

## PREOPERATIVE ORTHODONTIC TREATMENT OF CONGENITAL LIP AND PALATE CLEFTS LITERATURE REVIEW AND REPORT OF A CASE

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### SUMMARY

The orthodontic treatment of the inborn lip and palatal clefts has a leading part in their complex treatment, both preoperatively and postoperatively, for the achievement of optimal results. Based on the literature review, the report considers the stages of preoperative orthodontic treatment using an obturator and the results of treatment of a case.

**Key words:** palate cleft and lip, orthodontic treatment - obturator

Currently both routine practice and the literature provide evidence in favor of the rule for complex treatment of congenital clefts of lip and palate.

Based on WHO data the prevalence of the lip and palate clefts in different races varies, being 2:1000 for the Asians, 1:2000 for the Africans and between 0,6 to 1,5:1000 in the Caucasian race. These data shows that the condition is most prevalent amongst the Asians and least prevalent amongst the Africans.

In our country, according to Zhekov the prevalence is 1:1417, while in the view of Georgiev amongst 850 newborns there is one with congenital cleft.

Kroumova and Anastasov found that the clefts are more prevalent in girls than in boys, while in view of the localization the clefts are more on the left side than the right.

The prophylaxis of the congenital clefts is based on pre-natal diagnostic activities:

1. DNA analysis of the mother.
2. Chromosome analysis of the amniotic fluid of the pregnant woman.
3. Two- and three-dimensional analysis of the fetus and color Doppler analysis of the cleft.

The above mentioned test methods underline the complexes approach in early diagnosis of the clefts and their prophylaxis. The congenital clefts are accompanied by severe anatomical and functional impairments since the first hours following birth. This necessitates their early treatment in view of securing the vital for the baby process of sucking.

The isolation of the mouth cavity through an obturator is a well-known method. It creates optimal conditions for the feeding function in newborns with congenital clefts.

The early placement of an obturator combined with cheiloplasty improves the balance between the internal muscle ring (the tongue) and the external muscle ring (lips and cheeks). Thus the obturator can stimulate also the growth of the upper jaw.

### A Case Report:

On September 16, 2007 the newborn R.I. has been referred to the ambulatory ward of the chair of maxillo-facial surgery from the Obstetrics and Gynecology clinic. The newborn had a congenital cleft of the lip and the palate. The baby has been fed through a naso-gastral probe. The clinical examination has revealed complete traversing cleft of the lip, the alveolar ridge, the soft and hard palate on the right side. After the diagnosis it has been decided that an obturator of the upper jaw is made. The plaster cast from the upper jaw impression shows the distance between the small fragment on the left and the big fragment of the cleft on the right at the level of the alveolar ridge. It is about 18mm. The small fragment is rotated inside towards the cleft of the palate. The laboratory made obturator has been placed and the mother has been instructed how to feed the baby. Two months following the placement of the obturator the parents reported that the baby has started to push it

out („spit”), which is one of the symptoms of difficult suspension due to jaw changes. This necessitated the production of a new obturator, and the comparative analysis between the first and the second impression definitely showed the correction of the small fragment towards the big one and the partial decrement of the cleft.

From all above said the following summary can be drawn: The early treatment with an obturator facilitates the feeding of the baby and corrects the deformity in the area of the alveolar ridge. The approach of the two fragments of the cleft shortens the volume of the planned for a late stage uranoplasty and thus facilitates the surgeons in their next steps.

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