Periodontopathy in the child´s age

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The differencies between periodontal tissues in the primary dentition and permanent dentition are very small from the morphology aspect.

The appearance of the healthy periodontal tissues in primary dentition, in mixed dentition, permanent dentition. The appearance of the tongue.

The closest similarity from the separate kinds of periodonthopaties in children with the clinical view in the adult age can be found in gingivitis and atrophia of periodontal tissues.

The terminology of periodontal diseases is continuously changed. The following determination is used from the pediatric dentistry point of view: three different groups of pathological changes in child´s periodont can be devided excerpt of gingivitis. This classification is suitable especcially for children from the toddler age till the teenager age. The clinical view in the periodontal changes in adolescents resembles rather to the view in adult age.

The periodontal tissues diseases are devided to three groups according to the ethiopathogenesis, range of damage, resistence of periodontal tissues and according to the prognosis.:

1. normally resistant periodontal tissue is injured by intensively operaring external noxa. The damage is localisated to a small area, it involves mostly two teeth. The prognosis

is good. The process stopps after the removing of the harmful influence. The teeth in permanent dentition are affected more often. Ethiological factors: pathological traction of frenulum oris, linguae and collateral cheek lash, primarily shallow vestibulum oris, bad habits. The periodontal damage in limited range can be found like as injury result as well, in the case with destruction and secvestration of the marginal part the osseal socket or interdental septum. In this cases the x-ray picture answer to the horizontal alveolar atrophia. The next processus progress can appear in certain conditions in the adult age and the right periodontal pocket can arise (malhygiene). The timely fixation afflicted teeth is the prevention of such changes. Iatrogenic influences, for instance incorrectly shaped fillings, unfitting (inconvenient) prosthetics compensations, inadequate orthodontic forces play quite a big role.

2. periodontal tissue is destructed by a pathological process in its certain part. This process does not continue in the case when the cause is eliminated. Ethiological factors: eosinophil granuloma, epulides, tumors, necrotic changes, that extended to the bone basis in the ulcer condition (bad order). (agranulocytosis)
3. the most conseqential group are the severe diffuse changes in periodontal tissues. This group of diseases is chracteristic by its rapid progression and the premature loss of primary teeth and sometimes also permanent teeth. This type of disease do not distinguish essentially by its clinical manifestation from the periodontal diseases in adults. The difference is in the time course because in children the progress of the destructive changes is incomparably faster.

Picture ad 1 – normal view of periodontal tissues + external intensively affecting noxe

- frenulum labii sup. oris breve
- frenulum linguae breve

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- frenulum linguae breve – the child cannot stick out the tongue and touch the upper lip, in preschool children connected with pronunciation problems
- bad habit – gingiva was injures by nails
- orthodontic anomaly – Angle class II, deep bite

Picture ad 2 – pathology process in certain range

- epulis congenita, child 7 days old. Epulis congenita (granular cell myoblastoma) is a rare benign swelling formation, which is situated on the processus alveolaris in an infant. It is found in girls more often than in boys = there is a female predominance. It is probably a reactive mesenchymal lesion, usually presenting as a pedunculated firm pink swelling. The spontaneous regress can be found. The surgery treatment = excission is indicated in the case of problems during food intake or breathing difficulties.

- Epulis gigantocelullaris (giant cell granuloma = giant cell epulis) is found in children most often as a non-neoplastic swelling of proliferating fibroblasts in a higly vascular stroma containing many multinucleate giant cells. It is characteristically located in the interdental space close to permanent teeth, which have the primary teeth on their positions before = they have had predecessors. That means, the permanent molars are never included. It is a benign process. Typical finding is dark red colour, even if older lesions tend to poorer colour. This epulis can be occasionally found as a feature of hypoparathyroidismus. This is a benign lesion.

The third group of periodontopaties= severe diffuse changes with a quick progression- differs from both previous forms. In this group it is necessarry to assume either the primarily inferiority or secondary reduced resistence of all periodontal tissues, which react even to sub injurants. The causes of this small resistence of periodontal tissues are not known. In children with difuse progressive periodontopathy in their teeth we can always find some systemic diseases or metabolic disorder. There exist some diseases in which course J.Kuklová

the periodontal disease is a rule. This situation can be found in hereditary and geneticaly coded disorders – m.Down, oligophrenia, ectodermal dysplasia.

Some diseases in cutaneous system are in also childhood accompanied with variously expressed pathologic changes in periodontal tissues. It can be for instance ichthyosis, severe formo f psoriasis, epidermolysis bullosa hereditaria. A severe progressiv periodontopatic changes are a part of basic symptoms in hyperkeratosis palmaris et plantaris (morbus Papillon-Lefévre).

Endocrinopathies are often connected with disorders in periodontal tissues, especially in grow disorders connected with anterior pituitary dysfunction, thyreoid gland dysfunction, dysfunction of the parathyreoid glands. Disorders in periodontal tissues are found also in patients suffering of metabolit disorders like diabetes mellitus and hypopfosphatasemia.

The periodontal disorders picture can be found in deficiency disorders, especially in skorbut.

Relative often report of anomaly level of imunoglobulins can be found in childhood periodontology, that is why it is not possible to eliminate the role of imunity system disorders in the ethiopathogenesis in some cases. The changes in periodontologic tissues in sclerodermia and other kolagenosis suggest (indicate) this situation in imunity system.

The changes in periodontal tissues are regular findings in cyclic neutropenia and generalized form of reticuloendoteliosis (histiocytosis X).

Picture:

- ***Down´s syndrome*** is a chromosomal aberation , trisomia 21. More often the children have an older mother. These children have a typical mongoloid appearance, brachycephaly and short stature are also a prominent features. Anomalies in many other organs can be present as well. All patiens are mentally handicapped. Patiens with Down´s syndrome have multiple immune defects and they are predisposed to acute leukaemia. A fairly characteristic, though not pathognomonic, feature is J.Kuklová

the presence of white spots (Brushfield spots) around the iris. Keratitis, blepharitis are conventional finding, these children suffer from frequent infects in upper part of respiratory system. These children are used to breath by mouth, not by nose and that is why these children suffer from cheilitis and cracked lips. Macroglossia and lingua pliccata (fissured tongue) are frequent findings. The midface is often hypoplastic, more frequent occurrence of cheiloschisis (cleft lip) and palatoschizis (cleft palate) then in the general population are described. Other characteristic features are a single palmar crease (simian crease) and clinodactyly of the fifth finger. Early lost of teeth comes from bad oral hygiene, but it is also caused by short teeth roots and especially by rapidly progressing destruction of periodontal tissues.

- ***Ectodermal dysplasia syndrome*** – is characteristic by tissue disorders which were formed from ectoderm. Characteristic sign are fine thin hair (hypotrichosis), in hypohydrotic form the sweat glands are not prezent. The danger situation of overheating can be in summer the result of this situation. These children suffer often from respiratory infection. In the oral cavity the oligodontia is found (teeth from more than one group are not based). The few teeth that are present are often of simple conical shape with delayed teething. The lower third face high may therefore be reduced. Dry mouth predisposes to caries. Hypohydrotic form of ectodermal dysplasia is usually man sex-related. Children are otherwise well and mentally normal. Also the form with problems with sebaceous glands exit. Both sebaceous and sweat glands are based from ektoderma.

Rare varieties include an autosomal dominant variety (the tooth and nail type), characterised by hypodontia and hypoplastic nails, and a sub-type in which teeth are normal (hypohidrotic ectodermal dysplasia with hypothyroidism). J.Kuklová

- ***Papillon Lefévre syndrome*** is a rare genetically linked ilness. It is manifested with pre-prepubertal periodontitis in association with hyperkeratosis palmaris and plantaris. Practically all primary teeth are affected and lost most often by the age of 4 years. The permanent teeth are most often lost by the age of 16 years. Hyperkeratosis usually affects the soles more severely than the palms. The dura mater may be calcified, perticularly the tentorium. The choroid can also be calcified. A rare variant of the Papillon-Lefévre syndrome includes arachnodactyly and tapered phalanges as well as the above features.
- ***Hypoparathyroidism***– in congenital hypoparathyroidism hypoplasia of teeth, shortened roots and delayed teething are found. Acquired form of this disease produces facial tetany (Chvostek´s sign), but no oral manifestation.
  In pseudohypoparathyreodism there are elfin facies, short statue, short metatarsals and metacarpals. calcified basal ganglia and enamel hypoplasia. Parathyroid hormone is secreted, but the end organs are unresponsive and there is also an association with other endocrine disorders, particularly hypothyroidism.

Only small percent of children with the diffuse form of periodontitis during careful examination has no deviation to normal results. It is the opposite ratio to adults, where the finding of severe periodontitis is found in total healthy persons.

The clinical picture of periodontal disease in children is characteristic by the same symptoms as in adults. We can find the inflamation form, degeneration of the situation prevailing or the atrophia. The clinical picture of periodontitis is given especially by gingivitis and presence of vertical pockets. Non-inflamation form is characteristic by horizontal loss of alveolar bone and inducent exposure of teeth cervices. J.Kuklová

All these changes can be found in primary and permanent teeth. The diagnosis of periodonthopathy can be provided on the base of clinical and roentgenological examination. Characteristic is the finding of multiple pockets, inducent exposure of teeth cervices and looseness. Protracted gingivitis with the presence of false pockets that don´t react to standard therapy are always suspect from deeper process and the x-ray examination is necessary. It is essentials to send the child to the total examination for confirmation of diagnosis.

Picture: ***Langerhan´s cell histiocytoses*** are a group of disorders, formerly termed histiocytosis X, arising from Langerhan´s cells.

The Letterer-Siwe disease is an acute disseminated form of this illness, it is usually lethal and is can be found in children under the age of 3 years. The loss of bone tissue,mucocutaneous lesions, lymphadenopathy, fever and hepatosplenomegaly are described in this case.

Hand-Schüller-Christian disease appears at the age of 3-6 years with osteolytic leasions of jaws, loosening of teeth („floating teeth"), diabetes insipidus and exophthalmos.

Eosinophilic granuloma is a localised benign form of histiocytosis, it is typically seen in older patients, the painless osteolytic bone lesions and, sometimes ulceration in the oral cavity are described. Afflicted teeth starts gradually to move.

-leukaemias – spontaneous gingival haemorrhage and oral purpura are usually sings in this illness. It does not exit any typical oral sign, according which we could divide among single types of leukaemias and gingival bleeding from other reasons. Local reasons for bleeding: gingivitis chronica, periodontitis chronica, acute necroticans gingivitis. Systemic reasons for bleeding: any trombocytopathias, leukemia, HIV infection, skorbut, effects of drugs – antikoagulantia.

- acute lymphoblastic leukaemia – purpura gingivae is often connected with injury. Chemotherapy may aggravate the bleeding tendency. Gingival haemorrhagies can be so profuse as to dissuade the patient from the oral hygiene and this situation J.Kuklová

makes this problem worse because gingiva starts to be more inflamed, more hyperaemic and the bleeding starts to be more profusely.

- ulcerations in the oral cavity in acute lymphoblastic leukaemia. Mouth ulcers are very often. Some of them are connected with the chemotherapy, other with viral, bacterial or fungal infection, some of them are non-specific.

- swelling of gingiva in myelomonocytic leukaemia: leukaemic deposits in the gingiva can occasionally cause gingival swelling, a feature especially in myelomonocytic leukaemia.

Mikrobial infections – mainly fungal and viral - are common in the oral cavity and they can be a significant problem to the leukaemic patient.

Candidosis is extremely common finding, from viral infections recurrent intraoral herpes simplex then. The herpetic lesions can be extensive and bleeding into herpetic lesions is an often finding because of the trompocytopenia.

Simple odontogenic infections can spread widely and be difficult to control. Non-odontogenic oral infections are common in leukaemic patients and can involve a range of bacteria including Staphylococcus aureus, Pseudomonas aeruginosa, Escherichia coli and enterococci and other.

The x-ray examination in total healthy children can show the picture of periodontal pocket. It is the situation in erupting teeth, where the pericoronal pocket camping under the tooth cervix creates the recessus. Limbus alveolaris strongly shelves in the direction to the teeth. The x-ray finding of thin lamel in compact bone that demarcates the apparent pocket gives the evidence of a physiological finding. This situation or picture we can most often see in the lateral teeth. J.Kuklová

Periodontal therapy

- local
-total – damage of periodontal tissue is a ssymptom of the oveall disease

-conservave therapy
-surgical therapy

For the children age is the most common finding the high frenulum labii sup.breve, it is really common in the primary dentition. The surgical treatment at then age till 6years is very rare, it is done only under the general anestesia. At the age with then mixed dentition it is recommended after the eruption of the permanent canines. It can be done with the help of laser therapy or with the surgical therapy.
The shallow vestibulum oris can be found after the eruption of permanent incisors in the lower jaw. At this age the only possible recommendation is the right type of toothbrushing with a small toothbrush, the brushing by the parents is at this age better possibility. The surgical therapy of the shallow vestibulum is possible after the stopping of growing of the mandibula in this reagion.

The comments on AAP classification – textbook Slezák: Preclinical periodontology

The AAP classsification, as started above, has been slightly modified for the purposes of education,however, it has thus become significantly more concise. In contrast to older textbooks, it contains number of new disease denominations, previously known under various names, that can not be considered obsolete or unusable

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