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ANGULAR CHEILITIS AS A POLYETIOLOGICAL PATHOLOGY

АНГУЛЯРНИЙ ХЕЙЛІТ ЯК ПОЛІЕТІОЛОГІЧНА ПАТОЛОГІЯ

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Angular cheilitis (also termed perleche, cheilosis, or angular stomatitis or angulus infectiosus) was first described by a French doctor by Dr. Lemaistre (Lemaistre, 1855), who called this disease «perlèche», from the French word «pourlècher» (to lick one's lip). Currently, we use the term angular cheilitis both in the dental and dermatovenerological literature [1, p. 1107-1115].

Clinically, this is a frequent condition characterized by mucosal-to-cutaneous lesions with erythema, maceration, fissures, and crusting at the corners or in one or both adhesions. Pathogenesis is often multifactorial [2, p. 220]. A unilateral lesion is usually short-lived and most often due to local trauma. Bilateral involvement is often chronic and suggests an anatomic abnormality with excessive mouth closure, irritant reactions, infections, inflammatory dermatoses, and/or nutritional deficiencies [3, p. 555-560].

The most complete classification was proposed by Ohman and colleagues in 1986. According to this classification, four types of the disease are distinguished: I type – small rhagades limited to the corner lips with slight skin involvement, II type deeper and more extensive lesions with uneven borders, III type – several rhagades extending from the lip corners into the

perioral skin, IV type – a diffuse erythema spread in the skin surrounding the vermilion border [4, p. 213-217].

The etiology of angular cheilitis is extremely diverse, with many local and/or systemic causes. The influence of certain etiological factors affects the first appearance and recurrence of the disease. Clinical experience shows that there is a group of risk factors for the occurrence of angular cheilitis: anatomical features of the structure of the lips (saliva stasis in the corners of the mouth), overclosure of the teeth predisposes to pooling of saliva at the commissures, toothless jaws and incorrectly defined bite, ill-fitting dentures, malocclusion of the natural teeth, inadequate support of the lips, reduced occlusal vertical dimension, formation of static marionette lines with aging, habitual lip licking, thumb sucking, lip biting, weight loss, smoking, mouth breathing [5, p. 289-295]. A group of orthodontic patients who have manifestations of lesions in the corners of the mouth can be singled out separately. This can be provoked by iatrogenesis, and as a result of an allergic reaction to nickel in some alloys of brackets. Therefore, such patients need treatment with metal-free systems or alternative metal ones. Iatrogeny also occurs after some surgical interventions, such as tonsillectomy [6, p. 80-86].

One of the main etiological factors of angular cheilitis is microbial. Fungal and bacterial flora is found in most clinical cases. *Candida albicans*, *Streptococcus aureus* and *Streptococci* are the main microbial agents in angular cheilitis. Moreover, the fungal flora has been cultivated since the 1920s. According to various studies, from 43 to 93% of patients have AS with the presence of pseudohyphae and yeast. However, a combination of bacterial or candidal infection (primary or secondary) is common. In children, especially with atopic dermatitis, secondary bacterial infections (staphylococcal and beta-hemolytic streptococcal) most often affect the damaged corners of the lips. Perleche with secondary infections is also common in patients with macroglossia (congenital hypothyroidism) [7, p. 569].

Orem, attention should be paid to nutritional deficiencies: deficiency of riboflavin (B2), niacin (B3), pyridoxine (B6), biotin (B7), folic acid (B9), cyanocobalamin (B12), some trace elements – zinc and iron. This is especially true in developing countries, as it can be one of the signs of malnutrition [8, p. 796-798].

Some diseases that lead to xerostomia may in the future provoke the occurrence of angular cheilitis, Sjogren's syndrome, diabetes, radiation therapy of the head and neck, neoplasms of the salivary system, neurological disorders, medications [9, p. 47-49].

Medicines very rarely directly cause angular cheilitis. However, drugs more often cause hyposalivation (for example, anticholinergic drugs) or exfoliative cheilitis, thus contributing to the development of angular cheilitis. Paroxetine, tetracyclines, and metronidazole can easily provoke damage to the corners of the mouth. In addition, when taking isotretinoin, the fragility of the skin changes, which can cause *Staphylococcus aureus* [1, p. 1110-1112]. It is

also worth mentioning the biological agent secukinumab, which may be responsible for persistent forms of AS due to its ability to suppress the proliferation of keratinocytes and differentiation [11, p. 37-40].

A number of genetic diseases can provoke the occurrence of angular cheilitis: Down's syndrome, autoimmune bullous diseases, orofacial granulomatosis, Crohn's disease [12, p. 79-80]. Recent studies will show that electronic cigarettes are important in the pathogenesis of some forms of angular cheilitis [13, p. 37-40].

With the difficulty of determining the etiology of angular cheilitis, one should not forget about patients with mental disorders (for example, a lip injury in bulimia or anorexia nervosa). And also take into account the state of the immune system, since fungal lesions occur against the background of immunodeficiency states (for example, HIV infection). One of the syndromes is characterized by several manifestations in the oral cavity, including angular cheilitis – Plummer-Vinson syndrome – atrophic glossitis, esophageal webs or strictures, and microcytic hypochromic anemia.

Differential diagnosis of this type of cheilitis includes recurrent labial herpes (if the lesion is unilateral) and secondary syphilis (shaped papules in the corners of the lips, similar to cheilitis), impetigo, irritant cheilitis (lip licking dermatitis), actinic cheilitis, allergic contact cheilitis, perioral dermatitis, wart vulgaris, squamous cell carcinoma [14, p. 348].

Therapy is aimed at eliminating provoking and etiological factors. Bite height correction, high-quality orthopedic treatment and complete rehabilitation of the oral cavity are the keys to success. In the first visits, it is necessary to prescribe barrier agents based on fat to avoid constant mechanical irritation. Normalization of salivation by treatment of hyposalivation and xerostomia is a necessary condition for normalization of oral pH and physiological suppression of fungal flora and normalization of oral microbiota. Antifungal and antibacterial drugs should be prescribed only after a microbiological study and determining the sensitivity of microorganisms. If patients have an immunosuppressive condition and resistance to local therapy, it is necessary to prescribe systemic antifungal drugs [15, p. 10]. The persistent course of angular cheilitis suggests that the patient should be examined for serious systemic disease, including diabetes and Crohn's disease, HIV infection, psoriasis, atopic dermatitis, and malignant neoplasms. Prevention is possible when there are risk factors for the development of a fungal infection (for example, long-term antibiotic therapy) [16, p. 230-242].

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