

MODERN DIAGNOSIS , EPIDEMIOLOGY AND TREATMENT OF DONOVANOSIS

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Annotation: Donovanosis is a chronic infection that occurs with progressive granulomatous-ulcerative lesions of the anogenital region. A characteristic element is a pre-venous ulcer filled with granulation tissue. Among the foci of extragenital localization, there are lesions of the oral cavity, facial skin, trunk, and limbs. It is possible to develop a generalized infection. The diagnosis is confirmed by laboratory examination (ulcer biopsy with microscopy). Treatment is carried out with the help of local and systemic antibiotics, sometimes plastic correction of skin defects is required.

Key words: cavity, facial skin, trunk.

Donovanosis (venereal / inguinal granuloma, fifth venereal disease) is an endemic STI characterized by ulceration of the skin of the genitals and perianal area. For the first time about the "serpiginoid ulcer of the genitals", common among the population of India, was reported by British doctors in 1882. The disease got its modern name after the Irish bacteriologist Ch. Donovan – the discoverer of the causative agent of infection. In the structure of venereal diseases, inguinal granuloma occupies about 1.5%.

Causes of donovanosis

Characteristics of the pathogen

Venereal granuloma is a bacterial infection caused by the gram-negative bacillus *Klebsiella* (*Calymmatobacterium*) *granulomatis*, also called Donovan's body. The pathogen has a bean-shaped or oval shape, a length of 1-2 microns, a width of 0.6-0.8 microns. It has a well-defined capsule, mainly parasitizes in the cytoplasm of macrophages. Donovan's corpuscles are immobile, multiply by transverse division, and quickly die under the influence of acids.

Epidemiology

Donovanosis refers to anthroponosis. The gender distribution of cases varies from region to region, the ratio of men to women can range from 1:1 to 6:1. Infection of an adult occurs mainly through sexual contact, among children and the elderly, infection with venereal granuloma occurs in everyday life. The contagiousness of donovanosis is significantly lower than that of other STIs. Donovanosis is mainly distributed in tropical and subtropical countries: India, Africa, Australia, the Caribbean and Southeast Asia. In Europe and the United States, isolated imported cases are registered. Mostly sexually active people from 20 to 40 years are ill. Donovanosis often occurs in the form of co-infection with other sexually transmitted diseases (gonorrhea, chancroid, syphilis) and common infectious diseases (leprosy).

Risk factors

Conditions that contribute to the spread of donovanosis among certain population groups are::

- tropical climate (high humidity and temperature);
- unsatisfactory sanitary and hygienic living conditions;
- promiscuous sexual contact without using barrier contraceptives;
- individual susceptibility to inguinal granuloma;
- visiting endemic countries.

Pathogenesis

Klebsiella granulomatis penetrates through damaged mucous membranes and skin, causing a local inflammatory reaction. First, a papule appears at the site of the insertion of Donovan's Taurus, which then ulcerates. The ulcer gradually increases in size, becomes covered with granulations. In 90% of cases, donovanosis affects the genitals, in 10% - the groin area, 5-10% – the perianal area, in 1-5% of patients there are extragenital lesions.

Histological examination of the pre-cancerous ulcer reveals accumulations of fibrin and polymorphonuclear leukocytes in the surface layers, and pseudoepitheliomatous hyperplasia of the epidermis in the periphery. Granulomatous infiltration of the dermis is determined, represented by plasmacytes and histiocytes, microabscesses are detected. Donovanosis is characterized by the presence of macrophages containing intracytoplasmic inclusions – Donovan's corpuscles.

Taking into account the clinical manifestations in practical venereology, there are several forms of donovanosis:

1. Ulcerative. It occurs in most cases. Characteristic signs are the "creeping" growth of pre-cancerous ulcers, the formation of vegetation. Varieties of ulcerative form: ulcerative-vegetative, serpiginous-ulcerative, ulcerative-penetrating, scar-keloid.
2. Verrucose. It is characterized by the growth of ulcerative elements of pale pink warty (verruccose) granulations on the bottom. The exudate is scanty, serous-bloody, and when it dries up, a dense crust forms. The ulcer does not cause pain, it increases slowly.
3. Blooming. It is accompanied by the presence of massive red granulations covering the bottom and edges of the ulcer. Discharge from the ulcer is abundant, serous-purulent, with an unpleasant smell. Itching and sharp soreness of ulcers are characteristic.
4. Necrotic. The most severe form of donovanosis, which develops with secondary infection of primary elements. There is purulent-necrotic tissue decay, locally destructive ulcer growth with destruction of fascia and muscles. It is accompanied by regional lymphadenitis, lymphangitis, and a severe general condition. Generalization of the infection is possible.
5. Sclerosing. As the ulcer increases, sclerosis of the soft tissues of the genitals and perineum occurs. Stenosis of the urethra, anus, entrance to the vagina, deformities of the genitals develop.
6. Mixed version. In this form, there are signs of different clinical variants.

Symptoms of donovanosis

The incubation period can last from a few days to 3 or more months (on average, it takes 2-3 weeks). First, a small flat papule (sometimes a papulo – vesicle) appears on the skin or mucous membranes. After a few days, the nodule softens – a painless ulcer with uneven raised edges forms in its place. The bottom of the ulcer is grainy, has a bright red color. Discharge is often scanty, serous-sukrovichnoe or serous-purulent with a specific fetid smell.

Usually, the primary elements in donovanosis are located on the labia, clitoris, vagina (in women), on the head of the penis, foreskin, scrotum (in men). Also affected are the pubis, perineum, anus, inguinal folds, oral cavity, pharynx. Due to the transfer of secretions to other parts of the body, "daughter" ulcers may appear on the skin of the face, hands, shins, chest, and nasal mucosa.

Ulcerative defects slowly increase along the periphery, destroy the underlying tissues. When infected, the color of the ulcer becomes dirty gray, the discharge is purulent, the bottom is covered with necrotic masses. The surrounding skin is edematous, hyperemic. When spontaneous healing occurs, rough scarring and tissue deformation occur. In the groin area, pseudobubons are often identified – subcutaneous nodes that are not associated with the involvement of lymph nodes. Lymphadenopathy is absent or slightly expressed.

The general condition of donovanosis usually does not suffer, with the exception of the necrotic form of inguinal granuloma, in which fever, malaise, and intoxication syndrome are

expressed. With systemic donovanosis, metastatic foci occur in the middle ear, joints, bones, spleen, liver, and gastrointestinal tract.

Complications

Ulcerative and verrucous forms of donovanosis in 5% of cases are complicated by elephantiasis of the genitals. With the sclerosing variant, strictures of the urethra, vagina, anus, and penile phimosis often develop. Necrotic type of inguinal granuloma is accompanied by necrosis of the penis, labia, perineum. Possible formation of vaginal rectal fistulas, the development of septic cystitis.

In the case of generalization of the infectious process, the disease often ends in sepsis and death. It is believed that chronic pre-venous ulcers are a favorable background for the development of squamous cell carcinoma of the skin.

Diagnostics

The diagnosis of donovanosis is established on the basis of epidemiological data (visits to tropical countries, unprotected sex), the results of a clinical examination, and laboratory data. A patient with suspected inguinal granuloma is referred to a venereologist. All sexual partners of the patient are also subject to examination.

To confirm the diagnosis, a puncture biopsy of the ulcerative focus is performed. Microscopy of Giemsa or Wright-stained smears reveals Donovan corpuscles in large macrophages. In order to exclude other STDs that may occur together with donovanosis, a blood test for HIV, treponemal tests, and a smear for gonorrhea are performed.

Differential diagnosis

First of all, other classic venous diseases require exceptions: primary syphilis, chancroid, inguinal lymphogranulomatosis. Differential diagnosis with infections that cause ulceration and elephantiasis of the genital area is also necessary.:

- tuberculosis of the skin;
- genital warts;
- squamous cell carcinoma;
- filariasis;
- amoebic balanoposthitis, vaginitis.

Etiotropic therapy of inguinal granuloma is based on the use of antibiotics. Systemic antimicrobials from the groups of aminoglycosides, macrolides, tetracyclines, and sulfonamides are used. The course is continued until complete epithelialization of ulcers. Local treatment is also carried out: treatment of ulcerative elements with antiseptics, application of antibacterial powders.

Surgical treatment

Surgical methods are used for the development of crippling complications. Scar excision and plastic surgery are performed, reconstructive genital plastic surgery for elephantiasis, autodermoplasty, etc. With stenotic complications, the urethra, vagina, and rectum are boosted. If these measures are ineffective, more radical operations are indicated: urethrotomy and urethroplasty, vaginoplasty, anoplasty.

Prognosis and prevention

No cases of self-healing from donovanosis have been reported. With timely and completed treatment, a persistent focus of depigmentation remains at the site of healed ulcers. In advanced cases, there are crippling complications: extensive skin necrosis, elephantiasis, rough scars, violation of the normal anatomy of organs. Prevention of donovanosis consists in refusing casual sexual relations, using barrier contraception, and mandatory examination after unprotected sex.

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