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## **The main aspects of the clinic picture, treatment and prevention of caries and periodontal tissues of children patients with epidermolysis bullosa**

**Abstract:** Using the references listed below and the results of personal clinic observations, the plan of prevention and treatment of dental caries and periodontal tissues among the children patients with epidermolysis bullosa is suggested in this article.

**Keywords:** epidermolysis bullosa, vesicles, tooth decay, caries prevention.

**Introduction.** Epidermolysis bullosa is a rare genetic disease the main aspect of which is the emergence of vesicles with serous or hemorrhagic content in the skin and mucous membranes with minor trauma or spontaneously. Even friction or slight touch may become the reason of appearance of new elements of affection. The scientific base underlying the study of epidermolysis bullosa has a short history. A broad scientific implementation of the study of this specific disease started in the mid 90s of the previous century.

Different forms of epidermolysis bullosa are the result of recessive or dominant mutation of parental

genes. Dominant pathogenic adjustment may emerge during the maturation of sperm or egg, that is why even healthy parents may have a baby with epidermolysis bullosa. Due to disintegration and cytolysis keratinocytes, lesions of the epidermis, dermal connections, collagen fibrils disappearance in the papillary layer of the dermis there emerge internal epidermal and under epidermal vesicles, there appear erosive and ulcerative surfaces.

The symptoms of this disease may be revealed after the very birth of the child or in the first days of the child's life. Deformation and loss of nails appears as a result of the fact that fingers and toes are

traumatized most frequently, because of the natural activity of the baby. Wounds heal for a long time, and they are immediately replaced by scars and new vesicles. As a result of the wound healing there appears the accession of fingers and toes. In some forms of epidermolysis bullosa, vesicles may affect eyes, membranes of the nose that may result in eyesight problems and difficulty in normal breathing. Skin peeling, the appearance of vesicles on the skin scull, loss of hair due to destruction of hair follicles are the widespread symptoms of epidermolysis bullosa. It is very important to try to preserve the hair of a child by protecting the head from scratching and possible minor skin traumas by wearing hats.

Other symptoms of this disease include: difficulty in swallowing, excessive sweating, swelling in the gastrointestinal tract and urinary organs, abnormal thickening of the outer layer of the skin (hyperkeratosis), a small, hard, pale keratinous nodule formed on the skin, typically by a blocked sebaceous gland (miliium), skin lesions of anus, rectal mucosa and genitals. The weight of such babies is often reduced, one may observe anemia and a significant lag in physical and mental development. The resistance with infections is also reduced, that is why any form of epidermolysis bullosa is often complicated by joining secondary Pilo coccal infections. The most severe complication is secondary amyloidosis with dominant affection of the kidneys which leads to child's disability.

There emerges multiple caries and tooth enamel hypoplasia among the children with epidermolysis bullosa. One may observe severe lesions of the soft tissues of the oral cavity, scarring mouth, tongue limited mobility. All these factors lead to reduced possibility to take precautionary measures to prevent dental caries. In the nearest past tooth extraction was the main treatment for patients with this disease. Presently, dentistry is able to prevent tooth decay, restore shattered enamel and help form a correct bite.

It is necessary to make biopsy tissue and DNA analysis for correct and timely diagnosis of epidermolysis bullosa. Though the child cannot be cured, however, this doesn't mean that we cannot help him or her and to prevent the development of painful and fatal complications. Unfortunately, doctors frequently are ignorant of pathogenesis, clinical

symptoms, and modern methods of treatment for illness. Ukraine counts about one thousand of such children, and state medical documents don't presuppose expenses on them, moreover, the necessary doctors can be counted on fingers.

For effective work with families of patients with epidermolysis bullosa, to give a qualified help we need necessary funding and high-tech research, creating the conditions for admission to specialized wards, the development of civil and social support programs for families with sick children with severe dermatoses.

**Clinical case.** Patient G., 1995 year of birth, first went to the dentist in 2004 to Chernivtsi local dental clinic for children complaining on sharp toothache. The baby's mother warned that her child is sick on epidermolysis bullosa.

**Objectively:** the child of asthenic structure with moderately reduced weight, the skin is pale, and head and neck are partly covered with bullosa vesicles. The face is symmetrical, the vestibule of the oral cavity is shallow, limited mouth opening. The gums are hypertrophied, gingival papillae increased in size for 1/3 of coronal tooth height. There are signs of loss of primary teeth epithelial connections. Cavities within 11, 21, 23, 44 teeth in pulp dentin. The crown parts of teeth 16, 26, 36, 46 are destroyed till the gum level.

**Diagnosis.** Principal disease: epidermolysis bullosa.

**Dental status:** microtome, 1 degree fibrotic hypertrophic gingivitis, chronic fibrous pulpitis of the 11 tooth, acute deep caries of 21, 23, 44 teeth, enamel hypoplasia of 31, 32, 41, 42 teeth, palatine tooth position of the 12 tooth.

After emergency treatment, the child was taken to clinical records. A vivid treatment plan was made for the patient:

1. Dental health;
2. Symptomatic treatment of lesions of the mucosa and periodontal tissues of the oral cavity (the use of antiseptic drugs of natural origin, such as Romazulan, Novoimanin, Chlorphilipt, Salvin);
3. Orthodontic consultation;
4. Meticulous oral hygiene to further preserve teeth from decay and caries.

Through the shallow vestibule and violation of teeth with periodontal communication it is very difficult to carry out preparation of cavities and their filling in patients with epidermolysis bullosa. Dentists really need the help of nurses, one of which helps to hold the upper lip or cheek, the other quickly prepares the filling material and submits it to the dentist. For gaskets for therapeutic drug we used preparation with calcium "Life". For constant filling in such cases a glass ionomer cement "Fuji-IX" has recommended itself very well. After allergy tests to anesthetics used in dental practices, dental roots teeth 16, 26, 36 and 46 were removed. Orthodontist recommended grind cutting edges 11 and 21 teeth for as long as possible preservation of the lower incisors, which partially missing enamel. For brushing was recommended to use toothpaste with fluoride, toothbrush with a small head and soft bristles. To soften the bristles is necessary before cleaning brush teeth wash with soap and hot water. Despite the problems with the gums, teeth brushing should at least once a day, preferably before bedtime. Also it is recommended mouthwash after every meal. The mother of the patient has been advised that routine inspections need to come 4 times a year in order to promptly identify and treat new cavities and tooth decay prevention of complications. During 2006–2009 was sealed lower incisors (enamel on them gradually disappeared). Since 2011, the patient is at the dispensary at the Department of Surgical and Pediatric Dentistry in Bukovina State Medical University.

In March 5, 2013 in the Austrian hospital, Salzburg, the surgery was conducted on plastic hands to restore function.

In January 2014 the prosthetic upper front teeth of metal-ceramic crowns was held at the Department of Surgical and Pediatric Dentistry in Bukovina State Medical University.

### **Recommendations for treatment of children with epidermolysis bullosa**

1. Modern technologies allow to identify gene defects in patients with epidermolysis bullosa and their families. With knowledge of specific genetic mutations that occur during Epidermolysis bullosa, it is now possible to identify the specific gene mutation in the family that will allow for prenatal tests for

the pregnant woman. Fetal diagnosis is possible on the basis of studies of amniotic fluid or chorion at the tenth week of pregnancy. The parents of sick children can prepare and learn how to take care of such child. This also includes the rules of bathing (not more than once a week) and the water temperature must not be higher than 35 degrees Celsius.

2. Through early diagnosis, the purchase of special cosmetics for skin hydration child (bath foam, oil, natural salts and cleansing creams and gels), dressing and processing rules may prevent the growth of the fingers and toes.

3. Infant feeding should be organized with the most accurate method. Most parents in the first months of their children successfully use conventional soft nipples of domestic production, which they put on the apothecary bottle. All utensils should be thoroughly sterilized to prevent penetration of bacteria and microorganisms from the outside. It is necessary to take Vitamin D3. The sick child should eat the products which are harmless for teeth — vegetables, fresh fruits, cottage cheese. All children, without any exceptions, have bad days when teeth erupt or they get sick, and consequently this leads to uncontrolled reduction in food consumption.

Children with epidermolysis bullosa can suffer from bubbles in mouth and throat, which hardens the food consumption, that is why it is important to make use of good days and feed the baby more frequently to compensate for the days with lack of food. Children with epidermolysis bullosa need much more nourishing products not only for normal growth, but also for the following:

- restoration of essential nutrients lost from open wounds and lesions;
- rapid healing of affected areas;
- prevention of infection affected skin;
- good health and a better quality of life.

4. Since childhood it is important to observe the teeth of the sick child and mouth. Usually vesicles in the mouth appear right after the birth. They are also often mistaken and taken for stomatitis. Tooth eruption is more difficult with the general condition of the mucous membrane. The usage of tooth gel may relief some pain. After the first baby tooth should be accustomed to oral health. In the first phase the use of silicone finger brush or soft

wipes for oral hygiene. A child with epidermolysis bullosa should be examined orally not less than twice a year because caries grows very fast. After all the baby teeth have appeared it is important to conduct preventive coating varnish with fluor, nearly ten procedures. It is important to brush the teeth at least once a day and to water the mouth after each meal. The parents of sick children should brush their childrens' teeth till they are seven.

5. Presently, children with epidermolysis bullosa can fully preserve their teeth both functionally and cosmetically. Modern dentistry can prevent tooth decay, restore the affected enamel and help form a correct bite. The future is much more optimistic: new materials are being worked out, more aesthetic and firmer, new technologies continue to be carried out. And healthy teeth of the patient with epidermolysis bullosa will become the reality.

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## Zinc: clinical-biochemical aspects of dental and thyroid pathology in children

**Abstract:** the content of zinc is detected in the hard tissues of the tooth in case of caries process in children with comorbid pathology of the thyroid gland. Application of a complex vitamin-mineral zinc containing preparation was found to be reasonable in this group of children.

**Keywords:** children, zinc, caries, exophthalmic non-toxic goiter.

Nowadays the position concerning the role of general factors in the development of caries process in children has been clearly defined. In addition to somatic pathology and caries provoking diets, natural and ecological factors are always present. The influence of biogeochemical environment is of

great importance on occurring pathology of the hard dental tissues as well as a number of other diseases of the human body, and thyroid gland in particular. In other words, dental caries and exophthalmic non-toxic goiter are diseases closely connected with trace elements impact. The role of halogens in occurring