

PRACTICAL ASPECTS OF PEDIATRIC DENTISTRY

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ABSTRACT

Dentistry for children (pediatric dentistry - pedodontics) is the discipline that deals with the prevention, diagnosis and treatment of simple and complicated caries, dental fractures, gingival pathology and oral mucosa in children and adolescents. Recently, there has been a significant increase in the morbidity of dental diseases in children, through the early appearance of carious lesions and its complications, increased frequency of periodontal diseases and inflammatory diseases of the oro-maxillo-facial region, with loco-regional and general repercussions, prevalence of inflammatory processes odontogenic of the oro-maxillo-facial region. The unfavorable situation of the health of the oral cavity in children causes the increase of children's morbidity and the aggravation of the evolution of somatic diseases, which influence the oral health; untreated dental diseases are the persistence of chronic foci of odontogenic infection, which have a triggering or promoting role in the development of systemic diseases. The main factors that have an impact on the quality of daily life of children are: dental pain, lack of permanent teeth due to their early extraction due to caries damage and its complications, dental trauma. Dentistry for children is necessary from an early age, among the most common diseases are dental caries, gingivitis, infections, non-conforming eruptions of teeth or dental crowding.

Keywords:

orthodontics, pedodont, dento maxillary anomalies, carious lesions, dental pain.

INTRODUCTION

The immaterial contact with the sensitive space of childhood, full of meanings, wonders and naiveties, is equivalent in this sense, with a bath of the soul reached maturity, with a purification of it, most of the times, with a resurrection and a revival of childhood - and nostalgia for childhood - is a myth of the mature man.

In the first two months, the fetus goes through the embryogenesis stage, when the cephalic extremity is formed with the stomodeum limited above the fronto-

nasal buds, which in turn consists of an internal nasal bud and two external nasal buds; two maxillary buds; two mandibular buds. In the 6th and 7th intrauterine week, the incisive bone (median), the bony palate and the gum from the maxillary frontal area to the interalveolar septum between the lateral and canine incisor are formed from the internal nasal buds. At the end of the 7 intrauterine weeks, these buds ossify; after 6 weeks intrauterine, osteoblasts, cementoblasts and

odontoblasts are differentiated, which will produce bone, cementum and dentin.

Desmodontium cementum and the alveolar bone in areas of the canine jaw towards the distal side, and the bones behind maxilla and out of the suture penetrating the palate, maxillari. The alveolar bone buds are formed from the jaw formed by desmal ossification, the bone membrane, having a resistance in the mandible the ossification is of the enchondral, cartilaginous type, but the alveolar bone is also of the membrane[1,2,3].

From week 6 intrauterine the stomodeum epithelium on the area of the alveolar ridges proliferates forming the primary dental blade. From the 12th week begins the period of organogenesis, the fetal period (the embryo becomes a fetus) characterized by processes of morphogenesis and histo-differentiation; it develops from the dental blade to the temporary dental bud and then to the bud of the permanent frontal teeth, premolars and molars, called the histodifferentiation stage.

The tooth buds are bell-shaped, and consist of: the outer layer that forms the outer adamantine epithelium, the inner layer forms the inner adamantine epithelium, the intermediate layer with stellate cells, the stellate reticulum, which will regress. The adamantine strata, intern and extern, constitute the reduced or united adamantine epithelium, which, at the base of the bell will constitute the Hertwig sheath. Adamantine cells are hexagonal in shape (ameloblasts).

Simultaneously with the formation of the dental papilla of the enamel and dentin, the mesenchyme will be organized in a dental bag in the form of a capsule - the dental follicle; cement, desmodontium and alveolar bone will be born inside the dental sac.

The outer layer of the bag contribute to the deposition of dental bone (cell) in which the ends of the fibers are collagen -

Sharpey fibers. The dental internal stratum of the bag will form the root cementum which is embedded in the internal end of the fibers of collagen – Sharpey fibers. The dental sac will produce periodontal ligament cement and alveolar bone through the action of osteoblasts and cementoblasts[4,5].

The Hertwig sheath will bend inward to form the epithelial diaphragm, while the contents inside the adamantine bell (dental papilla) will increase to form the root as the diaphragm descends. In monoradiculars, the Hertwig sheath looks like a tube, and in pluriradiculars, holes will form through which the roots of the tooth will advance.

After the 6th week, the fundamental cementoid substance is formed in the dental sac; collagen fibers will be embedded in the root cement and will be mineralized as hydroxyapatite in the cement; and the outer end of the collagen fibers will be trapped in the alveolar bone.

Desmodontia is the connective tissue in the alveolar dento space where the ligaments are found, loose connective tissue, fibroblasts, blood vessels, nerves, originating from the dental sac (dental follicle). Fibroblasts produce collagen fibers that will not be functionally oriented at this time. Both in the jaw and mandible appear centers of desmal ossification (in the maxillary embryonic buds) in weeks 6-7. The orientation of the bone trabeculae will be directed by the lines of force during the operation of the periodontium.

The tooth erupts visibly until contact with the antagonists and subsequently erupts to compensate for abrasion at the contact surface or to meet the missing antagonist.

Forms of eruption: active eruption, movement of the tooth to the occlusal plane, vertically, without lowering the level of the junctional epithelium; by apposition of alveolar bone as will compensate for tooth eruption; *passive eruption*, the insertion of

the junctional epithelium descends to the top of the root - the crown-root ratio increases. The epithelial insertion is the area where the buccal epithelium is inserted on the tooth. The level of epithelial insertion (junctional epithelium) can decrease due to the normal physiological involution of the tissues with age or as a result of periodontal disease, a symptom called gingival retraction.

Improving oral health and improving the quality of life of children by streamlining primary and secondary prevention measures for dental conditions and treatment methods. Pediatric dentistry, also called pedodontics, deals with the prevention and treatment of diseases of baby teeth and young permanent teeth. The pedodontist can detect dento-maxillary anomalies and their solution will be performed by the orthodontist. The task of orthodontics is the diagnosis, prophylaxis and treatment of dento-maxillary anomalies; incorrect placement of teeth in the oral cavity, spacing and crowding of teeth, malocclusion.

Children between 6 and 12 years of age have a mixed dentition (both baby teeth and permanent teeth). During this period when children consume a lot of sweets and sour juices and brushing is insufficient, many cavities can occur.

Baby teeth or temporary teeth have a very important role: they ensure effective chewing, so a normal feeding and development of the child; affect speech development; provide space between the standing and the guides to the correct position; allow the normal development of the bones and muscles of the face.

Temporary teeth (20 in number) appear in a characteristic time interval from 6 months to 2 and a half years. The mandibular teeth erupt before the

jaws, except for the lateral incisors which erupt in a reverse sequence. Untreated tooth decay temporary complicated can lead to early loss of their causing complications eruption of permanent teeth with repercussions on the entire maxillary apparatus. Baby teeth are not extracted before the time when the proper permanent tooth is to erupt. In the event that the baby tooth is lost early due to trauma or caries complication, the free space left after its loss will be maintained with a special device to guide the permanent tooth to erupt in the correct position.

Permanent teeth (28 or even 32 in the situation where all the wisdom teeth appear), appear in the range of 6-13 years (except for the wisdom teeth). After last temporary tooth eruption follows a break of 4-5 years after starting the eruption of permanent teeth.

The visit to the dental surgery will be paid after the final eruption of the baby teeth, especially around the age of 3 in the situation when no caries is noticed. There will be a protocol visit, short, to familiarize the child with the atmosphere of a dental clinic, to know the dental chair, equipment, to get used to the noise produced by dental parts (turbine).

For every child parents must explain more about the stomatological procedures not to scare or threaten him, on the contrary they will speak positively and funny about the dentist.

It is very wrong to take the child to bed only when it hurts; it will associate pain with the dentist or the dental surgery, will get scared, which will put his mark on his future attitude about going to the dentist. An unpleasant experience on the first visit to a dental office will make the child refuse the following treatments or even regular check-ups. Only a good collaboration dentist - parent can make the first visit of the child to be a pleasant

experience, to know his dentist in a friendly way, gaining trust in him.

Pedodontics is the dental care provided to children (pedodontics). Children are a special category of patients due to the particularities of milk teeth and permanent teeth, but it's because it is essentially in part to gain trust from the little ones from the outset.

The pedodont has an important role, not in solving specific problems, but contributes to the education of children, adults and parents in the spirit of compliance with oral hygiene and prophylaxis.

Pediatric dentistry includes prophylactic treatments (fluoridation, sealing, guiding countries on brushing) too, as prevention of the caries is as important as treatment. Certain diseases of baby teeth cause disorders in the development of permanent teeth; it is very important to pay equal attention and treatment of milk teeth, because their health depends on the harmonious and healthy development of permanent dental arches[6,7,8].

When the child has dental or gingival pain, dental fractures, crooked teeth or those that do not meet in the bite, noises when opening or closing the mouth.

It is necessary to maintain a balance in the diet; alkalize the oral and body cavity to reduce demineralization and toothache. Alkalinization is done by using alkaline water and alkaline foods (melon, golden apples, pears, bananas, carrots, pumpkin, etc.). Excess protein in the child's diet causes acidosis of the body.

The extract from fir buds, rosehip buds, birch bud extract, so products from plants rich in minerals, remineralizes the enamel.

When the child spends a lot of time on TV, tablet or phone, artificial electromagnetic fields cause acidosis.

Seeing a doctor in pedodontics as soon as possible after the eruption of the first teeth, in order to comply with hygienic measures appropriate to their age and dental prophylaxis, it is very necessary.

The child's diet is crucial for the health of his teeth. Although sweets are the favorite of the little ones, we can not ignore their harmful effects, including on oral health. Sugar consumption is considered the main culprit in tooth decay, as it promotes the formation of bacterial plaque and increased acidity in the oral cavity.

A significant factor in preventing tooth decay is the presence of fluoride ions in saliva, therefore, fluoridation has the role of preventing the occurrence of cavities in children and reduce the progression of existing caries[9,10,11].

The increased resistance of dental tissues, in particular enamel mineralization process envisages to it and is closely related to the intake of calcium, phosphorous and vitamin D during the formation of the teeth.

Keeping baby teeth until their physiological replacement is of particular importance for the formation of the correct occlusion in the child. Mastication, speech, aesthetic defects and incorrect alignment of permanent teeth due to premature loss of baby teeth can be prevented. It is absolutely necessary to treat temporary tooth decay in time[12,13,14].

Loss or need for premature extraction of baby teeth can lead to permanent teeth growing incorrectly and misalignment. Early loss of several baby teeth leads to slow and incorrect development of speech and diction, which in

turn can cause certain psychological problems. The lack of a large number of baby teeth leads to dysfunction of the gastrointestinal tract. Baby teeth protect the germs of permanent teeth. For this reason, their poor condition will also affect the molar teeth. The deformed jaw can lead to the formation of malocclusion.

Treatment orthodontic demonstrates the best results in childhood and adolescence, when there is active growth of the whole body and especially maxillo-facial skeleton; orthodontics has no age limits. The age between 11 and 13 years offers unique possibilities for orthodontic treatment with obtaining high-performance results; during this period occurs the most active development of the organism, the treatment process follows much faster[15,16,17].

Orthodontics deals with the diagnosis and treatment of dento-maxillary anomalies, which is reflected in both children, adolescents and adults. Orthodontic treatment corrects an unsightly alignment of the teeth, crowding on the arch or closing of dental spaces, due to the loss of one or more teeth, as well as in cases of anodonts.

To the children that still have not changed all milk teeth with permanent teeth, must be applied mobile dental devices[18-21].

The appearance of most permanent teeth requires the installation of fixed braces.

Mobile devices are indicated, as appropriate, for patients aged 6 to 11 years, acting on temporary and permanent teeth, especially during the period of mixed dentition, when permanent teeth begin to replace temporary teeth. The therapeutic action of mobile orthodontic appliances is monitored by the orthodontist by scheduling the patient every 30 days. It is necessary to perform the treatment or dental

complex with the application of progressive approach to correct the malocclusion and other visible defects tooth alignment.

Orthodontic appliances are of two types: vestibular (external) and lingual (internal).

Vestibular braces are more popular and affordable; it is mounted both in adults and children. It is divided into the following models: metallic, ceramic, sapphire, self-ligating (Damon Q and Damon Clear), lingual.

Metal braces is the most popular type of fixed orthodontic appliance, mainly due to its safety, functionality and affordable cost; suitable for children, teenagers and adults.

Ceramic dental appliance and is to be made of high-technology glass; it does not stain and has a high resistance.

The dental device of sapphire and is manufactured from sapphire crystal in order to remove the maximum aesthetic defects of orthodontic appliances; fit any color and shade of teeth.

Appliances dental 's self ligating (without ligature) a modern performance in orthodontics, which considerably reduces the terms of correction to an anomaly of occlusion.

The lingual dental appliance is mounted behind the teeth; lingual brackets are made of metal.

Gingivo-periodontal disorders of the child

Gingival inflammation is often the harmful result of the action of products resulting from microbial activity in the bacterial plaque, but can also occur as a result of traumatic occlusion (deep covered occlusion), dental malpositions (crowding, reverse gear), lip parafunctions and tongue,

of oral respiration, of mechanical irritations produced by untimely brushing or by the elements of orthodontic appliances. Acute or chronic, dystrophic, mixed (degenerative-

inflammatory)
inflammatory forms, periodontomas may appear(Fig.1).

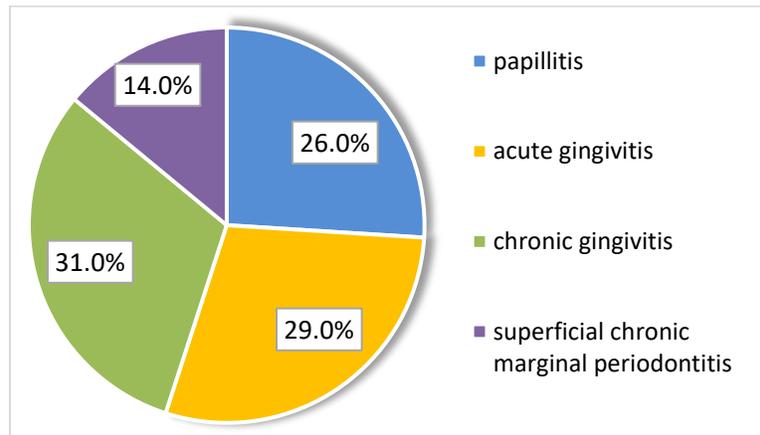


Fig. 1 Distribution of Gingivo-periodontal disorders of the child

Classification of acute inflammatory forms:

Papillitis, an inflammatory process located in the interdental papilla, caused by bacterial plaque, mechanical (chewing, brushing) or chemical irritations (arsenic or paraformaldehyde dressings)

Acute gingivitis, inflammation of the marginal free gums that may be consecutive to papillitis, or may occur in general suffering. Between 0-3 years, the most common is gingivitis that accompanies the eruption disorders of the temporary teeth. Gingival congestion and pruritus are associated with hypersalivation, usually transient phenomena. In severe cases of superinfection, the process may also affect the follicular sac of the tooth to erupt; traumatic, aphthas, herpes, and candidiasis will also occur.

Between 3-7 years of age, inactive gingivitis is common due to the complicated caries of the temporary molars and gingiva-stomatitis that

accompanies eruptive fevers (measles, chickenpox, scarlet fever).

Between 7-12 years of age, gingivitis related to the eruption of permanent molars or endocrine disorders (pubertal gingivitis), metabolic disorders or consecutive drug treatments may occur. Along with inflammatory forms, hyperplastic forms can also appear, characterized by hydantoin gingivitis.

Chronic inflammatory forms:
Chronic gingivitis caused by chronic forms of acute forms if the therapy is delayed, is not correct or if the causal factors are not removed. The changes are present only in the superficial gum.

Chronic superficial marginal periodontitis caused by the persistence of irritative factors in the conditions of the presence of muco-bacterial plaque. Bleeding and gingival pruritus, tension sensation, shortness of breath appear, and superficial

bone changes begin to appear on radiographs.

Deep chronic marginal periodontitis occurred when inflammatory processes extend into the periodontium supporting the tooth. Bleeding and itching are accentuated, masticatory discomfort occurs due to increased dental mobility. The interdental papillae are purplish and swollen, there are periodontal bags, dental migrations, occlusal interferences. The alveolar bone is resorbed to varying degrees.

Dystrophic forms (juvenile periodontitis) are rare in children, but can occur in adolescents and are characterized by rapid atrophy of the alveolar bone. They are interested in groups of teeth (primary molars and incisors) or can be generalized. Gingival retractions, mobility and dental migrations are noted. The etiology is not clearly known, but as aggravating factors are considered high evening brakes, traumatic brushing.

Within the mixed forms (degenerative-inflammatory) typical for children is Papillon-Lefevre syndrome. The onset is immediately after the eruption of temporary incisors and is repeated with each group of permanent teeth so that within 2-3 years of eruptive, the teeth are lost from the arch after dramatic inflammatory and degenerative lesions, deep periodontal pockets, secretion abundant, tooth mobility, halene, important bone resorptions. Cosisopathy, immunological deficits are considered as etiopathogenetic factors.

Periodontomas are proliferative forms of periodontopathy caused by both the increase in the number and volume of structural elements.

One can distinguish: pubertal *gingivitis* that occurs during puberty (11-12 years) but also

premenstrual. The presence of inflammation at the upper frontal level is characteristic.

The etiology is hormonal, maintained by local irritating factors; *gingivitis* from hypovitaminosis C; drug *gingivitis* (in epileptic children treated with hydantoin; fails to discontinue treatment); *gingivita* of acute and chronic leukemia wherein the gum is light, very painful, bleeding at the slightest touch or spontaneously, the teeth are mobile, is *lefantiaza gum* which typically has a family character may be generalized or localized (epulis gum). The gums are normal at birth, the changes appearing with the eruption of the teeth[22-26].

An essential role in the prophylaxis of gingivo-periodontal diseases in children belongs primarily to combating muco-bacterial plaque through proper oral hygiene, but it is mandatory to treat caries, remove vicious habits (finger sucking, lip suction, oral respiration) dento-maxillary anomalies. Healthy eating is very important to prevent vitamin deficiencies.

The treatment is recommended only after a correct and complete diagnosis and consists of professional sanitation, rinsing with antiseptic solutions, topical applications of astringent substances, local treatments with pastes based on specific antibiotics. In severe cases topical treatment is completed generally prescribed antibiotic treatment based on the secretion of gingival sulcus[[27-30].

In children, surgical treatment is indicated for abnormal brake insertions, severe forms resistant to treatment, and localized hyperplastic gingivitis (epulis).

The treatment plan is individualized, and the collaboration of the little patient is essential.

Periodontology and genetics

Genetics is a fundamental discipline of medicine, but also a clinical one, with medico-social implications. The concern for the decrease in the number of genetic diseases and for knowing the risk of recurrence, when a genetic anomaly appeared in a family, occupies an increasingly important place, important in the hierarchy of prophylaxis emergencies.

In the form of metabolic diseases (monogenic mutations) or in the form of malformations (polygenic and multifactorial heredity), these diseases are part of an ascending curve in frequency, represent a burden for society, family and the individual concerned and generate emotional problems. The reduction of the frequency of genetic diseases has acquired a new framework, with increased efficiency by using methods of prenatal determination in the early phase of diagnosis in high-risk pregnancies.

Dysmorphology is a vast chapter of pathology that includes all morphological abnormalities caused by genetic factors and, or environmental, present at birth or subsequently detected, which have a common element, the structural defect with prenatal onset.

Genetic counseling is different because the risk of recurrence differs greatly for each category of birth defect. Distinguishing between them is not always easy.

In this regard, we recall that some congenital anomalies may be malformations or deformations depending on the nature of the initiating agent. For example, in the Pierre-Robin sequence, hypoplasia of the mandibular arch causes secondary lifting and falling of the tongue and cleft palate. This can be caused by a malformation when the hypoplasia of the mandibular arch is intrinsic, in the partial trisomy of the short arm of chromosome 11 and the mandible

does not grow normally; the malformation can also be determined by extrinsic mechanical compression by clogging the mandible in an anatomical region of the fetus.

Unique congenital anomalies affect a structure, a single organ and the rest of the body is perfectly normal. It can occur late during morphogenesis (cleft lip and palate).

Sometimes, congenital anomaly single secondary produce other abnormalities congenital malformations or defects and deformations, resulting in the so-called malformation sequence. An example is the Pierre-Robin sequence, in which the mandibular hypoplasia secondarily produces cleft palate and glossoptosis. The cleft lip and palate have an embryological origin. If the lesion is limited to the upper lip it is a simple rabbit lip. If it also affects the skeletal system, then it is the complete form with the division of the palate.

Complete unilateral rabbit lip is the most common form. A wide slit completely interests the upper lip, jaw and palatal arch.

Treacher-Collins syndrome, also called Franceschetti-Swahlen syndrome is characterized by facial dysmorphism: mandibular hypoplasia, high palatal arch, dental abnormalities, etc.

Dominant transmission related to "x" - in this case the general criteria of dominant transmission are observed (continuity in the succession of generations, healthy offspring, sick parents who may have sick children, absence of consanguinity, high frequency). Two specific features are added: the sick father transmits the affection of his daughters, never to boys and from sick parents can result healthy children, but they are only boys. Example of disease with dominant gonosomal transmission, dental enamel hypoplasia. Another rare malformation is a rash in the nostril.

The most common birth defects are: cheiloschizis / cleft lip and cleft palate occurs when the tissues of the lips or the oral cavity does not develop normally during fetal development. The labioschisis is the opening between the upper lip and the nose. The palatoschisis is the cleft between the roof of the mouth and the nasal cavity. These types of birth defects can be surgically repaired after birth. The fight to prevent and eliminate birth defects is a fight for a more dignified, more humane life.

CONCLUSIONS

Permanent teeth begin their period of formation at the age of 3-4 months of intrauterine life and their eruption in the oral cavity occurs between 6-7 years and up to 12-13 years, except for the third (wisdom) molar that erupts during 16-25 years. The permanent dentition consists of 32 dental units.

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