilation (hyperemia), tissue edema, microabscesses and purulent infiltrates, as well as activation of fibroblasts.

In cases of chronic cystitis, thickening of the bladder wall, development of fibrous connective tissue and persistence of lymphoid infiltrates indicate the duration of the pathological process. These histological changes serve as an important diagnostic criterion in determining the pathogenesis of the disease, its stage, as well as in determining effective treatment and rehabilitation tactics.

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