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PICCIN

"QUICK EXPANSION OF THE PALATE IN PRE-SCHOOL AGE"

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INTRODUCTION

Among the orthodontic appliances at our disposal for the correction of the maxillary endoalveolitis and for the secondary maxillary hypoplasia, the quick expansor type "Veltri" revealed itself as particularly effective both for the ease of the use and for the versatility in different clinical situations.

The causes of the maxillary endoalveolitis are:

- primary maxillary hypoplasia (4 - 10)
- muscular proprioceptive squilibrium both in ascendent and in descendent way
- iatrogenic damages

The causes of the secondary hypoplasia are:

- chronic infections of the superior aerial ways
- allergic rhinitis
- nasal septum deviations
- tongue posture alterations and typical swallowing.

It is necessary to remember some considerations from different points of view:

- a) anatomical and physiological
- b) neuromuscular growth
- c) breathing pathology
- d) swallowing pathology

a.) We cannot forget that from an anatomical point of view the sagittal suture is also called medial palatal suture. This suture remains at a synfibrosis step **for several years after the birth, surely 14-16 years till the trasformation** into synostosis, which seems to begin in this period starting from the posterior place and with a quicker oral progression than nasal. The age of the complete closure is very variable, influenced by many factors. The upper maxillary increasing is of sutural and appositional type.

b.) To understand the motivations why with have some-times the persistence of the baby-swallowing we mast remember that for swallowing and breathing the nervous system needs continuous informations which are sent by the tongue, the lips, the cheeks, the pharynx and periodontic. (2)

c.) In the oral pathological breathing we have not the labial seal and it does not exist a condition of muscular equilibrium between the forces exercited by the tongue and by the cheeks any more. Besides in the oral pathological breathing the tongue cannot always take its normal position as it must permit the air flux through the oral cavity. As to say, the tongue take a lower positions reducing the lateral pression which it usually exercites on the dentoalveolar arch of the maxxillary.

In this way we put in evidence a correlations among the oral breathigh, the ogival palate, the intermaxillary reduced diameter and the dental cross

bite. For this reason we have an insufficient nasal breathing and the subject can be defined as "facies adenoidea" and, in a better way: "facies disgnatica". (3)

d.) The function of the tongue has an important role in the swallowing and for this reason a pathological position of it can determine a deviation for the eugnathic development of the subject. During the bottle feeding the tongue is on the feeder to avoid the exit of the milk, in this way there is not the physiological position and pressure of the tongue on the palate, that, for this reason, produces an ogival conformation of the palate itself with a restriction of the nasal cavity and sector deviation. So, the tongue instead of being a natural and physiological orthodontic appliance for the eugnathic development of the stomatognathic apparatus, it becomes a dysgnathic orthodontic apparatus for the pathological postural positions. Both on the swallowing and on the growing of the stomatognathic apparatus, the vicious behaviors are very important, as, for example, the sucking of the thumb, the interposition of the pencil among the teeth (Lapsofagia). (1-5-6-9-13-14)

METHODS AND MATERIALS

In this communication we are presenting a series of cases in which the quick expansion of the palate in pre-school age has been necessary.

We examined about 50 children between 3 and 5 years old.

This expander has the peculiarity to have an anchorage with bands on only two teeth (on 16 and 26 in permanent dentition, on 55 and 65 in deciduous dentition as we are considering).

We already had a great experience on older patients, about 300 subjects.

This expander has the peculiarity, as we have already said, to be anchored on only two teeth. These bands are soldered to a double bar joint which has a central screw of different length (mm.6-8-12) according to the degree of the necessary expansion.

To obtain a quick palatal expansion it is necessary to do 1/4 of circle three times a day, as to say 0.75 mm., a day.

On the contrary, to obtain only a dental transposition we do 1/4 of circle every 72 hours.

Thanks to the quick expansion on only two teeth, we had many important advantages; among them, the most important is that to obtain a wedge opening of the intermaxillary suture which is not obtainable with a four bands expander. This diastasis is favourable also for the increasing of the aerial flux through the nasal fossas with another benefic effect on the pneumatic cavity enlargement (7-8-11-12) of the splanchoskull.

The best aerial nasal flux allows the palatine suture to be physiologically sollicitated on each breathing act thanks to a minimum movement of expansion.

Our experience on more than 50 children in pre-school age makes us to say that through this kind of expansion it is possible to correct both mono/bilateral cross bites and to obtain a better correction and eugnathic growth of the palate, of the nasal septum and of the aerial cavities.

CONCLUSIONS AND SUMMARY

The palatal expansion is a bloodless method and not surgical that permit us to reach anatomo-functional results as the clinical-radiological enlargement of the palate, the correction of the nasal septum in the space of the upper maxillary and then of the mandibula and of the tongue, the improvement of the masticatory function, and the improvement of the breathing function through the increasing of the aerial nasal flux.

Besides, we can put in evidence that this device is easy to be used and it is well accepted by these very young patients as we already obtained in older ones.

KEY WORDS

Medial palatal suture

Quick palatal expansor with two bands type "Veltri"

Application in very young children from 3 to 5.

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