

## REVERSE CROSSBITE-STATISTICAL STUDY IN THE PERIOD OF MIXED DENTITION

Cuc Albinita,\*, Cuc O. \*\*

\*University of Oradea, Faculty of Dental Medicine, Oradea, Romania, e-mail:

[cucalbinita@yahoo.com](mailto:cucalbinita@yahoo.com)

\*\* University of Oradea, Faculty of Medicine and Pharmacy, Oradea, Romania, P-ta 1  
Decembrie 5

### Abstract

*Anterior crossbite (reverse crossbite) is installed in the temporary dentition and mixed dentition, as a result of a lack of balance, either at the level of a skeletal, functional or dental component of the orthognate system of the child. It may be an abnormality in itself or an associated symptom, usually DDM with jam or dental inadequate positions.*

**Material and method:** *a lot of 719 children from a school from Oradea was investigated, children which were examined in the stomatological cabinet and an onservation chart was thus drafted following the model of the Stomatological Clinic, Oradea. The odontal diseases were noted of all the teeth present on the arch, as well as the unidental modifications, as well as those of the dental occlusion. Alginate imprints were performed for models at both arches.*

**Conclusions:** *the frequency of crossbite is the highest between 10-13 years old – 5,80%, in comparison to the age group of 6-9 years ols – 4,54% and it is most frequently associated with the DDM with jam. In 46% of the cases, for the alignment of the teeth in reverse crossbite was maintained, and in 54% of the cases the space was narrowed.*

**Key words:** crossbite, temporary teeth, malocclusion

### INTRODUCTION

It may represent an abnormality **in itself or an associated symptom, usually** DDM with jam or inadequate dental positions. It appears in the mixed dentition and it may interest 1 or 2 frontal superior teeth.(Cocarla,2000)

#### **Classification in relation of the crossbite:**

##### **Dental previous simple crossbite**

- The crossbite usually involves one or two teeth
- The facial profile is normal in the centric relation and in the centric occlusion
- The antero-posterior skeletal relation is normal
- The absence of harmony at the level of dental component results from an abnormal axillary inclination, either of the maxillary anterior teeth, or of the mandibular ones. This thing may be verified from a cefalometrical point of view through the appreciation of the relation between the superior incisors and the ANB angle. The rest of the teeth are usually found in a neutral relation.

**Anterior dental functional crossbite**

- In a centric relation or in a posture relaxation position the patient presents a normal facial profile
- In a centric relation, usually, the teeth are in relation „head to head” and the molars are distanced, but in a neutral relation
- During the closing movement, an occlusion interference determines the sliding of the mandible towards the anterior area

**Anterior skeletal dental crossbite**

- In a centric relation, the profile is right or concave
- In a centric occlusion, the molar relation is of 3rd class + anterior crossbite
- Cephalometrical: the reduced or negative value of the ANB angle points out either a relatively retracted maxillary, or a mandible positioned in an anterior place
- The gonion is obtuse, with a value ranging between 130- 140 degrees.

**Etiology:**

1. The anterior crossbite is installed in the temporary dentition and mixed dentition, as a result of a lack of balance, either at the level of a skeletal, functional or dental component of the orthognathic system of the child
2. The presence of supernumerary anterior teeth –meziodens may modify the eruption axis of the incisors from the regular series
3. Modification of dental axis, oralization of superior teeth or the vestibularization of inferior teeth
4. The persistence of temporary teeth and the oralized eruption of the permanent superior teeth (Glavan et al, 2008)

**MATERIAL AND METHOD**

In order to contain in their whole complexity the clinical and etiological issues related to the study of reverse crossbite, we investigated a lot of 719 children from Iosif Vulcan School from Oradea, aged between 6 - 14 years old.

The data gathered from the analysis of material were synthesized in diagrams monitoring the frequency, distribution on age and sex of the patients and the percentage number of the cases with reverse crossbite.

For each child, the following data was drafted:

- observation chart following the model of the Stomatology Clinic of Oradea. The dental diseases were noted from all the teeth present on the arch, as well as the unilateral modifications and the ones of the dental occlusion
- alginate imprints were performed for models at both arches.

## RESULTS AND DISSCUSIONS

Out of the total of 719 children contained in the lot taken for study, at 37 patients we noticed the presence pf reverse crossbite. This number represents the percentage of 5,15% represented in the following diagram.

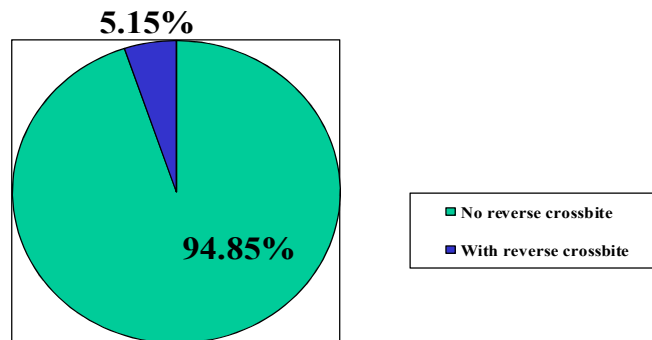
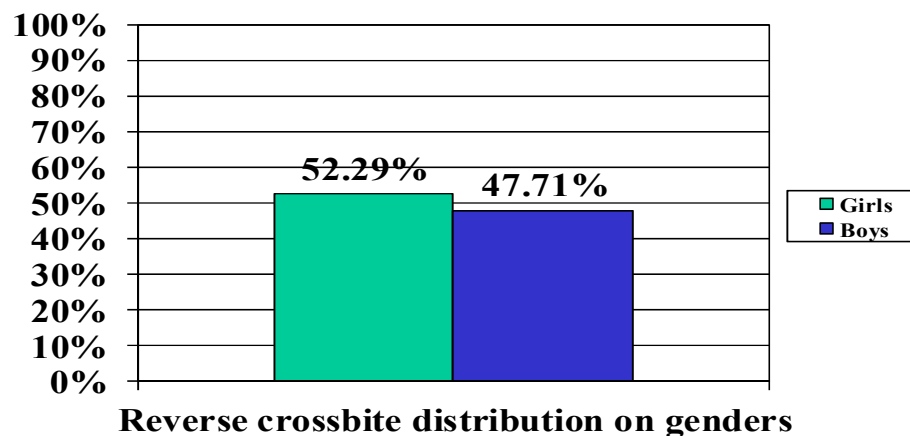


fig.1 Total pacients

Out of the 37 patients with reverse crossbite, 21 cases were noticed at girls and 16 cases at boys representing the distribution of genders of this abnormality, expressed with the help of the following diagram.



Reverse crossbite distribution on genders

fig.2 Reverse crossbite distribution on genders

The 719 patients were distributed in two groups in relation of age ranging between 6-9 years, respectively 10-14 years. Patients aged between 6-9 years were in number of 374. Patients aged between 10-14 years old were in number of 345

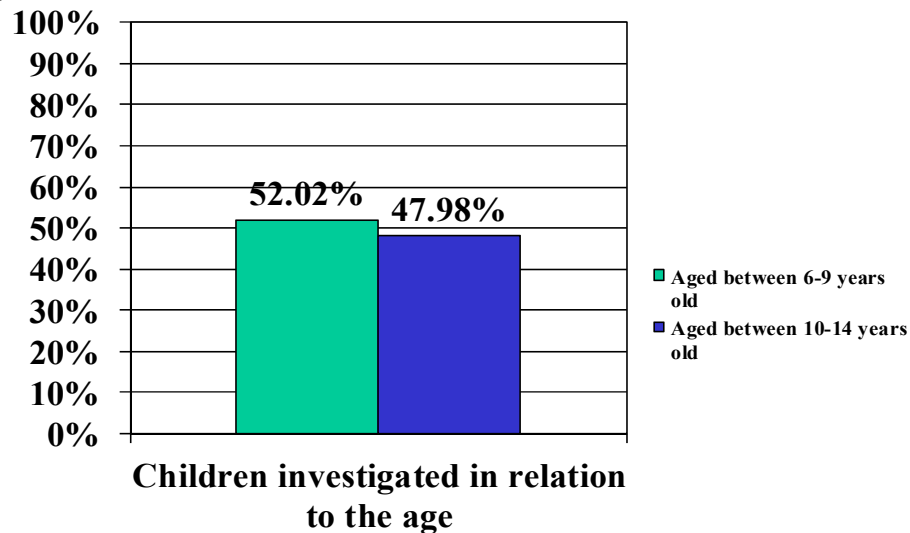


Fig. 3 Children investigated in relation to the age

In the category of age ranging between 6-9 years, meaning 374 children investigated, we found 17 cases of reverse crossbite, representing a percentage of 4,54% . In the category of age ranging between 10-14 years old, meaning 345 children investigated, we noticed 20 cases of reverse crossbite representing 5,80%. These results are concluded in the following chart.

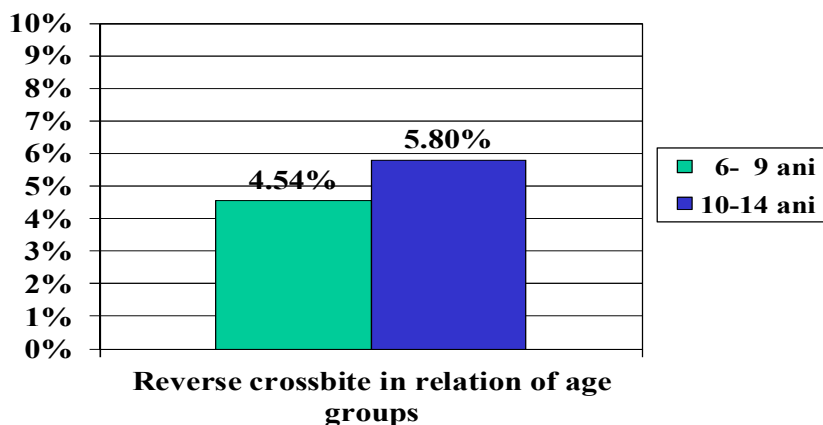
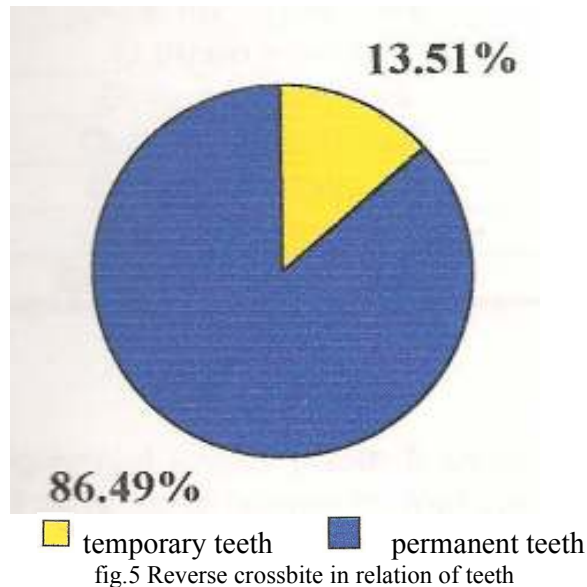


fig.4 Reverse crossbite in relation of age groups

Of the 37 children presenting the reverse crossbite, at 5 children was noticed this abnormality at temporary teeth, and the rest of the 32 children the reverse crossbite was found at the level of permanent teeth. These numbers represent in percentage 13,51%, respectively 86,49%. The proportionality between these percentages is expressed with the following diagram:



The reverse crossbite may be found with the space maintained especially in the first period of mixed dentition or with the decreased space more frequently encountered in the second period of mixed dentition. From this point of view, the reverse crossbite may be represented through the following diagram: 54% represents the reverse crossbite with narrowed space, respectively 46% with maintained space.

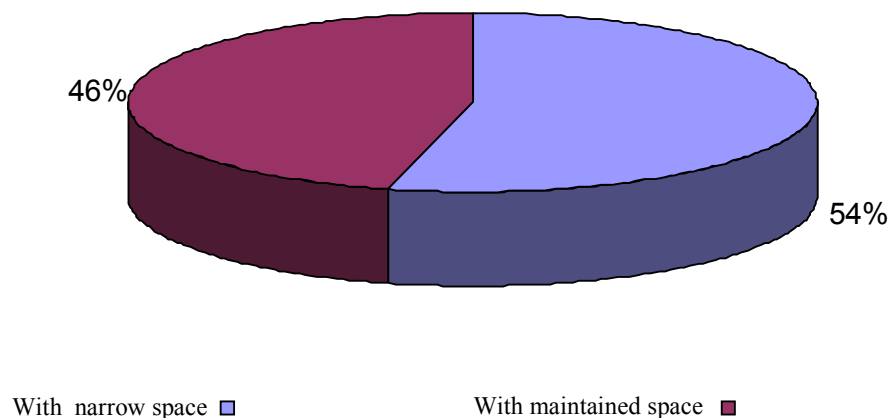


fig.6 Reverse crossbite in relation of space

## CONCLUSIONS

The results obtained with the help of statistics show us that there is no significant difference at the occurrence of reverse crossbite in relation to gender.

The frequency of crossbite is larger between 10-13 years old – 5,80%, in comparison to the age group of 6-9 years old – 4,54% and it is associated most frequently to DDM with jam. In 46% of the cases the space for the alignment of teeth in reverse crossbite was maintained, and in 54% of the cases the space was narrowed.

Through the seriousness of the functional disturbances, which are very important – physiological, manducatory and self-maintenance disturbances, the reverse crossbite is considered a stomatological emergency which means the establishment of a treatment as early as possible.

## REFERENCES

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