VICIOUS OBSTACLES/HABITS IN THE GROWTH AND DEVELOPMENT OF THE DENTAL-MAXI-FACIAL APPLIANCE

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ABSTRACT

The evolution of the concepts of growth followed the path and evolution of life concepts. In order to better understand and to explain some aspects of intrauterine growth, and differentiation, modern physiology sought to decipher the most intimate aspects of the placentar filter, the way in which all the influences of the external environment represented by the mother's body are sent. Aim of the study: the aim was to avoid problems of differential diagnosis with other diseases of the orofacial system. For the purpose of conducting the research, we categorized the etiological factors of the dysfunction in the primary (they are mainly of a systemic nature, their role is hard to be highlighted), secondary (the usual clinical examination, with emphasis on the impact of vicious habits on occlusal characteristics) and thirdly (tests for the examination of psychoemotional and behavioral characteristics as well as the assessment of stress level were performed). Materials and methods: The study was conducted on a sample of 320 subjects who presented themselves at the Pediatric Dentistry Clinic in Galati for various dental treatments without accusing any obvious dysfunctional symptomatology, 120 patients presenting frequent vicious habits. Of these, 56 male (46.66%) and 64 female (53.33%). Results and discussions: Vicious habits are frequent in the critical periods of development of the dento-maxillary apparatus, exerting on it a bad influence. The sucking habits can have their fingers, the lips, the back of the hand, various objects or even tongue. Visual habits break the muscle balance and disturb the growth of the bones giving a new direction of their growth, in the sense of traction and pressure, producing changes in the position of the teeth, arches and jaw bones. Orthodontic treatment works on the basis of the biological principle of dento-maxillary apparatus integration in the general unity of the body, the balance of which develops and maintains according to the hereditary dowry and the influences of the environmental conditions; it is strictly individual; measures and treatment methods vary from one patient to another depending on the individual characteristics and the stage of child development. Conclusions: The various clinical forms of dento-maxillary abnormalities characteristic of each age stage are due to the association of different vicious habits and the intensity or duration of these functional disorders.

Key words: dental abnormalities, heredity, vicious habits, orthodontic treatment.

INTRODUCTION

The therapeutic complexity of approaching the child and adolescent/teenager who has practiced vicious habits resides in plurivalent factorial cumulation and the etiopathogenic individualization of each side, corroborated with the particularity of each clinical case, constitutes a targeted therapeutic approach[1,2].

Obtaining practical aspects within a group of patients, establishing the correlations between the clinical entity and the causal factor, accompanied by eloquent examples, highlights the practical possibilities, anchored in the current dental field to solve the clinical situations encountered[3,4].

In the dento-maxillary abnormalities we frequently encounter various clinical forms, due to disorders of dento-maxillary functions (respiration, swallowing, phonation, mastication, etc.) or due to the long-term exercise of postural attitudes (sleeping with abnormal positions or abnormal jaw comprehension at various stages of activity of the child), or vicious behavior of sucking, biting or rustling[5,6].

With the teeth eruption it is very important to maintain the health of temporary teeth,
through proper hygiene, dental seals made for caries prevention as well as their treatment[7,8].

Vicious habits (sucking one’s finger, open mouth breathing, abnormal tongue positions during swallowing, bruxism, the introduction of harsh objects in the mouth, atypical swallowing or infantile swallowing, lower lip, finger) cause muscle imbalances in the cavity which are important factors in the development of dental and maxillary abnormalities. The tendency to suck one’s finger is a common practice for children and, unfortunately, difficult to correct[9,10].

Pressure from sucking the finger changes, over time, the shape and alignment of teeth and jaws. The teeth move gradually forward, creating an unsightly look. This habit also can lead to muscular deformity. If this habit of sucking the finger insists, even speech problems that may affect one’s life due to teeth that will be unaligned, as well as malocclusions that may appear as effects, may appear over time[11,12].

Examination of children should be done periodically, so that the eruption, migration, enthalpy health is traced, anomalies with optimal results can be intervened and treated in time.

Although the dento-maxillary vicious habits considered a developmental problem, we can say that both the heredity and the factors the environment have important implications in this process. We can not say with certainty that dento-maxillary abnormality is determined by genetic dowry, if it is the result of environmental factors or there is a combination of these[13,14].

The ideal in orthodontics is to obtain an optimal morpho- function of the dento-maxillary device. The growth and development problems of the dento-maxillary apparatus are the essential problem of the orthodontist[15,16].

The vicious habits acquired during the first childhood are also the cause of some disturbances in the normal development of the dento-maxillary complex: the prolonged teat after 1 year of age, the sucking of the finger, the interposition of various objects between the teeth (pencils, pens), the biting of nails (onychophagia), sleeping in the same position for a long time. Early loss of milk teeth through complicated and untreated caries is a very common cause of disturbance of dental alignment.

These causes can often be associated, which leads to a worsening of the dento-maxillary abnormality. In the dento-maxillary abnormalities we frequently encounter various clinical forms, due to disorders of dento-maxillary functions (respiration, swallowing, phonation, mastication etc.) or due to postural attitudes (sleeping in abnormal positions or abnormal jaw comprehension at various stages of activity of the child), or vicious behavior of sucking, biting or rushing.

The occurrence of the anomaly is conditioned both by the vicious habit or functional disorder, as well as the period of exertion of these noxes on the dento-maxillary apparatus, as well as the child’s age and the general and local state of the dento-maxillary apparatus. Vicious habits are pathological conditioned reflexive activities, generated and maintained by external causes that are exerted on hereditary or gaining ground in the course of their life[17,18].

Their apparition is made from birth, stretching throughout the childhood, and lasts for a very long time, variable, shortly disappearing, or persisting up to 16 years, even more.

When the will intervenes, their disappearance is done consciously, and when feelings of pleasure disappear unconsciously, it is totally unconscious.

In the genesis and the maintenance of habits the most often incriminated factors in their order of importance are: hunger, fatigue, intellectual activity, absence of sleep and entourage[19,20].

The vicious habits found in the etiology of dento-maxillary anomalies in a very high position (85%), we can say, are an important factor in their production.

Fighting the vicious habits will result in a 30-40% decrease in dento-maxillary abnormalities[21,22].

Viciousness breaks muscle balance and disturbs bone growth by giving them a new
direction of growth in the sense of traction and pressure, causing tooth position changes, arches and jaw bones. These are also accompanied by physiological disorders, with consequences in psycho-intellectual development, creating the child a complex of inferiority that leads to a change of behavior in the community[23,24].

The therapeutic complexity of approaching the child and adolescent who practiced vicious habits resides in the plurivalent factorial cumulation and the etiopathogenic individualization of each side, combined with the particularity of each clinical case, constitute a targeted therapeutic approach[25].

The wide range of therapeutical approaches acquire individualized valences in young patients who have practiced vicious habits, the final therapeutic solution being the result of correlation assessment of general condition and oral pathology.

The interdiction of dental-maxillary abnormalities in the initial stage, through orthodontic measures, influences the growth and development of the bone, and it is possible to restore the necessary balance in the oral cavity[26].

Non-timely detection and deconditioning cause important dental-maxillary disorders, which require complex treatments.

**MATERIAL AND METHODS**

Vicious habits can be related to oral respiration caused by obstruction of reperfusion pathways through various pathological processes in the territory of ORL; sucking the finger, lips, cheeks or various objects that are related to the child's mental condition and produce functional, physiological or phonetic imbalances; sleeping with the fist under the lower jaw or supporting the jaw with the fist are habits that require careful therapy and attention because skeletal changes are major. The study was conducted on a sample of 320 subjects who presented themselves at the Pediatric Dentistry Clinic in Galati for various dental treatments without accusing any obvious dysfunctional symptomatology, 120 patients presenting frequent vicious habits. Of these, 56 male (46.66%) and 64 female (53.33%).

By applying the selection criteria, the aim was to avoid problems of differential diagnosis with other diseases of the orofacial system. For the purpose of conducting the research, we categorized the etiological factors of the dysfunction in the primary (they are mainly of a systemic nature, their role is hard to be highlighted), secondary (the usual clinical examination, with emphasis on the impact of vicious habits on occlusal characteristics) and thirdly (tests for the examination of psychoemotional and behavioral characteristics as well as the assessment of stress level were performed).

For clinical and paraclinical studies, a batch of patients undergoing on-demand assistance under the age of 21 years was admitted to the study, observing the methodological requirements imposed by the prospect of achieving the general and specific objectives of the research.

The research aimed at establishing the correlations existing in the group of patients analyzed between the practice of vicious habits and local pathology through non-invasive paraclinical assessment methods, doubled by classical assessments.

The study aimed at establishing a prophylactic and curative therapeutic plan for patients with vicious habits, by conducting a good anamnesis of the patient, accompanied by clinical and paraclinical examinations, using good treatment.

Of the majority of patients, 62% of the urban population was assessed for the origin factor, which should be related to living and working conditions, elements that make their mark on the level of the oro-dental status without eluding the knowledge by the patients of the risk of installing dento-maxillary abnormalities, following the practice of vicious oral habits.

Deconditioning vicious habits

Oral respiration, infantile swallowing, sucking habit are vicious habits resulting from the incompetence of labio-linguo-genius muscles to perform normal functions. The prophylactic and curative treatment of the oral respirator consisted in the prevention of oropharyngeal diseases, the removal of
infectious outbreaks in the vicinity of nasal fossils, in the tonsils and the removal of obstacles in the way of respiration (septum deviation, adenoid vegetation, hypertrophic tonsils); treatment of allergies and disorders of metabolism, sports, respiratory functional reduction, phonation and swallowing, retoning of the orbicular of the lips. Functional respiratory reeducation was performed by breathing exercises, nasal inspiration and deep breathing in fresh air (minimum 2 sessions / day).

Atypical deglutition as an early diagnosis can and has been corrected by exercises aimed at modifying the coordination of contractions of the muscles of the tongue. The child is conscious of the normal position of the tongue and arches during swallowing by demonstrations in front of the mirror.

Methods of deconditioning: Blind glove, elbows, orthodontic device (movable vestibular or fixed shield type palatine arches anchored on molars with cemented rings and provided with spikes platinals), and psychological training. Orthodontic appliances have been maintained for 6 months to prevent the return of habit.

Mio-gymnastics is the measure of choice in interceptive orthodontics in the event of imbalances in muscular units.

Mio-therapy precedes, accompanies and continues the orthodontic treatment with biomechanical or functional devices, the musculature conforming to skeletal structures, thereby enhancing the result obtained and ensuring balanced development.

Functional devices act in two ways: stimulate or inhibit mandibular growth; eliminate or reduce the parasitic effects of soft tissues on the teeth, thereby also favoring the normalization of the environment.

Miotonic devices (Andresen-Haupl, Harren, Harvold-Woodside activators) force the muscles to be excessively stretched constantly. The muscles can not shorten and produce forces by isomeric contraction.

Psychosomatic and psycho-socio-aesthetic implications of the maxilo-somato-dental anomalies

It is important that the preschool, school and adolescent possess the phono-articulator in its integrity in order to be able to acquire, but above all, in order to articulate correctly all the sounds of the language.

Any organic anomaly that hinders the normal functionality of the phono-articulatory organs may be the basis of various types of pronunciation disorders. Their combat is done by applying orthodontic appliances, carrying out specific deconditioning exercises or by applying the splint, depending on the present anomaly.

Sometimes, mere discussion and constant supervision can decondition the habit.

However, most of the time, when the habit was found late, its deconditioning will be all the more difficult, and it will be necessary to use devices made by dentists specially designed to do so, to correct the problems that have arisen. For effective resolution, a close collaboration between child-family and specialist is needed.

CONCLUSIONS

The risk of developing a craniomandibular dysfunction is greater with the association of several predisposing factors.

The problem of craniomandibular dysfunction, a clinical entity with profound implications on the individual's quality of life, should be approached predominantly neuromuscularly as an acknowledgment that dysfunctional craniomandibular syndrome as a musculo- skeletal is essentially a neuromuscular one.

The various clinical forms of dento - maxillary abnormalities characteristic of each age stage are due to the association of different vicious habits and the intensity or duration of these functional disorders.

The suppression of vicious habits through myogymnastics and functional reduction are aspects of intervention of functional treatment on incipient or already formed dento - maxillary abnormalities.

Dento-maxillary anomalies therapy aims to achieve an optimal morpho-functional individual that provides stable, functional and aesthetic inter-arches and occlusal relationships.

Each patient is unique in his/her own way, as well as the vicious habit developed, but
also the consequences on the dento-maxillary apparatus. Therefore, complex treatment should be individualized and the time of its initiation remains at the discretion of the specialist physician.

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