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Atopic Cheilitis: clinic, diagnosis, differential diagnosis, treatment, prevention

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Atopic cheilitis (AC) is a hereditary disease with a chronic recurrent course, which changes in dynamics according to the age of patients, which leads to significant difficulties in timely diagnosis. AC is a peculiar local manifestation of atopic dermatitis or neurodermatitis.

The most obvious clinical signs of the disease are manifested in childhood and adolescence, which leads to a deterioration in the quality of life (the appearance of patients suffers, severe itching distracts from studying or work, psychological state leads to social withdrawal). That is why accurate diagnosis of this disease and effective comprehensive treatment of AC is a current task of therapeutic dentistry. However, despite the importance of this problem, in recent years there has been an insufficient number of publications dedicated to the study of this pathology [1-8], which indicates that only some enthusiasts are currently engaged in these issues.

AC develops in the first year of life. This disease is characterised by multifactorial causation: impaired skin barrier function, immune dysregulation, the effect of environmental factors and infectious agents. Impaired skin barrier function is associated with a disruption of the filaggrin gene, which encodes the synthesis of a structural protein necessary for the formation of the skin barrier. There were also found insufficient amounts of ceramides and antimicrobial peptides, which normally are the first barrier of defence against infectious agents, in the skin of these patients, And in AC these abnormalities lead to transdermal water loss (skin dryness) and increased penetration of microorganisms and allergens into the skin. AC can be a primary lesion of the skin barrier (the first link of the «atopic march»), which creates conditions for the development of other atopic diseases (allergic rhinitis, asthma, food allergy). An important role in the development of AC in children belongs to sensitisation to food products, as well as household allergens (house dust mites, down pillows, pet epidermis, fungi) and with adulthood, the further expansion of causal allergens and the formation of polyvalent allergies is noted. Allergens can most often be food products, microorganisms, medicines, dental materials.

Risk factors for AC are exudative diathesis, diseases of the gastrointestinal tract against the background of malabsorption syndrome (which is a consequence of undiagnosed celiac disease or lactase deficiency with damage to enterocytes and deficiency of the enzyme diamine oxidase, in which there is a very high level of histamine in the blood and persistent itchy rashes on the skin), intestinal dysbiosis, streptoderma, helminthic invasion, skin barrier disruption and Staph. aureus colonisation. Development of an isolated form of atopic cheilitis is caused by nasal breathing disorders, a long period of nipple sucking, bad habits, jaw and dental abnormalities. Seasonal exacerbation of the disease is noted (more often in autumn and spring).

Clinical picture. AC is characterised by age-related phasing of the course.

I – infantile: manifests itself in the first months of life – up to the age of 2, with bright, not very typical spotted-papular (eczema-like) rashes on the skin of the face, more often on the cheeks.

In the affected areas, on the surface of the plaques, the integrity of the epidermis is disturbed and areas similar to eczematous wells appear, with wetting, scales and crusts, which is often perceived as exudative diathesis, eczema or seborrheic dermatitis.

II – childhood: from 1.5-2 years - to 11-12 years, when erythematous -edematous papules that have merged into large foci transform into lichenoid papules and foci of lichenification on the skin of the perioral region. Along with this, foci of lichenification can be noted on the lateral surfaces of the neck, chest, elbow and popliteal folds with scratches.

Typical complaints include itching, tightness, dryness, peeling, cracks in the red border and skin of the lips, pain when talking and eating.

With AC, the red border and skin of the lips are affected, especially in the corners of the mouth. The process never spreads to the mucous membrane. Exacerbation of AC is manifested by severe itching, redness and slight swelling of the red rim of the lips with simultaneous inflammation of the adjacent skin areas of the face and mandatory lesion of the corners of the mouth, with infiltration, dryness, peeling and formation of cracks. After the subsidence of acute inflammatory phenomena, the red border is infiltrated, exfoliates with small scales, thin radially arranged grooves are formed on its surface.

In case of disseminated neurodermatitis, on the background of dry, scaly skin of the face, fine lamellar (bran-like) peeling of the red border and the skin of the lips with the formation of whitish scales is noted. Blurring of the clear border of the skin and a red border is often noted. Swelling of lip tissues is possible, which is accompanied by vertical folds that pass from the red border to the mucous membrane and skin. The skin in the corners of the mouth is infiltrated, with cracks, crusts that can become pigmented.

III – adolescent and adult: from the age of 12 is characterised by lichenification foci of red-bluish colour and itching of varying intensity.

The course of AC can be complicated by coccal (S. aureus), recurrent viral infection, or molluscum contagiosum.

Diagnostic criteria of AC. *Major criteria:* itching, cheilitis, typical localisation according to the age, chronic relapsing course, allergic diseases in the history of the patient and close relatives.

Minor criteria: onset in early childhood, dry skin, palmar ichthyosis, nonspecific hand dermatitis, recurrent conjunctivitis, darkening of the periorbital folds, anterior cataracts, eyelid dermatitis, white dermographism, increased itching with sweating skin, food intolerance, wool intolerance, high IgE level.

Diagnosis of «Atopic cheilitis» is established in the presence of 3 or more major and 3 minor criteria. There are no reliable biomarkers for the diagnosis of AC, but a high level of immunoglobulin E is detected, and when the material is cultured from the affected skin of the perioral region, Staph. Aureus superinfection is identified.

Differential diagnosis. Often, the diagnosis of AC is significantly complicated due to the similarity of this disease with diseases similar in individual symptoms. Therefore, a thorough clinical examination, deep knowledge of the disease signs and differential-diagnostic criteria with clinically similar lip lesions will help to prevent errors in diagnosis and prescribe adequate treatment for a patient with AC.

Most often, AC is diagnosed as ***eczematous cheilitis.***

Similar signs: chronic course with lesions of the red border, the skin of the lips with discolouration (limited erythema), layering (scales), defects (cracks), accompanied by itching and eosinophilia.

However, in AC, in contrast to eczematous cheilitis, there is lichenification of the skin of the perioral area – an emphasized pattern of the skin and symmetrical lesions of the mouth corners with cracks, while in ***eczematous:*** a characteristic polymorphic rash with blisters, crusts, wetting and the presence of so-called eczematous wells; there is no lip edema. Unlike atopic cheilitis, eczematous cheilitis affects middle-aged and older people, while AC is most pronounced in children and adolescents aged 7-19 years.

From exfoliative cheilitis, dry form. *Similar signs:* a feeling of discomfort in the lips,

dryness, roughness of the red border, scales on the lips.

But with exfoliative cheilitis, the lesion is localised only in Klein's zone and does not spread to the skin. The scales on the surface of the red border are small, and in case of exfoliative cheilitis they are large, «micaceous». Exfoliative cheilitis is not characterised by lesions of the corners of the mouth with cracks and itching; there is no eosinophilia, eosinophils are not detected in preparations-imprints from the surface of the red border.

From exfoliative cheilitis, an exudative form AC is distinguished by the absence of massive crusts on the red border (apron symptom), which are constantly layered and hang down to the chin; lesions of the red border and skin, and with exfoliative cheilitis, the lesion is localised only in Klein's zone and does not spread to the skin of the perioral area and the corners of the mouth.

From contact allergic cheilitis. *Similar signs:* itching and discomfort in the lips, the presence of eosinophils in preparations-imprints with lesions of the red rim of the lips. But, unlike allergic contact cheilitis, the development of AC is not related to the application of cosmetics on the red border, medicines or contact with chemical compounds at work.

AC does not develop quickly and does not have a rapid course; does not have significant inflammation of the red border, bright erythema, exudation, swelling of the lips and polymorphic rash.

With syphilitic sores in secondary syphilis. *Similar signs:* symmetry of lesions with cracks in the corners of the mouth.

Differences: with AC, there is no polymorphic roseolous-papular rash on other areas of the oral mucosa, oropharynx, tongue, or skin. With AC, itching is disturbing, while the course of syphilitic lesions is without subjective sensations. In AC, there is no infiltrate at the base of the cracks in the corners of the mouth. AC is not accompanied by polyadenitis.

AC is *distinguished* ***from actinic cheilitis*** by: absence of disease activation under the influence of solar radiation (and often – improvement of the course); lesions to both lips (and not only the lower one in case of actinic cheilitis); the same frequency of the disease among men and women (in actinic disease – mainly men are affected!); absence of vesicles, hyperaemia, edema; wetting of crusts; presence of perioral lichenification of the lip skin;

AC is distinguished ***from streptococcal angular cheilitis*** by: the absence of superficial pustular elements (flikten) in the affected area; symmetrical lesions of the corners of the mouth (streptococcal angular cheilitis is more often unilateral!); small scaly lesion of the outer part of the red rim of the lips and the adjacent skin with lichenification ; cracks in the corners of the mouth only on the skin and do not spread to the mucous membrane of the cheek; more often – teenage and young age of patients.

From the syndrome Plummer-Vinson, in which there is also lesions of the mouth corners (angular cheilitis) with painful cracks and reddening of the skin and pathology of the gastrointestinal tract, but there are no signs of anaemia: pallor of the oral mucosa and skin; atrophy of tongue papillae; dysphagia; impaired sense of taste; concave nail plates.

AC is distinguished ***from seborrheic dermatitis by the absence*** of maculo-squamous rashes in areas of the skin with the highest activity of sebaceous glands (hairy part of the head, face, upper body).

Treatment. The goal is to restore the barrier function of the skin. To do this, it is necessary to teach the patient optimal daily skin care (wash 1-2 times for 10-15 minutes with warm water, cleaning and moisturizing its surface, avoiding aromatic soap), carry out local anti-inflammatory treatment, as well as treatment of skin infections.

An important direction in the treatment of AC is the identification and elimination of causally significant allergens, dietary recommendations, correction of concomitant gastrointestinal and central nervous system pathology, and immunopharmacotherapy. Sanation of chronic foci of dental, especially periodontal, and ENT infections is an important component of complex treatment of AC, because complicated caries (pulpitis, periodontitis), gingivitis, generalised periodontitis, diseases of the oral mucosa of an infectious and

allergic nature contribute to the occurrence or exacerbation of the course of AC.

We give examples of clinical manifestations of AC.

It should be noted that even single lesions of teeth with complicated caries can aggravate the course of the disease or lead to exacerbations of AC. In order to diagnose complicated caries, such patients need to undergo X-ray examination of the dentition, periodontal tissues (orthopantomography) and their timely and high-quality treatment.

The orthopantomograms of patients with atopic cheilitis show examples of adequate root canal treatment in case of complicated caries (pulpitis and periodontitis).

The treatment tactics of AC include non-medicinal and medicinal measures. Non-pharmacological treatment of AC must be started at the first signs of the disease, and at this stage it may be sufficient to follow a hypoallergenic diet and keep a «food diary», in case of celiac disease, there are absolute indications for a gluten-free diet (at the same time, there is a rapid regression of symptoms), wet cleaning of the home.

Medicinal local treatment (first-line therapy aims to affect the main links of the pathogenesis of atopic inflammation, eliminate morphological changes and restore the barrier function of the lip skin) involves the application of emollients to dry skin (moisturisers,

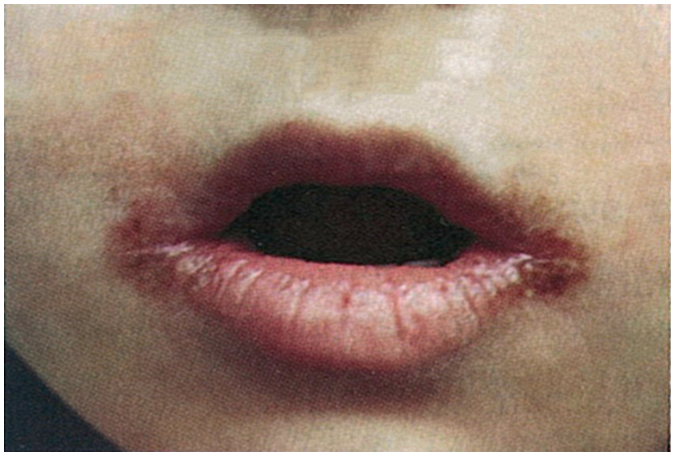

Fig. 1. *AC in a 4-year-old patient.*

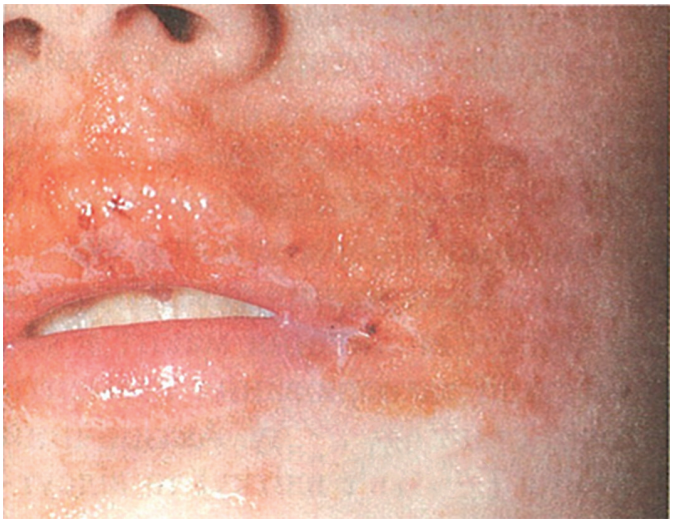

Fig. 2. *AC in a 13-year-old female patient.*

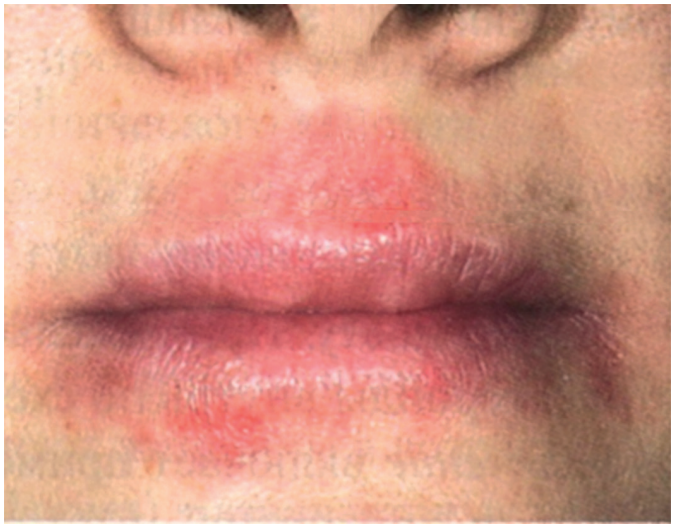

Fig. 3. *AC in a 19-year-old female patient.*

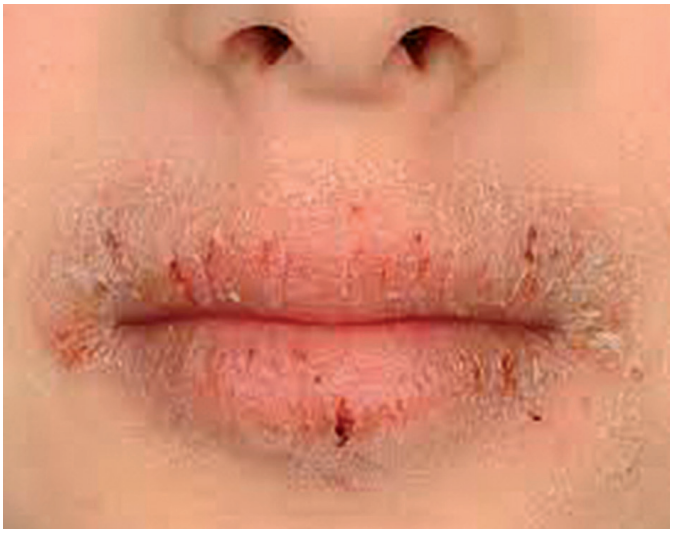

Fig. 4. *AC in an 11-year-old patient.*

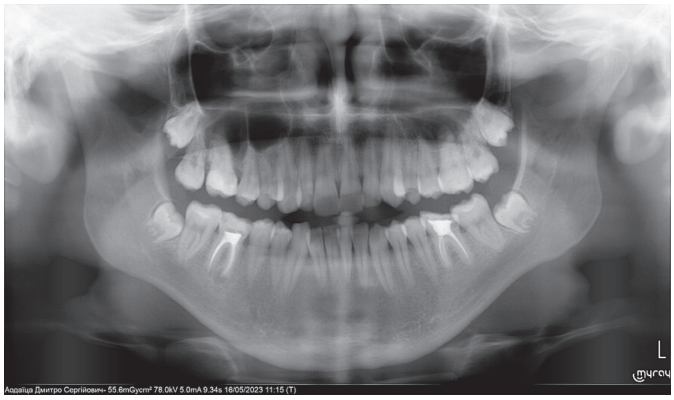

Fig. 5. Orthopantomogram of a patient with AC, 16 *years old. The root canals of 36 teeth were sealed due to acute purulent pulpitis, 46 due to chronic granulomatous periodontitis.*

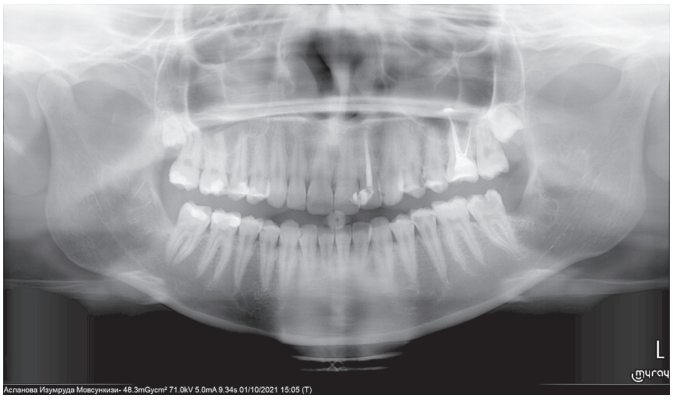

Fig. 6. *Orthopantomogram of a patient with AC, 14 years old. Root canals of teeth 22 and 26 were sealed due to complicated caries.*

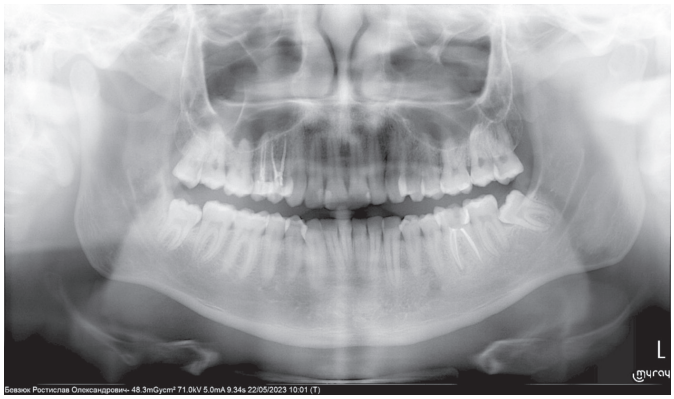

Fig. 7. *Orthopantomogram of an 18-year-old patient with AC. The root canals of teeth 14, 15 and 36 were sealed due to complicated caries.*

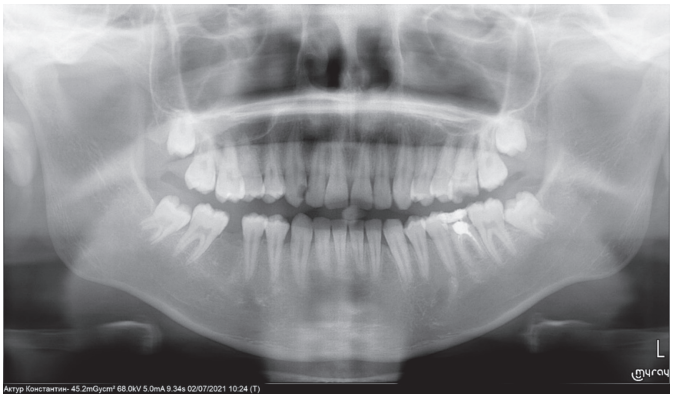

Fig. 8. *Orthopantomogram of a patient with AC, 15 years old. Endodontic treatment is necessary for chronic granulating periodontitis of teeth 13 and 36.*

emollients, milk), the use of membrane-stabilising agents (Zaditen), in case of exacerbation – emulsions, then creams of topical corticosteroids (betamethasone, dexamethasone, fusiderm, hydrocortisone, triamcinolone, advantan, diprosalic, laticort, flumethasone, elokrim, etc.). Depending on the severity of the clinical manifestations, ***a stepwise approach is used:*** if there is only dryness of the red border and skin without signs of inflammation – it is necessary to use moisturisers and emollients at least 2 times a day; in case of mild and moderate symptoms, topical corticosteroids of low or medium activity and/or the prescription of calcineurin inhibitors are required, in case of exacerbation and severe manifestations – corticosteroids of high activity, and in case of constant course or with frequent exacerbations – calcineurin inhibitors (pimecrolimus, tacrolimus). Systemic treatment – taking oral antihistamines of the 2nd generation (levocetirizine /Alerzin/ taking into account age: up to 1 year – 5 drops 1 time a day, 1-6 years – 5 drops 2 times a day, 6- 12 years – 20 drops 1 time a day) and calcium in case of itching with subsequent transition to second-line therapy – cyclosporine, a short course of corticosteroids plus phototherapy (ultraviolet irradiation). Since the skin of patients with AC is colonised by S. aureus, a short course (7-10 days) of antibiotic therapy is recommended in the presence of signs of secondary bacterial infection – cephalosporins of the first or second generation locally or systemically. In the treatment of painful cracks in the corners of the mouth and on the

lips, you should use the «Ryativnyk» («Rescuer») cream (active substances – dexpanthenol with chlorhexidine), which heals cracks, improves tissue turgor, moisturises the lips and perioral area, protects the lip tissues from drying and cracking. In case of cracks complicated by secondary infection, it is advisable to use «Panthestin» (active substances are dexpanthenol with miramistin).

Prevention. After remission is achieved, maintenance therapy with emollients and topical corticosteroids twice a week is necessary, which reduces the risk of relapse. Vitamin and sedative drugs are indicated.

It is necessary to sanitise the organs of the digestive system with the correction of the biocenosis of the intestinal microflora, often deworming. If necessary, consultation of a dermatologist, immunologist, psychiatrist (if depression, anxiety, suicidal intentions are noted) and other specialists.

Conclusion

The modern knowledge about AC summarised in the lecture will allow to improve the quality of training of dentists as on undergraduate level, as well as practical dentists-therapists in the postgraduate education system, and prevent or minimise diagnostic and treatment errors.

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ATOPIC CHEILITIS: CLINIC, DIAGNOSIS, DIFFERENTIAL DIAGNOSIS, TREATMENT, PREVENTION

O.F. Nesyn, K.E. Pechkovsky, I. M. Pechkovska

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АТОПІЧНИЙ ХЕЙЛІТ: КЛІНІКА, ДІАГНОСТИКА, ДИФЕРЕНЦІЙНА ДІАГНОСТИКА, ЛІКУВАННЯ, ПРОФІЛАКТИКА

О.Ф. Несин, К.Е. Печковський, І.М. Печковська

Атопічний хейліт (АХ) - спадкове захворювання з хронічним рецидивуючим перебігом, який змінюється в динаміці, відповідно до віку пацієнтів, що призводить до значних труднощів своєчасної діагностики. АХ є своєрідним локальним проявом

Here is described the clinic of AC according to the classification of age-related phases of the disease. The diagnostic criteria by which the diagnosis is made are given. A thorough differential diagnosis of AC with lip diseases similar in individual symptoms was carried out.

Even single lesions of teeth with complicated caries can aggravate the course of the disease or lead to exacerbations of AC. In order to diagnose complicated caries, such patients need to undergo X-ray examination of the dentition, periodontal tissues (orthopantomography) and their timely and high-quality treatment.

The orthopantomograms of patients with AC show examples of adequate root canal treatment in case of complicated caries (pulpitis and periodontitis).

The modern approach to complex treatment and the principles of AC prevention are described.

атопічного дерматиту чи нейродерміту.

Викладено клініку АХ за класифікацією вікової фазовості перебігу захворювання. Наведені діагностичні критерії, за якими виставляється діагноз. Проведена ретельна диференційна діагностика АХ з подібними за окремими симптомами захворюваннями губ.

Навіть поодинокі ураження зубів з ускладненим карієсом здатні обтяжувати перебіг чи призводити до загострень АХ. З метою діагностики ускладненого карієсу таким пацієнтам необхідно проводити рентгенологічне дослідження зубних рядів, тканин пародонта (ортопантомографію) та своєчасне і якісне їх лікування. На ортопантомограмах хворих на АХ наведені приклади адекватного лікування кореневих каналів при ускладненому карієсі (пульпіті та періодонтиті).

Описано сучасний підхід до комплексного лікування та принципи профілактики АХ.