

CORRELATION BETWEEN DENTAL-MAXILLARY ABNORMALITIES AND DISFUNCTIONAL FACTORS

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Abstract

Introduction: Maxillary and dental device functions (mastication, deglutition, breathing, vocal tract, mimics) are provided by rhythmic movements of jaw, lips and mimic muscles. Under their action, jaws are shaped in relation to the growth direction and intensity of muscular forces, such as visceral skull architecture continues his restructuring (1).

Method: The research-study was conducted on sample consisting in 125 cases, aged 6-9 years, with the first period of mixed dentition. One pursued the dental and maxillary abnormalities and their associated parafunctions.

Outcomes: 47% of all cases showed maxillary and dental abnormalities while 28% out of these showed associated parafunctions; most common of these was atypical deglutition which amounted to a 31% share.

Conclusions: The oral habits induce abnormalities and they are dependent on frequency, intensity and duration of the habit's action.

Keywords: dental and maxillary abnormalities, atypical deglutition, mouth breathing.

INTRODUCTION

The functions of dental-maxillary apparatus (mastication, deglutition, breathing, vocal tract, mimicry) are ensured through rhythmic movements of mandible, lips and muscles of the mimicry. Under their action, the maxillaries are shaped in relation to the direction and intensity of muscular forces, architecture of visceral skull being in continuous reorganization process. Normal development of multiple and complicated functions of the dental-maxillary apparatus represents the most important trophic system of the facial massive. (Grivu et al., 2001)

The normal relation of muscular groups is important in repose, as well as during the functions. The dental passage has to be balanced also during the development of dental-maxillary functions. The occurrence of para-functions strongly disturbs the dental passage. (Cocarla, 2000).

The vicious habits, as sucking fingers, interposition of language or of lips, may modify the position of teeth, as well as the relations and force of dental arches. These pressure habits interfere with the normal growth and with the function of oro-facial musculature. (Voinea et al, 1996)

SUCKING OF FINGERS

The imbalances caused through this habit manifest at the level of muscular and skull units: in relation to the direction of forces initiated may cause sagittal and vertical displacements of the dental-alveolar process. (Dorobat, Stanciu, 2003).

These determine imbalances of dental passage, stimulating several muscle in their detriment, thus producing additional, through direct pressures, damaging forces with abnormal directions, with smaller or higher repercussions of the increase of dental-alveolar arches in relation to:

- the child's age
- duration of habit
- intensity
- position and technique adopted

After Canut- Brusola, quoted by Voinea, sucking of fingers is encountered at over 50% of the small children, the reasons for this habit being unknown. The same author affirms that sucking does not appear to be connected to the type of diet, with its duration or with psychological reasons.

The habit of sucking the finger starts with the first year of life and continues until 3 - 4 years old. The persistence of habit was considered as a sign of anxiety and emotional instability at children. (Canut-Brusola, quoted by Voinea,)

ABNORMAL DEGLUTITION (INFANTILE)

In atypical deglutition, the tongue's apex may be supported on the palatine faces of superior incisors or on the lingual faces of the inferior ones, it may be interposed between arches, hindering the accomplishment of intercuspation, anterior conclusion being produced through the contact tongue – lip. The aspiration or interposition of inferior lip may be associated, contractions of orbicular and mentonery muscles

The issue of correlations between disorders of deglutition and AnDM is related to the one of correlations between muscles on one side and hard tissues of oro –facial complex, on the other hand: if the structure and function of soft tissues determines the deformation of skeleton and of dental arch, or if the soft tissues are complying to an abnormal shape of the oro-facial skeleton. Rix, Straub, Cauhepe, Balters, Gugni give a special role to abnormal deglutition (infantile type) in producing An DM. (Boboc, 2003)

ORAL BREATHING

Numerous research emphasized that there are correlations between breathing disorders and dental-maxillary abnormalities. The results of

statistical studies on these issues may be synthesized in the following two conclusions:

- at a hundred of children with ADM, the number of children with RO is higher than at a hundred of children with regular development of dental-maxillary apparatus

- at a hundred of children with RO we can find more ADM carriers than at a hundred of children with nasal breathing (Boboc,2003)

The vicious habits are defined as repetitive automatic actions with result on the natural complex process, defeating the action of muscles. The vicious oral habits are repetitive actions causing disorder at the level of teeth and at the level of support tissues, such as sucking the finger and the lip, interposition of the lip and nails, infantile deglutition and oral breathing (Finn,2003).

These habits are temporarily normal, but if they are persistent at children growing, they cause modifications at the level of oral growing structures which may cause local modifications and malocclusions (Christensen et al,2005)

The oral habits induce abnormalities and are dependent on the frequency, intensity and duration of habit's action.

Gildasya and Syarief conducted a study on 92 homeless children, 47 boys and 45 girls from Yayasan Bahtera Bandung, aged between 6 - 12 years old. The results were that 50% of the children had vicious habits and 50% not. In relation to gender, the prevalence was higher at boys -55,32% than at girls -44,44%. Sucking the finger is the most frequent- 43,84% meanwhile the oral breathing and nail biting are on the last position -6,25%. The oral habits cause dental mal-positions and affect the support tissues, depending upon the intensity, frequency and duration of practicing the respective habit.(Gildasya,Syarief ,2006)

PERSONAL STUDY

1 OBJECTIVE

The current study aims to determine the frequency of dental abnormalities at a lot of children with mixed dentition and vicious habits.

2 METHODOLOGY

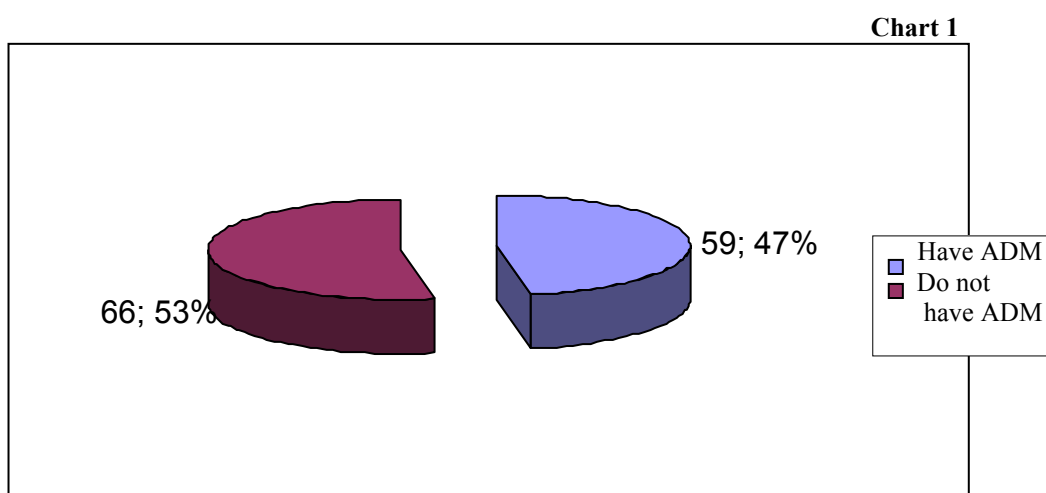
The study was conducted on a lot of children of 6-9 years old, presented for dental check-up at the cabinet from a school in Oradea.

The subjects were examined according to an observation chart containing personal data; exo-oral exam, frontal and profile, endo-oral exam, aiming the teeth, uni-dental and group modifications, occlusion

modifications, functional exam. Following this exam, we formulated a clinical diagnosis of the main obvious abnormality.

3 RESULTS AND DISCUSSIONS

At the age of 6-9 years, presenting the first period of mixed dentition, out of the 125 subjects examined, 59 (47%) presented dental-maxillary abnormalities, chart 8.1



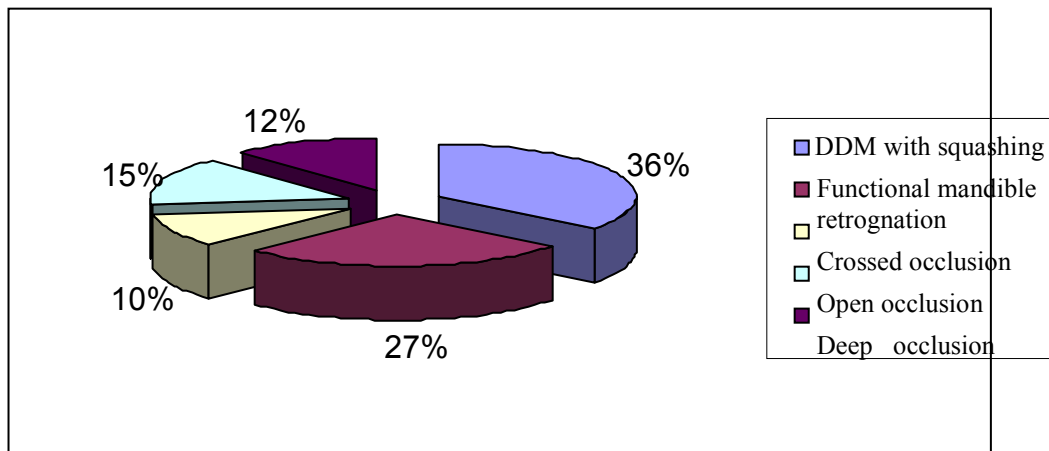
Among those with dental-maxillary abnormalities 47%,28% had associated para-functions and 19,2% did not present para-functions.

Among those without dental maxillary abnormalities 53% (66 cz), 16,8% presented para-functions.

The dental-maxillary abnormalities present at 59 subjects were the following:

- DDM with squashing 35,5%(21)
- Functional mandible retrognathion 27,1%(16)
- Crossed occlusion 10,1%(6)
- Open occlusion 15,2%(9)
- Deep occlusion 11,8%(7)

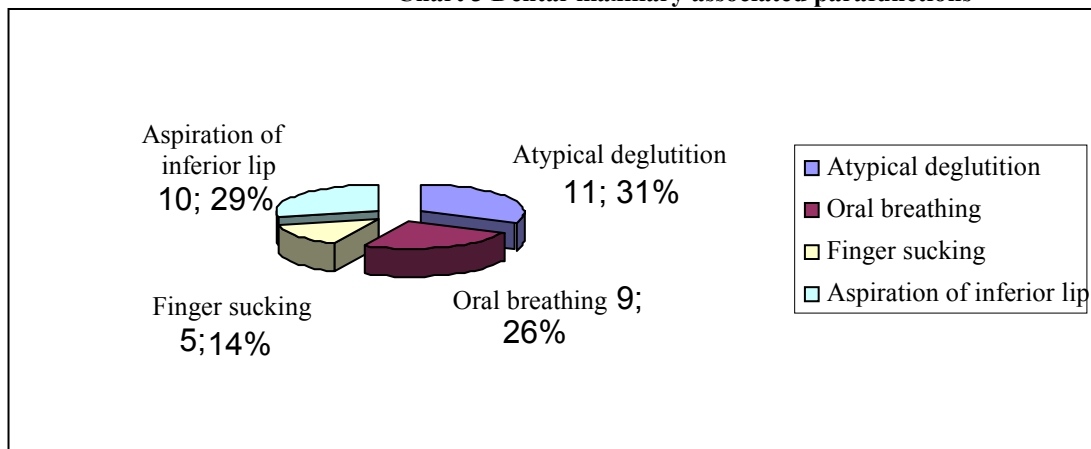
Chart 2 affections of study group



28% of the subjects presented the following functions:

- Atypical deglutition 31%
- Oral breathing 26%
- Finger sucking 14%
- Aspiration of inferior lip 29%

Chart 3 Dental-maxillary associated parafunctions



CONCLUSIONS

The balance of muscular groups will favor the harmonious alignment of teeth on arches normally adjusted. Their imbalances will lead to several types of abnormalities, due to the modification of growth direction, in the sense of the stronger force.

The normal relation of muscle groups is important in repose, as well as during the functions.

In the current study, on a small number of patients we found a frequency of ADM of 47%, value lower than the ones from the literature, 50-60% (2)

The para-functions were present at 28% of the subjects, the most frequent being atypical deglutition -31%, followed by the aspiration of inferior lip 29%, oral breathing -26%, finger sucking - 14%, data similar to the ones from the literature. (Bosnjak et al 2002, Da Costa 2002, Onyeaso 2004, Bishara 2006, Larsson 1985)

The oral habits induce abnormalities and are related to the frequency, intensity and duration of habit.

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