



## **Clinical Case of Non-Surgical Dynamic Therapy of a Child with Congenital Trigenocephaly**

Dr. Elena Martynova, \*

**\*Correspondence to:** Dr. Elena Martynova, Moscow.

### **Copyright**

© 2023 **Dr. Elena Martynova**. This is an open access article distributed under the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

Received: 06 July 2023

Published: 01 August 2023

**Key Words:** *trigonocephaly, congenital pathology of the skull, non-surgical dynamic therapy, possibilities of long-term outpatient therapy*

### **Annotation**

This article brings to your attention a clinical case of non-surgical treatment of congenital trigonocephaly in a child from twins, on an outpatient basis. The principles of the approach to the management of a child with this pathology in the absence of the possibility of surgical correction are described. As a result, a complete normalization of the skull was obtained, with the preservation of vision functions. Photos of the child are presented with the kind permission of his parents.

Trigonocefaly (from the Greek trigogonon, “triangle”, and kephale, “head”) is a congenital condition of premature fusion of the metopic suture (metopon means forehead in the Greek), leading to a triangular forehead. It may occur syndromic, involving other abnormalities, or isolated.

### **Anamnesis**

The girl was born on October 30, 2019 at 37-38 weeks of the first pregnancy of a 38-year-old woman by Caesarean section. The indication for surgery is a transverse presentation of a girl. Twin baby. Birth weight 2450 g, height 49 cm, head circumference 31,5 cm. The diagnosis of trigonocephaly was made in the first days. The second child, a boy - without pathological changes. In general, the development of the child is normal. At the time of writing the article, at 3 years 6 months, weight 17 kg, head circumference 49.5 cm, height 103 cm.

### **Indications for non-surgical dynamic therapy**

After the first consultation of surgeons, the diagnosis was confirmed. Surgical correction of the pathology of the skull with the help of special plates was proposed at the age of 6 months (the weight of the child must be at least 6 kg). The possibility of surgical treatment in Germany was considered. However, as can be seen from the date of birth of the girl, the medical history developed against the background of the lockdown. Planned operations were significantly limited. Several visits to the osteopath were unsuccessful.

However, time passed, and it was not to be lost. So I suggested another method of treatment. Based on my experience of observing children from birth onwards for decades, I knew that it would have some effect. The question was, what effect? In the situation described, this was a small hope for improvement, and the parents decided not to miss it.

### **Principles of therapy**

The principles of therapy have developed from an understanding of the features of the skull of a newborn child:

- Bone plasticity,
- Rapid head growth

The highest rate of head growth is observed in the first year of life. Therefore, during this period of time there is an opportunity to influence the shape of the skull. And here it is important to use the factor of intracranial hypertension. It is present in all children at this age. Let me explain. In order for intracranial hypertension not to occur, it is necessary that the bones of the skull, the brain and cerebrospinal fluid grow in a rigid correlation with respect to each other, and even throughout the year. This does not happen in nature. The cerebrospinal fluid, as an incompressible structure, serves as a buffer in such cases. It either fills the space of the skull that is not occupied by the brain (“ex vacuo” hydrocephalus), or causes intracranial hypertension if the growth of the brain outpaces the growth of the skull. In this case, the syndrome of increased motor and emotional excitability, poor sleep, and sometimes vomiting are clinically manifested. Naturally, such conditions require differential diagnosis.

Obviously, the main factor influencing the treatment of this pathology is the participation of parents who understand the importance of observing all the rules and following them. The peculiarity of the situation is that the child is at home, in normal conditions. The doctor can only occasionally assess the condition, and the entire burden falls on the parents, mainly on the mother. And there are two children in our case!

In everyday contact with a baby, it is almost impossible to observe the dynamics even with professional experience, let alone a young woman loaded with every minute problems. For example, for some period of time, the mother of the child stopped following the recommendations, and the regression was not long in coming.

I must say that this was a clear incentive to continue working with the child. Here it must be emphasized (not reaching the last lines) that my respect for the mother of the twins has grown significantly during our communication.

### Methods of therapy

The method is simple. The most important factor is strict adherence to the recommendations, since the main burden falls on the one who is inseparably with the patient. So there are two principles:

- The main position is on the stomach, the forehead rests on a fairly strong support (see photo);
- Massage of the head, mainly the forehead, directing the movement of the fingers from the center to the temples. Repeat in short sessions, but at least every hour.

### Status dynamics

The dynamics of the state is best demonstrated by photographs. I must say that a positive trend was noted already in the first two weeks of dynamic therapy. By 6 months there was a good result. By 8 months, the residual deformation was insignificant. At the age of 1 year, it was possible to speak about the normalization of the shape of the skull.



1st week



1st week



**2 months**



**2 months**



**2 months**





**Baby Position in Bed**



**4 Months**



**4 Months**



**3 years 6 months**



**3 years 6 months**

---

## Conclusions

The clinical case of non-surgical treatment of trigonocephaly presented to your attention demonstrates the possibility of its use in certain situations. In any case, it can be recommended for immediate use after diagnosis. This can, at a minimum, reduce the volume of surgery at the time of its application.

The proposed method showed a positive result when applied. This gives grounds for its use, especially when surgery is not available for any reason.

